#29
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Y: First we have… Biljana has been doing her home work; and she is going to tell us what she has got.

B: Actually, I have written down what I announced. And this is the first sutra, the way you/we used to write it now, it… resembling Gita and the old ancient scriptures. And then I am trying to design the symbol for Lila as we discussed to have matrices, the symbol of matrices. Then the rows with Sanskrit symbol for LI and the columns with for Sanskrit symbol of La. And then I was think about how many rows and columns should the symbol contain. Or Li's and La's and perhaps it should be five because the first structure which appears for a closed circuit and first crossover has five edges. So maybe, and then as we discussed we should have here a sequence of diagonal elements which are showing the out-going arrows if we observe from the side of Li or incoming if we observe from the side of La. And this was what I called riding a wave while we are introducing matrices and trying to develop algorithms. The first condition will be for a circuit to have on the appropriate rows and columns. Once, for instance, if this is the L row and this is the L column, we should have ones both on the column and on the row in order to have a circuit closed. This was first condition. The second condition was somehow to catch this diagonal sequence because it is actually denoting a sequence of the elements of the circuit. And then I proposed at least one diagonal element of the main diagonal of the matrix, to be one… to be with gray shadow. And this will announce… This will denote self enlighten state of this element, either this one of this one, and this is George Bush. An isolated although strictly speaking he is not isolated, because since in this column we have another element. Then he catches their… He rides the wave so to say. For instance, if we start… while developing the algorithm, if we start from this row in which this George Bush in then we find that he is in the second column. If we go to the appropriate row, for instance, if this is A, this is B, then if I go to B, I found one here; and he catches the wave, so to say.

Y: Now this is the type of thing you might explain to some of your students.

B: Yes.

Y: All right, one other point. This means pause (or delay) and this means end. And end in the sense of it's a repeat, pause, pause.

B: Yes.

Y: That is how all great sutras end. Is… what they originally was is that the last two of three words would be repeated. And that, that is what that means, indicating the end. Ok.

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B: And then I didn't want really to spoil the splendor, the flavor of the text we were observing. And actually those realizations I had, in a way have been, at least some of them entered into the text, so I just leave this as it is, in order to understand all that exists, a large specific finite number.

Y: (acknowledges)

B: Then I have once again written in order to have them…

Y: So this is the subject of?

B: Of consciousness which is yet to come.

Y: Which is what you… As you drew it before?

B: Yes, yes. Here I have listed all the subjects or all the areas for which I believe should be entered somehow into a future article. Not this one, maybe, but some other one in which should have somehow different melody, so to say, and all these ideas that I have mentioned regarding theory of chaos, regarding doubling of the periods, regarding recursions, regarding this fantasy rule, the three dimensionality of the pictures, Monte Carlo methods with cumulative…

Y: The F formula.

B: Yes, and I have con…

Y: The connectivity.

B: Yes, and I have listed all them all here. I have listed them here, here, here, here, and here, in order to have them all.

Y: If you can just name them off; you don't have to go through each one.

B: Ah ha, yes, just to name them. First to introduce complimentary matrices, complimentary matrices, not just the positive matrices which represents the positive state of affairs in a specific arrangement, but also its complement…

Y: (acknowledges)

B: To see the states of no knowledge, to see them explicitly. So this was one, then 3-D projection, all these pictures we have with sub-states, to be shown in three dimensions which will, maybe, for some readers it could clarify and let them have deeper insights. Then I have introduced the fantasy rule which is actually how, in a way, we are building this paradigm. We have a basic assumption which is an axiom which we take this and an axiom. Now speaking in terms of logic, it is course. It is so deepened (metaphysical). But in terms of logic we start… Actually we are applying fantasy rule here out of propositional calculus done by Hofstadter and (Queen.8:10). We introduce here an assumption; then we have a legitimate transition from one statement to another until we reach a conclusion. And then we leave the fantasy and what is 100% true is this rule. The affects, then weigh (8:27).

Y: If not. You mean true to what?

B: True regarding this. It is true, however you look at it. It is simply true because all the transitions have been done legally (legitimately).

Y: So it is true within this system but not necessarily for all systems.

B: Yes.

Y: In other words, this might follow from itself, but does it follow physically? Does it match the ultimate reality? It must. It is the ultimate reality.

B: Yes, our notion of ultimate reality is into X. It is embedded into X, no matter who tiny X looks here. But…

Y: But if you go through this and it's not true, then you go back to this.

B: Yes.

Y: That's what I did over and over again because I didn't…

B: Yes.

Y: And then I kept adjusting this until, it is now very seldom that I have to change anything in this.

B: Yes, yes.

Y: Ok. Go on then.

