

Life is a Living Wave

By Jayant Kapatker

Life is a Living Wave

Really! Yes, really 'Life is a Living Wave' is the only truth. It sounds completely bizarre and even more difficult to comprehend and understand. We are so used to the physical world. We see all the activity and action taking place in the physical world, we daily live and interact in the physical world. We get up the morning, go to work, return home, spend time with the family and then go sleep. All this happens in the physical world, so where and how does the 'Living Wave' come into the picture.

Do we really live in the physical world? To answer this question truthfully, I have a challenge - show me a 'real' 'live' or 'now' object in this world. Everything you see or interact in this world are 'memory' objects only. They are dated objects. There are no 'now' or real objects in the physical world. The sun you see is not real, it is an 8-min younger* memory object. Why? We know, it takes light 8 minutes to reach us from the sun, so the sun we see in the sky is an 8-minute younger sun.

** This 'younger' terminology is used all over this article. It means that the object is younger as compared to the 'now' object. The 'now' sun is 8-min older as compared to the sun we see in the sky or the sun the sky is 8 min younger as compared to the 'now' sun. Please keep this in mind while reading this terminology.*

The sun we see is not a 'live', 'real' or 'now' sun, it is basically a memory object which is 8-min younger. In the same way the moon we see in the night is a 3 second younger memory object, because the light takes 3 second to reach us form the moon. The plane in the sky is 300 milliseconds younger plane, the tree outside my window is 10 microseconds younger tree, and the computer in front of me is 1 nanosecond younger computer. This logic applies to every object in the physical world. It is just impossible for anyone to show or interact with a 'live' or 'now' object in this physical world. This not only applies to objects but also to people, animals and any living being. Anything and everything in this universe is only made up of memory objects. It is only made up of dated stuff.

I like to compare the physical world to the playback from a DVR recording. The DVR contains recorded events and it is made up of memory objects only. When you are watching the DVR, you are never watching a 'live' event but you are always watching the recording of a live event. So, it is correct to say a DVR is only made up of memory objects, you will never find a 'real' or 'live' objects by looking at a DVR recording. Like a DVR, the physical world is also made up of memory objects only. It is never real, it is made up of dated objects only.

If there is a recorded event in the DVR, there must have been a live event before. The live event is recorded in the DVR and then the recorded event is played back as and when required. The same logic and reasoning also applies to the physical world. We know the physical world is made up of memory objects or recorded objects only. Like in the DVR case, there must be a 'now' or 'live' objects/events for everything in the universe. The sun we see is an 8-min younger sun, so where is the actual sun, which is not 8-min younger. Where is the 'now' sun? It must be somewhere. In the same way, the moon we see is a 3-sec younger moon, the actual or now moon must be available somewhere. The tree I see outside is a 10-millisecond younger tree, but the 'live' or real tree must exist somewhere. This logic applies to all objects (living + nonliving). All these 'now' objects in the world must exist somewhere, but where?

From the DVR example, it would seem there are two types of events – the live event and recorded event. They are both separate and distinct. If the live event is happening now, the recorded event is viewed later. In the same way, this world is also made of two types of objects - 'memory' objects and 'now' objects. They must be separate and distinct. The physical world around us is made up of memory objects only. In the same vain the 'now' universe must be made up of 'now' objects only. A universe where the existence of memory object is impossible.

Unfortunately, we know virtually nothing about the now objects and the now universe and science has made very little attempt to investigate this area. The focus of this article is to explore the now objects or the now universe. We will use both science and Vedanta to support our explanation. To get a better understanding on this subject, we will try to answer the following questions.

1. Where does the 'now' universe reside?
2. What is the 'now' universe made off?
3. How does the 'now' universe function?
4. What is the source of the 'now' universe?

1. Where does 'Now' Universe Reside?

First question to ask - What is Now? Now is something which is not the past or the future, but it is now. It is not $t = 0+$ or $t = 0-$, it is $t = 0$. It is the current moment. Now is time based and is a fleeting moment, it comes and then goes off rapidly, so it is not easy to grasp it. But then again, as one 'now' goes away, another 'now' moment takes its place. There is always a 'now' moment. There is never an instant when there is no 'now' moment. Do all the 'now' moments need to be the same. The single word answer is – Never. They are never the same. The tree

from this 'now' moment to the next 'now' moment is not the same, because it has grown older by the small-time fraction.

You can never compare two 'now' moment. The preceding or coming 'now' moment is either the past or future, you can only have only one 'now' moment at any give time.

So where does the 'now' moment reside? On the face of it, it seems scattered all over the place. Your 'now' moment is with you and my 'now' moment is with me. Everyone has their own 'now' moments, even if they are in this world or some other location (or galaxy). It is not incorrect to say $t = 0$ is the 'now' moment. The starting of the time meter is always at $t = 0$ and this is the 'now' moment. If time flows, as it always does, then $t = 0$ becomes $t = 0+$ and it is no longer the now moment. However, a new $t = 0$ takes hold and it replaces the old one. This way the now moment is always present. It is never not present.