B: So this is, for instance, first idea, second idea, the complimentary of matrices, third idea, now fourth is doubling of periods, and it's implication to equations of probability. I have represented one scenario or one way to reach edge of chaos or to obtain a chaotic attractor, ah, out of three that I mentioned. And one of these was the fixed point iteration. Where could this apply? …Both to the edge of chaos which we have in our diagrams and also when we are applying Baker's formula or (this is formula of equation distribution) which we meet so frequently in our search. Once we introduce this factor (e) on F over N, so the formula is F of [I], [I] square of [I] factorial N to [I] minus one, (e) to F over one. Once we introduce recursion into the system, what we do is actually over and over again putting the output as an input again. And this is what we do in this picture here. So this is subject to the process of iterations in doubling of the periods.
10:46
Y: (acknowledges)

B: So in one certain moment of time, the slope of the curve here which is representing actually the function we are observing and the slope of the line which represents *pi* equals X and which comes handy to do these iterations. These two slopes when they begin, when they are both under the degree of 45 degrees and

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mathematically this means F Prime of X module of it, if it is greater than one. The tangent if it's slope is greater that 45 degrees, then we have doubling of the period. And doubling of the period is leading some time to chaotic behavior.

Y: Well, that's the mathematics behind it.

B: Yes.

Y: Have you listed all the applications of this? It applies to time and space and to energy. And it applies to particles; it applies to strength of energy coupling. All the places it is used, it is used in the overall recursion of the time/space patterns.

B: Yes. Whenever we have recursion, yes, it might occur. I have applied it to this formula for now because it is clearly stated.

Y: Yes.

B: And we have it explicitly. And for the other, we should still have to develop an explicit function.

Y: I don't think very much. Sometimes you can neglect this term; but it's still there. In other words, it's taking place. I think the recursion always takes place. If nothing else just…you add one arrow; you add another arrow.

B: Yes.

Y: That's a form of recursion.

B: Yes. This is this.

Y: Yes.

B: I'll come to this.

Y: Ok.

B: This is another idea…

Y: I was just trying to discuss how much is included here. This is a big deal.

B: It is a big deal exactly. There are thick books written just for doubling of the periods and fix point iteration.

Y: Yes, and it's a big deal in the Lila Paradigm, does all kinds of things.

B: Yes, exactly because we have recursions.

Y: Ok. Let's go on.

B: Then the fifth point is *Gödel's Law of Incompleteness*. It should be somehow…

Y: Now summarize that again for us.

B: The *Gödel's Law of Incompleteness*.

Y: I know the law but how does it connect to the Lila Paradigm?

B: It is connected because we could show *Gödel's Law of Incompleteness* together with *Theory of Chaos* and *Heisenberg Principle of Uncertainty* is showing limitations of contemporary science. For instance, *Gödel's Law of Incompleteness* is taken to be the limit of how far we could go with building a robot, for instance, or formal logical system.

Y: So?

B: It show that the system couldn't be both consistent and complete. There are limitations.

Y: So?

B: And we could say, where contemporary science stops, now we proceed. We are making the steps further. We are showing what is the next step.

Y: Which is self-reference. But we haven't included that in the introduction which might be a good idea to mention because we have…various people have said and shown that you have to go beyond current scientific paradigm.

B: Yes.

Y: So, I think that is very important there.

B: For instance, we might quote Lagrange (Laplace), Pierre-Simon, Lagrange (de Laplace), who said in *Mecanique Celeste* as I have mentioned it one point. He says, "Give me…" It was written after *Principia Naturalis* of Newton has been published and everyone in science was so much excited about it. And they thought science could do anything. And so Lagrange (Laplace) exclaimed, he said, "Give me a precise mathematical model and give me precise enough instruments and I'll show to you the behaviors of the universe a thousand years after (in the future) and what was the behavior of the universe before ten thousand years (as well as what has been for the last 10,000 years)." But now we see that this is not the case. Theory of chaos showed that slight changes in the initial behavior of conditions could cause dramatic changes into the flow of the system. So if we change just one parameter, as for instance in this XM plus one equals Alpha XM one minus XM which is very simple formula. And at the same time this is an oscillation (17:41) we might use at certain point.

Y: I have a question about the butterfly effect. 17:45.

B: Yes.

Y: And maybe it just goes off, but in principle couldn't you then still predict those no matter how wild they were as long as they were still just cause and effect? You show no discontinuity in the butterfly effect.

B: Yes. Actually all is in the initial conditions. But actually in contemporary science, you couldn't adjust the initial conditions always.

Y: But why not?

B: It is always leads to chaotic behavior. It might…at least it has a potential for chaos.

Y: Well, isn't it…wouldn't it? But you haven't shown me why that is so. You have just said it. You haven't shown me where…If one had enough detail information and precisely enough, they would be able to do it all. There must be some kind of a disconnect so that there's…something is interjected from outside the system.

B: Yes, yes. Actually, I have said when I have explaining this doubling of the periods, but maybe not so explicitly. In doubling of the periods, the parameter which you are changing is this Lambda which will lead us Lambda C which is edge of chaos. And we are moving this Lambda parameter which is maximum of the parabola inverse. We are moving it further and further and further up. So first we have one attractor; then we have two attractors; then we have four then eight and so on until we reach edge of chaos. So it was shown, this is the way changing this parameter, this parameter, for instance.

Y: But why couldn't we just keep doing that. If we had…

B: Yes, this is why I mentioned to you. This is not fully random behavior when we have… It is ergodic. And I stressed this at one point if you remember.

Y: Yes.

It is ergodic. This means it is almost random. But almost doesn't mean anything in science. It is as if you say this is almost eternally. This is almost eternal. But eternity has.

Y: Hasn't happened.

B: Because infinity…

Y: But in principle, it could happen according to the assumptions of science, that all you have to do is say, "Right, we'll wait another trillion, trillion, trillion, trillion, trillion, to the trillionth googolplex years." And then it will happen by chance. So what I am saying is although I am in favor…I know that the things…I know what it is outside the system that is interposed in science. They don't have that. They just say,   'Well, the quantum fluctuations just happen," and say, "That takes care of it." That makes it so, that you can't know and is responsible for the butterfly effect. But that's not mathematics. That's just throwing in a factor that is convenient and don't talk about it. I am not sure you know what I am talking about.

B: I know, I know.

Y: It's like the argument is incomplete.

B: Yes, I know…

Y: And I think that Gödel's theorem answers it. The way I understood it, that it does prove it. It does prove that you can't know. That is what Penrose's argument.

B: You can know or you can't. What did you say? You can know?

Y: You can't work it out by a systemic way that follows some mathematical rules. You can't know.

B: Ah, can't.

Y: You can not know. And I say, "That, that shows there must be something from outside the system that is affecting it." And I say, "That what that is, is a non-physical individual."

B: Yes. Actually they have been thinking on this question in Theory of Chaos. I lost where it was. (Looks in papers) They know that. This external influence for…you are talking about is influencing the initial conditions,

Y: (acknowledges)

B: For instance, about this large periods of cold, these large cold periods on earth.

Don: Ice age.

Y: Ice age.

B: Ice age, for ice age, it was thought that it happened because somehow out of some unpredicted fluctuation, for instance, the earth having moved away from it's orbit around the sun. So this is external condition, as you say. But then later on it was determined that no the possible. The potential for chaos is embedded into the system itself as it is here. Here when we observe this equation, N plus one equals Alpha XN 1 minus XN, it is so determined that more determined couldn't be at all. If you look at it, as you say, I could predict now 1000 years after this what will happen because I'll denote N to be zero. I have X zero, then X one, and then X two, then X three, then X million, million, million, million.

Y: Then it just goes on. Yes.

B: But at certain point we reach this ergodic behavior. So the potential for chaos is not outside infection but it is embedded into the system. But you are right to the point that, yes, if we knew the exact initial point then the whole curve is determined.

Y: Yes.

B: But we never know. It is not possible, for instance, in weather prediction. There are so many components to be…

Y: Well, that's a practical consideration, I said in principle.

B: But this is mixed, you know, just as in Lila, you have…you go to basic assumptions and then you go to physics and then come back. This is what they are doing also. They put an equation. This equation is not almighty, it couldn't be. They have come. but now it is deepened very much in time of Henri Poincare who was living with Marie Curie and Pierre Curie.

Y: Yes, yes. I know.

B: He died in 1912, for instance. And the last letter he wrote to the publisher of a very famous mathematical journal at that time. I knew his name. He predicted this. He wrote that in non-linearity, there are many things to be yet researched. He has noted this potential (of) chaotic behavior. If we knew the exact position.. but how could we know the exact position? We could not, just the same as we could not know the number of non-physical individuals. We… this is the same with the other fields in science. Yes, if I knew everything that might influence the system, then I could predict. But I don't know some as in weather prediction. In Chaos we have always…

26:06

Y: The reason that I am asking discussing with you at such length is because, and I asked Penrose this very question in person, I asked him the same discussion. And he says, "Well the aspect experiment proves the incompleteness formula or theorem of Gödel, and so therefore, this proves that there's something that's not included in our system too. That it's incomplete, that we can't get the perfect computer to stop.

B: Yes.