Okay, the now moment or $t = 0$ is always present, but where is its location? One thing is clear it cannot be present out there, because everything out there is only memory objects. If it is not out there, where else can it possible be located. A clue - it must be outside the spacetime fabric. Where is this outside? The surprising answer is that the now moment or $t = 0$ is located within you. Vedanta always taught this. To get a better understanding of this idea, let us investigate the now moment for ourselves and the now moment for all the objects.

1. Your/Mine/Our $t = 0$
2. $t = 0$ for objects

1. Your/Mine/Our $t = 0$

To locate 'now' or $t = 0$, let us study the external objects out there. If we can see a faraway star, say, 5 million light years away, it takes light from that star 5 million years to reach us. Now we see the sun, the light from the sun takes 8 min to reach us. We look at the moon; light takes 3 seconds to reach us. We look at the plane flying in the sky, at 30,000 feet; light takes about 300 milliseconds to reach us. As the distance of the object being viewed is reduced, the time taken for light to reach us is much smaller. I now look at the tree outside the window; the time taken for light to reach me is 10 microseconds (10^{-6}). I am looking at the computer screen 1 foot away while typing this article, light takes about 1 nanosecond (10^{-9}) to reach me. You even watch your thoughts, they too take some time to form; they are not instantaneous. As the distance reduces the time taken for the light to reach us, reduces. If you extrapolate this backward, the only logical location for $t = 0$ is within you. It cannot be anywhere else.

If you or anyone else look around at the objects in the universe and uses the same reasoning as above, each one will reach the same conclusion: that $t = 0$ is within us. This will apply to every living being in the universe.

t = 0 for Objects?

The 'now' moment for living being is within us. Where is the 'now' moment for all the objects. If you look closely, you would agree that whatever we see out there is all dated or past stuff. The far way star is 1 million years younger, the sun is 8 min younger, the moon is 3 sec younger, the plane in the sky is 300 milliseconds younger, the tree outside my window is 10 microseconds younger, and the computer in front of me is 1 nanosecond younger. The question is, does there exist a 'now' version of any memory objects? Intuitively you would think there should be a 'now' object somewhere. But where is this 'now' object?

Science adds to the confusion, when it talks about memory objects, it makes it seem as if they are talking about 'now' objects. When a planet is discovered 5 million light years away, it is referred to as if it is a 'now' object, but, it is a memory object. They are talking about an object which is 5 million years younger, no one knows where that planet is 'right now'. Does it even exist, has it already been destroyed by meteor? No one can be certain. One certainty is that the 'now' object cannot be in the same location where the 'memory' object is 5 million years back.

So where is the universe where everything is 'now' and where there are no memory objects? This is just not possible in the space time framework as we know it. To be in the 'now' universe, every object in this universe must be at $t=0$. If it is not $t=0$, then it is not a 'now' object, it is a memory object. We know the $t = 0$ is within us, but where is the $t = 0$ for the 'now' object. Logically it must be at the same place.

We know that the sun we see is an 8 minutes younger and it is a memory object. Let us play around with this. Now for whatever reason, the sun is only 3 minutes younger; it would mean the sun has moved closer to the Observer (and much hotter). It will take light less time to reach us. In the same way, if the sun is only 30 seconds younger, it would mean the sun is extremely close to us, but it's still a memory object. If you keep extrapolating this and finally if t becomes 0 for the sun, it would only mean that the sun is within us. We have seen earlier $t=0$ is within us. For the sun to be a 'now' object, it also must be within us. The physical sun is not within us, but a potential sun is within us.

This reasoning and logic will be applicable to every memory object in the universe. The $t=0$ for all the memory objects in this physical universe is present within us. It would seem the whole now universe both living and nonliving objects are present within us.

'Now' Universe – Resides within Awareness at $t = 0$

From the above discussion, it would seem all the 'now' objects or 'now universe is within us. This shows that there is something within us which is beyond time and it is beyond space. Everything in this universe is part of space and is affected by time, but this one location within us, space and time has no effect. What is this thing or place? Vedanta teaches us that this is the home of Awareness or Atma or Brahman or SatChitAnanada. Awareness is the underlying reality of the universe and its home is beyond time and space. This is the t=0 location. As we have discussed in other articles, this Awareness must have the following ingredients

- Subject, Observer with the Power of the Knower
- Intelligence or the Power of Knowing
- Object or the Power of the Known

Awareness = Subject + Object + Intelligence

Power of Awareness = Power of Knower + Power of Knowing + Power of Known

If anyone of them is missing, Awareness will not be there. Awareness is the underlying reality of this universe, it can observe everything, know everything and create all the objects in the universe.

The 'now' universe along with all its potential objects are resident within this Awareness.

2. What is the 'Now' Universe Made Off?

We now understand that the power of Awareness is within us and the 'now' object and the 'now' universe is resident within this Awareness. To understand what the 'now' universe is made off, let us study the perspective of quantum physics and Vedanta.