Y: But can stop it all you have to do is put your hand in it and stop it. So that's an influence from outside. An arbitrary… What I am trying to say is that... Doesn't Gödel's Theorem prove that there must be something that is not included in our scientific description, or our mathematical description that has an effect, that there is an origination that is arbitrary but it is not random, but is arbitrary? And that's an individual. So I am trying to say that this theorem suggests that, that must be the case. And I want to know if you think that it's true. Am I right or am I wrong.

You're, I consider you to be, one of world's leading experts on his theory (his theorem). And I respect your opinion. And I want to know if you think that his incompleteness theorem suggests that there must be something other than the system that we are talking about. It's like the robot can't know.

B: Yes.

Y: Unless there is something non-physical about a robot which there is; he is made out of all non-physical individuals. This is a robot too (one's body).

B: Yes.

Y: Now, that's a question. Do you know the answer or do you have to think about it?

B: We are building it together, isn't it so, the answer?

Y: So we can't say that in the introduction then?

B: We can say. We can quote Lagrange (Laplace) and say, *Theory of Chaos* is proving Lagrange to be wrong. *Heisenberg Principle of Uncertainty… Theory of Chaos* is proving him to be wrong in regard to the equations and mathematical models. Second *Heisenberg Principle of Uncertainty* and Neil's Bohr *Principle of Complimentarity* proves him to be wrong in regard to instruments; and Gödel's Theorem, this is in addition to his exclamation, to his statement…*Gödel's Theorem* proves him to be wrong regarding logic. So we are proposing here a solution, so to say.

Y: Uh ha. I see how you're approaching.

B: We are proposing where we… no one could say, "Now science stops here," because *Theory of Chaos* proves this; and *Gödel's Theorem* proves that, and so on. And now this is the end of science. It is not so. We are proposing a new ingredient into science; and we are showing the way out of this circuit, so to say.

Don: Nicely said.

Y: You answered my question.

B: Hum?

Y: You answered my question.

B: Ok.

Y: Now.

B: Shall I proceed.

Y: We can carry on.

B: So this was *Gödel's Theory of Incompleteness*. Finally *Fuzzy Logic* although it is fuzzy at certain point, we might introduce it into picture. Once we pass this basic level of states of direct knowledge, when we come to the…

Y: Consciousness.

B: Consciousness and so on, and physics even more (the physical level even more). Then we are in the realm of fuzzy logic, somehow. And we might introduce it in the picture. One of these doctorial candidates is expert in this. So it was fifth, now sixth is.

Y: Sixth?

B: Sixth point. I have mentioned this, at a certain point we should introduce… for a very simple arrangement, for instance when introducing time. We could as well introduce… This is a direct graph; this is the states of no knowledge,

Y: (acknowledges) the complimentary.

B: The complimentary graph. This is the graph (and always with this Li and La in Sanskrit) for this very simple notion of time. And we might think of how to… actually I have thought how to recognize these elementary time units in matrices. And then this is G compliment or not G graph. This is the states of no knowledge for this very simple notion of time which is all the same, now time is here, zero and zero. Then we could introduce also the… and we could think for a name about this, the fully enlightened universe, so to say. We could name it. For instance, we could use the symbol EF, F for fully, E for enlightenment. Somehow, for instance, EF is matrices which is just of ones which is what is… For instance, to obtain the states of no knowledge, we subtract our positive matrix of the basic arrangement. We subtract it from this fully enlightened universe matrix which is matrix just of ones. One, one, one, one, one, one when I subtract this from this, I obtain the states of no knowledge.

Y: (acknowledges)

B: So this is sixth. Seventh, Descartes *Cogito ergo sum*, he argument we were discussing. Descartes introduces *Cogito ergo sum*. *Cogito ergo sum* means simple Sum, Existence.

Y: (acknowledges)

B: If I sum (if I exist) then… I wanted to discuss about this in Sanskrit with you. For instance, samadhi, meaning suma dhi, I am God. Sama dhi in a way. But this is another question. *Cogito ergo sum* meaning existence. If I exist, the one who created me, God, exists. If God exists, then the universe he created also exists. God will not deceive me. So this is the way, although paradoxical, in which Descartes introduced physicality into science.

Y: Actually the word samadhi, sama is the root of the word same.

B: Same. Ah, ha.

Y: Or equal.

B: Ah haaa.

Y: And dhi is the quality of.

B: Like equinity some or not?

Y: So it is equanimity.

B: Equanimity.

Y: So it's…

B: Equa, because nivikalpa samadhi, nir is no, vikalpa is…

Y: Era or time.

B: Ah ha.

Y: Kalpa means a period of time.

B: Yes, Kalpa. But vikakpa and san kalpa. Sankalpa is like an idea. And nirvikalpa.

Y: Is without time.

B: So nirvikalpa without doubt. Isn't it so? Nirvikalpa means.

Y: Both are true. It's Sanskrit and it includes both ways of looking at it. And tries to transcend both of them and get you to understand it at a transcendent level.

B: Yes.

Bret: Do…

Y: But nir means without, and san means with.

B: Sa is also in Slavic languages.

Bret: Did you just say that without doubt and without time are the same in that phrase?

B: Kalpa is time, and vi kalpa is doubt. Nirvikalpa without doubt.

Y: Yes.

B: And kalpa is time. For instance, kiakalpa, kia is body.

Y: Kia means body. So the time for the body.

B: Time for the body, time for purifying the body. Kiakalpa.

Y: Ok.

B: This was another point regarding Descartes; and the other point was which we have been discussing yesterday. He is actually being a monotheist. He is not a dualist. He is a monotheist, in a sense, because his followers, his disciples, have said when we need origination from outside first in matter and then origination from

outside to have changes in spirit. Then why should not look at this origination to be the only thing that exists. In other words, God is the only one.

Y: Makes sense to me.

Don: Sounds good to me.

B: So maybe this should be also somehow introduced. Now, I have this other things I have discussed.

Y: You have no mathematics to go with this part, with the part on Descartes?

B: No.

Y: That's Ok. I was just asking. I thought I might have missed something.

B: No, no.

Y: This doesn't count. This is something else. All right, this is point number seven.

B: This is point number eight. Yes. First of all, I may be I stressed out so far that we should add in this basic level of dealing with matrices. First check if there is a circuit. And then while… another point actually while observing the equation for Poisson Distribution when we have this additional member added, (e) to M over N. First point is recursion and possibility of doubling of the periods. But the second point is this actually is a factor of normalization which moves the discrete elements together. Then ride the wave in the matrices that I have mentioned this. Ah then, this morning I try to talk to you about this cosmological constant; and here over the night I have drawn a picture. This is concerning a conference I participated in 1997 in Prague, in Czechoslovakia. And it was a very nice conference, a very significant, so to say. Vaclav Havel, the president of Czechoslovakia was supposed to open it. Unfortunately he was ill. He has surgery that moment; but still we all walked the red carpet. And so it was organized by European Union. It was very nice. Mandelbrot was participant. Ralph Abraham, the four famous scientists from Santa Cruz University and so on. And so at this conference, pity it is not on net anymore, it was. All the articles have been there. At a certain point, the Prigogine's assistant have presented this formula of the universe oscillating, of the vibrating universe. And this is this formula. I don't have it the whole, but we have a universe which is like a ball, for instance, which was spreading out from the big bang point. And then we have an elementary part of the surface of this ball of blowing (expanding) universe. This is Delta S and it was presented to be… This is this Hubble Lemaitre formula, Hubble after whom this telescope was named.
40:16
Y: Hubble.

B: Yes, Hubble and Lemaitre, a French scientist. So this Lemaitre formula says Delta S is… They have constance, constance here different cosmological constants. I tried to remember whether cosmological constant of Einstein was introduced into this particular formula; but it was discussed in the paper and then this is the point. This is why I brought it up. Here in the denominator we have one minus epsilon. So when

epsilon is bigger than one, we have here a number. This Delta S increases. So these elementary part of the surface of a blowing up (expanding) universe…

Y: (acknowledges)

B: …increases when epsilon is greater than one. When epsilon is more than one, this Delta S shrinks. It decreases. And then we have the universe going to the…

Don: Contracts.

Y: What does Epsilon stand for? Do you know?

B: I should check. It was not.

Y: Is it a gravitational???

B: Gravitation was discussed, I …

Y: Or curvature?

B: Into introduction of this article, gravity was discussed. I have read it several times because I have given a seminar work to one of my students. And in the introduction they are discussing the history, how this equation has been obtained. And first they are mentioning Einstein and his notion before Hubble and before the discovery of expansion of the universe. Gravity out of four forces, maybe at that point there where not even four. Gravity was the only force known which causes the universe to shrink. And it will shrink if there is no anti-force which is doing the opposite. So this is how Einstein introduces his cosmological constant. And at certain point of time he said, "This is the greater (greatest) blunder of my life." He…

Y: And he said, "Away with it". But then later on they brought it back.

B: They brought it back; and they brought it back when they introduced inflation of the universe…

Y: Yes.

B: …which is very much of interest in regard of Lila.

Y: Yes.

B: So maybe we should look at this closer.

Y: I think so.

B: Maybe it is a point, I was thinking because this is strictly connected with inflation.

Y: It's an effect of connectivity.