1. Quantum Physics – Matter is both Wave and Particle
2. Vedanta – Subtle Body and Gross Body

1. Quantum Physics - Matter is both Wave and Particle

The birth of quantum physics took place in the beginning of the 20th century, when they found light showed both wave like and particle like properties. This idea was cemented further, when de Broglie, a French doctoral student made a bold assertion that not only light, but all matter must have both 'wave' and 'particle' properties. Here matter means matter, including, you, me, planets, cars, in fact any living or nonliving object in this universe. In 1927, the de Broglie hypothesis was proven experimentally - thus, all matter is both a wave and a particle. In 1929,

de Broglie was awarded the Nobel Prize for his theory. He was the only one to ever receive a Nobel Prize based on his doctoral thesis.

How can we comprehend that everything that exists is both a particle and a wave? Is this possible? The tree outside my window looks like a particle, so the question is when is the tree a 'wave'. Is it ever a 'wave'? It must be a 'wave' otherwise the de Broglie theory would be wrong. Let's try to understand this. If I turn my back to the tree and do not see the tree, is the tree still a 'particle'? Is the tree even there? You really cannot be sure, because you are not seeing the tree. Maybe the tree is now a 'wave'. This type of logic can be applied to all objects in the universe including any living being. It would suggest that anything in your presence would always be a particle, but if something is not in your presence it could mean that it's a 'wave'. Your presence is necessary for anything to be a particle. This is the implication of the de Broglie theory.

This idea was confirmed by the Schrodinger's equation. Schrodinger formulated a complex equation to represent the wave part of the de Broglie theory. Schrodinger also showed that this wave function would collapse in the presence of an observing system and it would become a particle. If there was no observing system, the wave function would continue to exist. Moment it comes in the presence of an observing system, the wave collapses and becomes a particle. The type of particle it becomes would depend upon the wave function it represents. If the wave function represents a tree, it will become a physical tree. This also applies to all living beings. Your wave function will become you in the presence of an observing system. Some of the questions which quantum physics does not answer, and it remains unanswered till date

- Quantum physics requires the waves to be standing waves and not travelling waves. Travelling waves are like the waves in an ocean, but the standing waves must be confined within some type of 'wall' and it bounces within this 'wall'. The question is where to find the 'walls' for the waves 'out there'. The electron wave function operates within an atom. But the atom is also a wave, so where are 'walls' for the atom – you might say the molecule. But the molecule is also a wave function, so where are the 'walls' for the molecule. As you keep moving from micro to macro, you can keep asking the same question for every macro object in this universe. Even the universe has a wave function. So, where is the 'wall' for the wave of the universe?
- What are the waves made of? Nobody has seen a wave, but it must be made of something, it cannot be made of nothing.
- Where do the waves reside? 'Out there' or 'in here'? One thing is clear: it cannot be within the particle object, because the particle objects only shows up when the wave

function collapses in the presence of the observing system. The wave comes first and then the particle, therefore the wave cannot exist within the non-existent particle.

- Quantum physics provides very little understanding of the observing system, which is a pre-requisite to collapse a wave function. What are the properties of the observing system? Can a man-made object collapse a wave?

Quantum physics has no answer to these questions. So, what is the solution? Luckily, if we understand Vedanta properly, most of these questions can be answered. In the coming section we will try to explain some of the key teachings of Vedanta that will help answer these questions.

Vedanta – Seed, Subtle and Gross Bodies

Vedanta teaches us that creation is a 3-step process:

1. Creation of the Seed Body
2. Creation of the Subtle Body
3. Creation of the Gross/Physical Body

The seed body creates the subtle body. The subtle body creates the gross body. This process of creation is not only true for each one of us, but it is also true for the cosmic body. The cosmic body is the total of all the individual bodies or objects in the universe. The cosmic body is also a combination of the 3 bodies mentioned above. Let us discuss each one of them in little more detail:

1. Seed Body:

The seed body is very similar to a seed from which a tree, with branches, leaves and fruits, comes out. If you think closely, a tree seed already has the potential form of the tree built into it. You could say that the tree is in an un-manifest condition inside the seed. The seed body is also called a causal body, because it is the cause for the tree to grow from the seed. Only a tree will grow out a tree seed, nothing else. In the same way every object in this universe have their own seed body. For us humans too, the individual seed body will become an individual human being with all its genetic character traits, or tendencies (called vasanas). This universe also has a seed body and the universe will blossom from this seed.

Under the right conditions, this causal body or the seed body germinates and grows into the subtle body and the gross body to play out the blueprint that is contained within. The seed body is the driving force and is the cause for the creation of the subtle body and the gross body.

2. Subtle Body

When you water the seed in the soil, the shoots of the tree break out from the seed. In the same way, everything in this universe blooms out from the seed body. The first step in the blooming out process is the creation of the mind which is part of the subtle body. The subtle body in a human being is that part of us which is not physical. Our perceptions, thoughts, emotions and feelings etc. are part of the mind. Vedanta teaches us that these perceptions, thoughts etc. in the mind take the form of waves or 'vrittis'. These waves are made up of "mind stuff". The waves in the mind are like the waves or ripples we see in a swimming pool. They are standing waves bouncing within the mind.

Every living and nonliving object has a wave form. I have a wave form, you have a wave form and every living and nonliving being in the universe has a wave form. These wave forms operate within the confines of the mind, either the individual or the cosmic mind. The wave representing the 'now' universe operates within the cosmic mind while a relevant subset of this wave form operates within the individual mind. You are looking at a tree, only this subset will be available in your mind. Micro things like an atom or macro things like a galaxy will have a wave version. All the different waves representing different objects superimpose on each other to form complex wave patterns representing complex structures, objects and scenes we observe.

3. Gross Body

According to Vedanta, these subtle objects in the mind are projected out as the physical universe by the power of Awareness. This way the subtle objects become gross objects. It first creates the space time framework and then places all gross objects within this framework. This is the physical universe we see around us. As we have mentioned earlier this physical universe is only made up of memory objects.

Not that we have a better understanding of quantum physics and Vedanta, let us try and correlate the two to get a firm understanding of the 'now' universe.

Co-relation Quantum Physics and Vedanta

After understanding the seed, subtle and gross aspects of the universe, I think we are ready to correlate Vedanta with quantum physics. The wave aspect in quantum physics is the same as the vritti or mental waves in Vedanta. The particle aspect is same as the gross body in Vedanta.

The Schrodinger wave function and Vedanta are also talking the same language. In Schrodinger wave equation, the observed system which is a waveform collapses in the presence of the observing system to become a particle. If you now look at what is happening in our minds. We know the mind is made of 'vrittis' or waveforms representing complex objects. Atma or Awareness is the observing system looking at what is happening in the individual mind. In the presence of Awareness, the observed waveform in the mind collapses to project the world out there as a 'particle'. So, Vedanta and quantum physics are completely co-related.

With this understanding, let us see if we can answer the questions which were raised earlier.

- For the Schrodinger's wave equation to operate, the waveforms must be standing waves and not traveling waves. Standing waves need 'walls' to operate. As we saw earlier, we won't find the 'walls' for the standing waves 'out there'. The only place you will find 'walls' for the standing waves is the individual mind or the cosmic mind. The waveforms bounce within this wall. Therefore, the only place for Schrodinger's wave equation to operate is the waves in the individual mind and the cosmic mind. This means that Schrodinger's wave equation represents the 'vrittis' or waveforms operating within the mind.
- What are the waves made of? According to Vedanta, the wave or 'vrittis' in the mind are made up of mind stuff. In a later section, we will discuss this further, but to give a short answer here - mind stuff means Ignorance. This means that the waveforms in the mind are made up of Ignorance.
- Quantum physics thinks manmade objects have the power or mechanism to collapse the waveform to becomes particles. This is just not possible. If you think about it, the manmade object must have a 'wave' component operating within the mind. It cannot collapse anything, because it must be collapsed before it collapses anything else. So, who collapses the waveform of the manmade object? The only correct answer to that is Atma or Awareness. Awareness is the observer of all the activity within the individual and cosmic mind and Atma or Awareness is the only source with the power to collapse a wave function.

Many of the shortcoming in quantum physics are resolved if you apply the teaching of Vedanta to the wave and particle duality. The conclusion from this discussion is that the 'now' universe, which is resident in our mind is made up of mental waves.

3. How Does the 'Now' Universe Function?

We know very little about the 'now' universe. Most of the focus and investigation has been on the physical universe. It is not possible to learn about the 'now' universe which is resident in the mind by investigating the physical universe out there. The physical universe is made up of memory objects and you will find no 'now' objects in the physical universe.

Some of the things we know about the 'now' universe.

- We know the 'now' universe is made up of 'vrittis' or mental waves and they reside within the mind.
- We know that the Schrodinger's wave equation applies to these mental waves. Each living and non-living object has their own wave function. When wave superimposes on each other, you can get complex waveforms representing what we see out there in the physical world. String theory talks about 13 different dimensions. Maybe the mental waves in the mind also has 13 different dimensions to represent all the possible wave functions in the universe.
- We know the 'now' universe resides within the mind. Awareness is the source of the mind. Therefore the 'now' universe is resident within this Awareness. Without Awareness, you will not be able to see, hear, smell, taste or touch anything. Awareness has that power. The 'now' universe lives within this Awareness, Therefore the 'now' universe is always conscious, sentient and alive.
- We know there is a cosmic mind and an individual mind. The cosmic mind is the total of all the individual minds. The 'now' universe operates in the cosmic mind, a small part of the 'now' universe operates in the individual mind. What part, it would depend on what we are currently observing. I live in New Jersey and I am looking at the trees in the backyard. People living in India will be see a different part of the 'now' universe.
- We know when this wave function comes in the presence of the Observer within you, this wave function collapses and creates the physical universe out there. From this it seems that the physical universe is projected out from the mind. Everyone will project something different as they are watching something different.