B: And we shall see whether we… what is ours point of view. They introduce inflation by bringing back cosmological constant into picture. And what is our point of view, shall we say. It should be brought back or not or something like that. Or just mention it at a certain point in the article. I mention this to be a greater article or even a smaller book.

Y: I understand. This why it is so important what I was asking you to come up with an inflation program. I might be able to narrow it down more later on today, put some limitations on it. So, Ok.

B: So this is another point and few more points which actually have been discussed. But now I making a summary. Monte Carlo method: two points regarding Monte Carlo, first for producing arrangement and basic structures as you have so beautifully done it in your big chart, equal probabilities used and then cumulative probability. This is one point and second point regarding Monte Carlo method is for magnitudes when introducing magnitudes and algorithms for them. Accumulative probability ranges should be introduced like this. First we have one, then one plus square of N, then one plus square of (N) plus third square of six (N) square, then plus four square, then plus fifth square of hundred twenty and so on, and so on. And then obtain ranges and find random numbers falling into these ranges. Then third point regarding this is random number generator. There are random number generators to be found to generate random numbers. Why is this important? It will become important when we come to the point. And it might happen after two years maybe, my estimation, optimistic when we shall be asked to give validation of our simulation model. We should validate it. And whenever you validate, some notion of accuracy should be introduced into picture. So for validation of the model, we should know how good our random number generator is. So this is eleventh or twelfth.

Y: I have suggestion that based off of what we have discussed yesterday at the end. There is a scale free network, that's non-random. And it's built by individuals making independent choices. In that article we looked at where you… instead of the Bell Curve Distribution which is random, we have a one that finds the edge of chaos. And that would be another study that could be done someday. But I think it should be done with directed graphs not with non-directed graphs. I think the effect will happen much quicker with fewer numbers. So I'm just suggesting that as another project.

B: Ok.

Y: If somebody gives a billion dollars for the project, well, then you can do that. Well, there's one man who could do it. His name is Tempelton.

B: Tempelton. You will write it in.

Y: I forget his first name. I'll just…

Darshana: John, I think.

Y: Yes, I think it is. And that magazine over there on the top on the top level underneath the acupuncture book, says Zigone Magazine,

Don: Ah. Ok.

Y: He gives all the money for this project. This is *Religion and Science;* and he's a billionaire many times over. He owns *Tempelton Investment Funds.*

B: May I see the name? The exact…

Y: I think you could… just read a little bit and… I think they would publish something by us too. That was lighter weight. But he has an award that he gives every year. $100,000.00 dollars award for the best thing that combines Religion and Science. And he is behind this. He has hired somebody to run this program and a whole staff put out this work. John Tempelton.

B: This is the way to write it?

Y: Yes. And he has billions of dollars. And if he saw the Lila Paradigm was going to bring science and religion together, he would just give every penny he has. I think he is ninety four years old right now. So we have about two years left.

B: Great.

Y: You can just leave that on the table for awhile. I sent them one early paper twelve years ago. And it wasn't very well written; and they didn't publish it. I should have put it more in terms of Christian background instead Hindu religion…

B: Yes, yes.

Y: …because at the root, they are all the same.

B: Yes.

Y: Ok.

B: And finally this was the idea discussed by you.

Y: Then you add this. Yeah, we have.

B: About finding a way to have both a circle, both sine and cosine and discrete, and this way to do it. These are the projections of the moving of the evolutionary to the…

Y: I am wondering if you can develop a mathematics than would do both?

B: Which one?

Y: When we have the sine and cosine mathematics

B: Yes.

Y: And we have discrete mathematics.

B: Yes.

Y: And who was it? Was it Max Born that proved that the matrices effect (approach) by Heisenberg was just another way of saying what it says in Schrodinger's Equation? Actually he said, "It was the other way around because Heisenberg came first." But they didn't show how they are united. And that is what is missing. And I think the Lila Paradigm will show that when we have the digital arrows and the digital individuals. But when we consider the unity nature of an individual, and we have the merging of the digital parts into…It just shows what the length of the continuity is or the amount of time of the time continuum is. That shows where the digitalness is behind the continua. And someone should develop a mathematics that includes all that so we get this out of the mathematics automatically. This is the stuff that makes me run. (My medicine)

Don: Tempelton.

B: Ah, Tempelton. Great!

Don: Their website has all the submission criteria and everything on it.

B: You have the others, how?

Don: I don't I just looked it up.

B: Under Tempelton and Zigone.

Don: Under Zigone. And it is actually under the publisher, I forget there is… The publisher publishes a whole bunch of journals, Zigone being one of them. And that is where you will find submission details.