There is still a lot to learn and understand about the 'now' universe. Understanding Time will enhance this knowledge about the 'now' universe

Understanding Time

In classical physics, space and time were considered completely different and independent of each other. Newton considered space to have 3 dimensions and a separate single dimension for time. Einstein with his Theory of Relativity showed that space and time were interlinked and

he changed the terminology from 'space and time' to 'space time' and this space time had 4 dimensions. But, it's hard to understand 4 dimensions, it's not intuitive. We can only visualize 3 dimensions, so where is the 4th dimension? Neither Einstein nor science has given a proper explanation for this.

1. If we look at the teaching of Vedanta, this confusion between space and time becomes quite clear. Einstein showed Time and Space are one and the same thing, the only difference is that Time is subtle while Space is gross. Space and Time are referring to the same thing. Space is the gross version of Time. Space is gross; we can see Space out there. We have seen that anything subtle is an activity that happens in the mind. As we saw, mental activities are made up of waves or 'vrittis'. Since Time is nonphysical and subtle, it must be a mental activity and it must be made up of waves or 'vrittis'.

2. If Time is subtle, it must be a 'vritti' or wave which is present in an individual mind and in the cosmic mind. This wave has the power to create Time. It is quite difficult for us to understand or visualize the composition of this waveform, but one thing is certain that Time is subtle and therefore it is a waveform and is present in everyone's mind and it creates time.

Let us study the Time 'vritti' or mental wave in little more detail and see how it interacts with other waves in the mind.

- Time and Objects
- Time and Spacetime Fabric
- Time and Energy

Time and Objects: Time is a wave in the mind and all the objects in the world are also a wave in the mind. Do they interact with each other? Of course, the time wave interacts with every object wave in the mind. When any seed body germinates and becomes a wave in the subtle body, the time wave superimposes itself on the object wave. It is the $t = 0$ or the birthday for the object wave. Right from the $t = 0$ moment, the time wave is the driving force for the object wave to modify itself, grow itself to play out the blueprint of its life. If there was no time wave, all the object waves would remain static and remain in the same state, with no growth. The time wave is the underlying force which moves this universe and object waves forward

- The $t = 0$ for each object would be different. The $t = 0$ for the universe was 13.7 billion years ago. The $t = 0$ for the sun was about 4 billion years ago. In the same way every object in the universe will have its own $t = 0$ when it came into existence. From $t = 0$ to 'now', each of the object has gone through a history of events. From one moment to another, each of the objects modifies itself. As the time moves forward, the object

waveform keeps changing, playing out the blueprint of its life cycle. It is like a small tree shoot coming out from the seed and then over time it becomes a fully-grown tree with branches and leaves and finally it decays and dies. The tree waveform plays out its blueprint as time moves forward. This life cycle applies to everything in the universe. It must be noted that the time wave does not change the object wave, it only moves it forward. The change in the object wave are due many reasons including the fulfillment of its pending karmas and interaction with other objects waves.

- If you are looking at the sun, the sun will also be present in your mind as a 'vritti' or waveform. Let us try and visualize how the 'vritti' of the sun combines with the Time 'vritti'. It will generate a superimposed waveform in the mind. The time factor is now added to the sun. It is like a mathematical waveform with time as a variable. If you think about it, this superimposed waveform will now provide a history of the sun. Since Time has been superimposed on the sun waveform, the new waveform will have the 'potential' to show the sun in all its stages of growth from its birth 4.6 billion years to right now. All the different Suns in the historical time line is present in the Vritti in its 'potential' form. For example, you are on earth and you want to see the sun. Your mind will have a superimposed vritti of (Sun and Time). When this waveform collapses in the presence of the Observer, you will see an 8-min younger Sun. From all the possibilities, this 8-min younger Sun is present in the potential form in the combined Sun + Time 'Vritti'. Let us suppose a person in a distant planet which is 1 million light years away and is looking at our sun through a telescope. He will also have the same combined waveform of the Sun and Time in his mind as we do on the earth. However, when his waveform collapses, he will see a 1 million-year-younger Sun. These two examples show that the combined Sun + Time waveform has the potential of all the historical Suns. Depending upon the Observers location in the universe, Suns of different ages will be observed.

This logic is not only applicable to the Sun but to every object in the universe, both living and nonliving. The Time vritti will combine with the waveform for every object in the universe, and this combination will contain the 'potential' history in time for all the objects in the universe. The Time vritti or waveform is extremely powerful, and it can create objects of different ages.

Time and Spacetime Fabric: We have just seen the interaction between time and the objects. Let us now study the interaction of time with the spacetime fabric. Einstein in his theory of relativity mentions that there is a presence of the spacetime fabric, which is the underlying framework of the universe. I like to compare the spacetime fabric with the TV monitor screen on which the image is displayed.

We are so used to seeing space and thinking about space in terms of distances. How far the tree is in the backyard or how high the plane is flying in the sky. This method does not give a full understanding of the spacetime fabric. A more innovative way to look at the spacetime fabric is in terms of time. The tree in the backyard is microseconds away, the plane flying in the sky is milliseconds away, the moon is 3 seconds away, the sun is 8 minutes away, the distant star is 1 million light years away. The edge of the universe is 13.7 billion light years away. We are talking about the time light takes to reach us from different objects. In the same way all the objects in the universe can be placed appropriately on the spacetime framework.

We know all the objects out there in the physical world are memory objects. The sun is an 8-minute younger sun, the tree in the backyard is microsecond younger etc. These objects in the physical world are placed appropriately on the spacetime fabric. The placement would depend upon the time for light to travel from the object to us.

Let us explore this further. Suppose we are looking outside and we see a tree in the backyard, plane flying at 30,000 feet, the moon, the sun and distant star 1 million light years away. There is nothing else in our view, just these 5 objects. Let us try and understand what is happening in our mind. There is a tree 'vritti' in our mind, this waveform mixes up with the time wave form. This superimposed wave form has the potential to show up all the tree forms from its birth at $t=0$ to now. Since the tree is only microsecond away from us, from all the possibilities, the tree wave will show only the microsecond younger tree (as compared to the 'now' tree). In the same way, the vritti of the plane is also available in the mind. Here again all the possibilities of the plane are available from its birth at $t = 0$ to now. Since the plane is flying at 30,000 feet, the vritti or the waveform in the mind will show only the millisecond younger plane (as compared to the 'now' version of the plane). From all the possibilities, the moon wave in the mind will show the 3 second younger moon. The sun wave in the mind will show an 8min younger sun and the planet will show a 1 million younger planet. Ultimately there is a single wave form in the mind. Therefore, the millisecond younger wave of the tree + microsecond younger wave of the plane + the wave of the 3 second younger moon + wave of the 8-min younger sun + wave of the 1 million younger planet, all these waves will form one complex wave in the mind. This complex waveform will then collapse in the presence of the observer and the tree is placed microsecond away, the plane will be placed at millisecond away, the moon 3 seconds away, the sun 8 minutes and the planet is placed 1 million light years away on the spacetime fabric.

The scene we described above was a simple one with only few objects, but what we really see outside is thousands of objects at different distances from us. It is a complex array of memory objects and each placed object is aged differently. The memory objects which are as close to a 'now' objects will be placed near to us, while objects which are placed further away, will be the younger version of that object. When you view the scene out there in terms of distances, it

does not seem that complicated. However, if you look at the same scene in terms of time, the scene becomes very complex. Different age version of the different objects is placed on this spacetime fabric. The right age version for the object will be chosen depending how far the object is from us. It maybe a good idea to start looking at scenes out there in terms of time, if you do that, you will be able to appreciate the real structure of the universe.

- We have discussed earlier that the $t = 0$ for the 'now' universe is within us. This $t = 0$ is also the $t = 0$ for the spacetime fabric. It is important to note that the spacetime fabric starts from within us. This indicates that the physical world is projected by the individual mind, based on the object waves in the mind. This is so contrary to what we have been taught by science about the perception process.
- Every projection of the complex object wave is like a single frame. We know from science taught in school that you need at least 24 frames per seconds for the image to look continuous. What we see outside is continuous movement of objects. From this we can estimate that the mind projects at least 24 frames per second. The image processing which takes place every frame is repeated at least 24 times every second. Can you imagine the processing power of the mind?

Just to avoid confusion, it is important to understand that the $t = 0$ for the object and $t = 0$ for the start of the spacetime fabric are different. The $t = 0$ for the object starts at its birthday, while the $t = 0$ for the spacetime fabric is within us.

Time and Energy: Just like Time is subtle, and Space is gross, the same logic can be used for Energy and Mass. The famous Einstein equation $E = mc^2$ is self-explanatory. Energy is subtle, and Mass is gross, they are both interlinked. Mass is the gross version of Energy. Just like Time is a vritti, in the same way Energy also is a vritti and is present as a waveform in an individual mind and in the cosmic mind. This Energy vritti when it superimposes with any object vritti, will provide the required potential energy to the object and when this object becomes gross, it will have the required mass representing that energy.

If you examine it closely, you'll find that the Schrodinger Wave Equation applicable to any object has two variables - time and energy. We have just seen that any Vritti or waveform of any object in the mind also has two variables –time and energy. Once again proving that the quantum physics waves are nothing but the mental waves in the mind.

Einstein's theory of relativity interlinks time and energy. This theory states that in the presence of energy, time curves or bends and time slows down. When you place any mass in a stretched-out rubber sheet, the rubber sheet curves around the mass of the object. In the same way if

you place a mass on the spacetime fabric, the spacetime fabric bends and curves around the mass. This bending of the spacetime fabric slows down time.

We saw earlier that the time wave superimposes on the object wave, in the same way the energy wave also superimposes on this Time-Object Wave resulting in a combined Energy Time Object Wave. This combined wave then collapses in the presence of the observer, the resulting mass is placed on the spacetime fabric. The fabric will curve at this location and the time will slow down around this curve. The slowdown will depend on the mass of the object. Higher the mass, higher the curvature, slower the time.