Y: This medicine affects the meridians, and the energy so just going that far, it affects it. And then I have to go urinate. Drinking it does a little more. So you did.

B: So there is my assignment.

Y: That is your home work. Very good.

Don: Thank you.

Y: Ninety six percent.

B: I have to sleep.

Y: Ok. I give you an option. Do you want to hear more about time and work on that some more? Or space and its basic consciousness and states of knowledge? Or do you work on kind of a work shop on the time/space inflation curve and the recursions of them and work out the exact calculations for each one? Which would you prefer to work on now?

B: Both, but now..

Y: Or we could work on Lie groups.

B: Read about Lie groups. I can bring the book, one of the books which contains Lie groups.

Y: Or we could look at Penrose's book on Lie groups. Have you looked at that?

B: Not very much.

Y: We have…

B: I could bring a book.

Y: Yes, you can bring.

Don: This is the Wikipedia version.

Y: That might be something I could follow. What about you Bret? You interested more on Lie group as it connects to the Lila Paradigm?

Bret: All of them are potentially interesting. I only have one question myself. If you want?

Y: Well, I can't answer it. Maybe she can. I don't know.

Bret: You know what it is.

Y: Well, is it about Lie groups? Is that what you are saying? Oh, one question. What is it?

Bret: I asked yesterday; and I don't believe you answered yet. What's the justification or reasoning behind the suggesting in A → B• →C• that B is in the past rather than C being in the past?

Y: Because time has an arrow.

Bret: Doesn't have any effect. Either one could be an arrow. I don't understand how it is this one rather than that one.

Y: Well, because B is embedded in the overall pattern, in the over all arrangement, not the other way around.

Bret: I don't understand what you mean then. A has no direct connection with C. C is embedded in B's consciousness and direct to B's knowledge. And that's how A gets any notice at all of C. So either way, there is an embedding.

Y: Well, let's call it this way then. I don't know. That way I have a cheap out, just say, "I don't know." I am not getting what you are saying. And you are not getting

what I am saying. So till we overcome that impasse, I don't think giving answers or suggestions either way is going to solve it. We have to solve the impasse first.

This is *Deep Down Things,* I read the book.

B: Shall we read this book or not. Ah, you have this, Ok.

Y: I wondered which one you would want.

B: Ok. Let us look at this one.

Y: I think this is a little shallower, but it is easier to follow.

B: So we have Lie group. In mathematics, a Lie group, pronunciation Lee, sound like Lee. Is a continuous group in the sense that the group elements have the topology of a manifold. And the group operations are continuous function of the elements, for example, for two times two real invertible matrices, A, B, C, D. A, D minus D, C which is the discriminates… this is the value of the determinant lying underneath this matrix…is different from zero.

Y: Now, any time that you see a possible connection to the Lila Paradigm, you point it out.

B: OK. Form a multiplicative group denoted by G of 2 of F which is a classic example of Lie group. Its manifold is four dimensional. Further is striking… restricting to two times two relation matrices gives a sub group denoted by S O two of F apar? which is also a Lie group. Its manifold is one dimensional, a circle with rotation angle as a parameter. In this later example, we can write a group elements as cosine Lambda, minusine?, sine, lambda cosine Lambda. And observe that the universe for the elements given by Lambda... The inverse for the element given by Lambda is that given by minus Lambda while the products of the elements given by lambda and Me is that given by Lambda plus Me. Thus all group?1:03.05 operations are continuous as required.
1:02.21
Y: This is a continuous system obviously.

B: Yes. Theirs is a whole field call *differential geometry* which explains actually, fully Lie groups.

Y: And they apply it to continuous energy fields and space. That's why they use this. Is that they imagine a field three-dimensional of four dimensional or two dimensional. And then they are going to describe at different parts of that field what is going on. And this is used to solve that. I don't see how that could apply to the Lila Paradigm. Until we get to the continuous place which is consciousness of a difference of particles in time or space. So it would be useful at that point but wouldn't be before that on a fundamental level.

B: What I remember from Lie groups is they are used, for instance, in system like this one. You have F1 of X1, X2, X3 and so on XN = 0. So this is an equation, transcendental or (polynomial? 1:05.00) but not linear, including X1, X2, X3, and so