4. What is the Source of the 'Now' Universe

We know the 'now' universe is made up of 'vrittis or mental waveforms representing different objects in the universe. These waveforms reside within the individual mind or the cosmic mind. The question is what is the source waveform of the 'now' universe? These waveforms must come from some source – it cannot originate from nothing. If you are a student of Vedanta, the simple answer to this question – it is Ignorance. Ignorance is the source of the mental waves. Does ignorance have this power to create the mental waves and create the 'now' universe. Yes, ignorance is that powerful. Ignorance is the cause of the mind and ignorance is the cause of the waveforms in the mind.

Ignorance and Mind:

Our underlying reality is Self-Awareness. It means Awareness is aware of Awareness. We have seen that Awareness is a mix of subject, object and intelligence. In Self Awareness, Awareness is both the Subject and Object. Since object and the subject are the same, Self-Awareness is therefore homogenous, self-sufficient and non-dual. It does not need anything, it is full and complete. If this concept is not clear here, it is recommended to read the 'Understanding the Mind' series at our website. This Self-Awareness is our inner core, our inner reality.

If Self-Awareness is our reality, why don't we know it, why don't we feel it? The simple answer is that we are Ignorant, we are not aware of our true nature. This ignorance has a tremendous impact on our true nature of Self-Awareness. With ignorance, we no longer know we are both the subject and object, we do not know that both subject and object are one and non-dual. If we do not know that we are both the Subject and Object, it means that the subject and object are no longer a single entity, but they are a separate and independent entities.

This separation of Subject and Object as independent entities is the basis of the Mind. There is a duality of having a separate subject and object in the Mind. The Mind is created due to the

ignorance of our true nature of being Self-Aware. In Self-Awareness there is unity, but Ignorance breaks up this unity and creates the mind with the following 4 separate components or functions

- Sakshi - The Home of the Subject
- Buddhi - The Home of the Intelligence
- Manas - The Home of the Object
- Ahamkara - The Home of the Ego (self)

In the mind, the subject, object, ego and intelligence are separated. There is the inherent tendency of the mind to combine these 4 parts so that there is Awareness.

Ignorance and Waveforms:

Once ignorance has created the mind, the 4 components of the mind are mutually attracted to each other, so that they reach the status of Self-Awareness. Unfortunately, there are no objects in the Manas. From where to acquire the objects? The mind goes hunting to find a body. When it is successful, the mind acquires a body (this is the reason we are born). This body which springs out from the seed body to become a wave/subtle body. This subtle body then interacts with external objects with the 5 subtle senses – eyes, ears, nose, tongue and touch.

So, from where do these subtle or wave objects come from? There are only two things in the mind – Awareness and Ignorance. It cannot be Awareness, because Awareness only reveals the objects in the mind. It is the underlying reality of the object, it is not the object. This can be confusing, let us try and explain this with the famous Vedanta example of clay/pot

If you have a clay pot, the question can be asked, what part is the pot and what part is the clay? The answer to this question is as follows

Pot = Form

Clay = Content

The content is only clay, the pot is a form on the clay. If you ask the question, where does the clay end and where does the pot begin? Can you separate the pot from the clay? You cannot separate the pot, because everything is made up of clay. The pot is just a form which has been added to the clay. In the same way everything we see, hear or touch in our mind is only made up of Awareness and different Forms are superimposed upon this Awareness. Once again it is not possible to separate the form from awareness. Since the mind only contains Awareness and Ignorance, the form of any object is made up of Ignorance. So, for any object in the mind, the

content is Awareness and the form is made up of Ignorance. This applies to the form of all objects including the form of the 'now' universe. Even our body is part of the 'now' universe and is made up of ignorance. The form of the 'now' universe is rooted in ignorance. Ignorance is the source of the 'now' universe.

Ignorance is ignorance, it means it is unknown. If any objects are known, it cannot be rooted in ignorance, it is not unknown, we have the knowledge of that object. The objects we see in the world are not unknown, they are known, we see them, we hear them, we smell them and taste them. So how does this transformation take place, from ignorance of objects to knowledge of objects.

The objects from the external world are picked up by the 5 senses and are presented to the manas. These objects are covered with ignorance. Manas has no clue what these objects are. These objects covered with ignorance are then presented to the Buddhi, which is the home of the intelligence. Intelligence is intelligence, it knows, and it has the power of knowing (a power/shakti of Awareness). This power can unmask the ignorance and reveal the object. Buddhi uses its energy to unmask the ignorance of the object. This energy is superimposed on the object and the ignorance of the object is unmasked. This superimposed object is therefore made up by intelligence or Buddhi. This is the mental wave or 'vritti' we have discussed earlier. This mental wave is therefore sentient, and knowledge is the source. The construction of every mental wave in the mind, from a simple atom to the galaxies is rooted in Buddhi or knowledge.

This complex intelligent waveform is then presented to Sakshi or the Subject or the Observer. When this is done, magic happens in the mind. We know Awareness is a mix of subject, object and intelligence. You have the object from the manas, you have the unmasking done by Intelligence and this waveform is now in the presence of the Subject. When subject, object and intelligence mix, the only outcome is Awareness. This is the physical world we see out there. Quantum physics will call this the collapsing of the waveform to create the particle.

Interaction Ahamkara/Ego and Waveforms

Before the Buddhi presents the object waveform to the Observer, there is an additional step - The ego interacts with this waveform. Ego is the feeling of 'I' within us and it is the doer of all action. Since it is the doer, the ego is programmed to interact with the object waveform and undertake some action. This may seem odd, we are so used to the physical body interacting with the physical world. It may seem that way, but the actual reality is that all the actions are first completed in the subtle or wave world. This interaction is then projected out as the physical world.

Ego is a product of ignorance and it is also having a waveform. We must accept that there is a wave version of us in the mind which is interacting with the wave version of the universe on a

continuous basis. We are driving, we are working, we are watching, there is wave version of all these day to day action taking place in the mind. Unfortunately, it is not easy to visualize how this can happen, but it is happening. Neuroscience has conducted so many experiments which confirms that there is activity in the brain before the actual action takes place in the physical world. It is confirmed that the time difference between the activity in the brain and the physical action is 0.5 seconds. So, action takes place in the subtle world first then in the physical world. This clearly shows that there is a fully functioning subtle universe inside us.

Unity of the Mind.

The universe waveform is never static, it is continuously changing. Each object in the universe has their own life cycle. Each object waveform is changing moment to moment, this only means the universe waveform is also changing moment to moment. Also, each one of us is interacting with this universe and making changes to the universe waveform. This means the universe waveform is being continuously modified.

In this physical universe every living being is separate from each other. We see that everywhere. We know each living being has a part of the universe waveform in the mind. We just seen that the universe wave form is continuously changing. How is it possible that the latest version of the universe waveform is available in the mind, knowing they are physically separate from each other. The only possibility is that there must be some type of connection between all the minds. Otherwise, how can we explain that the latest version of the changing waveform is present in every mind at the same time.

The only way to understand this is to think differently. Don't think about space or distance, but think in terms of time. This is the key to understand this concept. Mind is the home of Awareness and Ignorance and is the starting point of the spacetime fabric, but still outside the spacetime fabric. Mind is always at $t = 0$. Your mind, my mind and every mind are always at $t = 0$. We know $t = 0$ is 'now'. So, for the 'now' moment, there is unity among everyone's mind. It does not matter where your body is in space, but for the 'now' moment there is unity of all the minds. All the minds are at one spot, which is outside the spacetime fabric. The mind never moves, it is always at $t = 0$, it is always outside the spacetime fabric. The body moves, and it operates in the space time fabric. The unity of all the minds is always maintained. We have seen that the $t = 0$ or the 'now' moment is within us. This means at this 'now' moment, your mind, the entire cosmic mind which includes all the minds is present within us. Can you guess the number of individual minds in this universe? I think it is countless. Imagine the population of humans, animals, creatures, plants etc. To this you can add life in other planets. All these countless minds are within us at $t = 0$ or the 'now' moment. Wow – what a feeling!

Once the unity of all the minds is properly understood, then the interaction of the mind with the universe waveform becomes clear. The subset of the universe waveform is present in the individual mind of every living being at $t=0$. The subset would depend upon what each mind is watching. Once the waveform in each mind comes in the presence of the 'Observer', the waveform collapses in every mind and then each mind projects their own spacetime fabric and the physical world out there. Space is created with the collapsing of the waveform. Your body, my body and all the objects being viewed are placed at different locations in space. It must be understood, all the minds are still at $t = 0$, it has not moved. It always seems we are carrying the mind everywhere the body moves in space. This is incorrect, the mind is outside the spacetime fabric, only the body is part of the spacetime fabric. All the minds of every living being are at the same spot outside the spacetime fabric.

It is interesting to note that the Observer or Sakshi is common for all the minds. There is no separate Observer for each mind, but One Observer for all the minds. All the minds are at same spot at $t = 0$, the single Observer collapses all the waves simultaneously in each mind and watches all the minds simultaneously. What can one say - this is sheer magic, this is the power of Awareness! Vedanta calls this Maya shakti.

Conclusion

It seems very clear, there is a fully functioning subtle world made up of complex waveforms. This is the only real world. This is the 'now' universe. This subtle world operates outside the spacetime fabric and this 'now' universe is within us. So close, but seems really very far (another power of ignorance). The physical world is not that real, it is only made up of memory objects. It always seems that we are interacting with the physical world, but this is untrue. The real interaction takes in the 'now' universe. The interaction of the subtle waveforms is projected out by the power of Awareness as the physical world. There is no denying there is very limited knowledge about the 'now' universe. More efforts must be made to really understand the functioning of this subtle universe.