on. You might have cosine here, sine, (e) to the degree or something. Then we have F2 of X1, X2 and so on, so on, XN = 0, and then so on. And then we have N – 1, X1, of X2, and so on, and XN = 0. And we are missing this final equation which will make this system to be system of N equations and N variables. So we have N – 1 equation and N variables. And because of this, the theorem of uniqueness and existence of the solution fails. So this is what makes this not so (workable? 1:06.00) by classical means for solving non-linear systems. And this is actually a manifold. This is a manifold. They are introducing manifold, maybe in slightly different meaning, but this is manifold. And since we have N variables, this is as…we have N dimensional system. But in this N dimensional system, we have just N – 1 equation. We are missing one equation which makes this system to have either infinity number of solutions or none at all. So when we have…so this is actually a manifold. This part of surface which is two dimensional but presented on a torus which is three dimensional is a manifold. And this makes things complex. If we had N equations and N variables, this is solved although even this is not easy to solve. You should introduce Newtarosin method?1:07.21other methods for solving iteration processes. Even I have developed a method in my doctoral thesis. Maybe one day I'll present it to you. So it is not easy to solve. It is not at all easy to solve, but it is solvable. But when you have N – 1 equation and in N dimensional space they… I believe this R they are introducing here is referring to the… Factorial?1:08.00) representing the Euclidian space in which this is defined.

Y: (acknowledges)

B: And so when in N dimensional space we have N – 1 curve, this is a manifold. So we have a surface; but this surface lies on a three-dimensional body. So it is neither body or a surface. It is a manifold. And for this a whole new mathematics is being developed for this cases to be solved. And I show to you parking of a vehicle, parking of a car. The car moves through a trajectory of which is one dimensional; but obstacles are two dimensional or a robot…or a robot's hand moving into a space. So this is Lie groups. This is one point.

Y: But is it useful in the Lila Paradigm? That's a good question. Maybe it is, maybe not.

B: Yes. Here I see two dimensional quarum?1:09.13.

Y: They used it in their particle physics. And I don't remember exactly how they used it. I understood it when I read the book. But I don't remember the book.

B: Explanation. Maybe we might have a look at Feynman diagrams here, like this one. Ah ha, I had in mind to mention that whenever…

Y: These are Feynman diagram.

B: These are the word lines in Feynman diagrams.

Y: Here he is going backwards in time and where the electron neutrino.

B: Muon decay.

Y: Anti-neutrino. And this is the W particle I was telling you about that is generated from around the monopole, the W plus and minus. This is the W minus. That means it is a weak boson, a weak force boson' it carries the weak force which is responsible for radiation, nuclear radiation amongst other things. It is also used in binding together the neutron and so that the neutron is made up of several quarks.

B: Maybe we should go through all these pictures to have a clearer…

Y: Idea of how they use.

B: Yes. And have in mind that when they are presenting word lines, T is on the vertical coordinate and X on this. And we are doing other way around in magnitudes.

Y: Well, that can be done either way. That's just a conceptual problem. This is the muon.

B: The muon decay.

Y: The mu, that's the symbol for mu, and it's a muon. And this is neutrino. And this is a muon. And it changes into a neutrino, a muon neutrino, when it radiates or this would be an arrow in our system. Radiates it's W minus boson which degenerates or decays into two, an electron and electron anti-neutrino. I had hoped by reading this that I would understand enough about particle physics that it would help us with the Lila Paradigm. But I couldn't connect the Li groups to it. I couldn't see how it would apply. So that is something to be looked into. It might apply. He's applied it in this book, but they have problems that they can't solve. They can't find the Higgs boson. It is just a theoretical idea now. They can't tell whether there are 'more anti-particles so that we have symmetry, complete symmetrical particle system. They can't even account for these arrows going backwards in time. They just say, "It does."
 And they have no way of explaining it except that Feynman diagram works out that way. Well, that sounds like the Lila Paradigm somehow. It is non-rigorous, time going backwards. It just solves their problem. So they figure there's something to it. Yes, there is; but it's not what they are saying it is, that it is time going backwards. Now it is very popular to suggest that time is an illusion. Four or five different quite famous physicists and philosophers have come out with that idea. But for a different reason because they realize that if you can understand that time is an illusion, it would solve such problems as this. So it would just be the illusion of it that it going backwards because there's an illusion of it, time going in one direction from the past to the present. Well, the way to solve it is to describe it in a way that is not in time. And just describe the, for example, in the Lila Paradigm, the knowledge states that are involved. And just say that, that situation is what we have been calling time.

I was thinking last night that the…there should be a statement in the introduction that states that the Lila Paradigm is an epistemological approach because we are dealing with knowledge as a part of the Ultimate Reality. That is the epistemological and it deals with not-conscious knowledge, direct knowledge, and indirect knowledge in such a manner that it accounts for consciousness and all the time and space and all that. That taking that approach, I think would be very powerful because they will either immediately throw it away or they will say maybe somebody has finally

cracked the problem of epistemology of knowledge because knowledge…You can derive consciousness from knowledge, but you can't derive consciousness from anything else. You must have that informational element to it. So no matter how they do Lie groups and particles that don't involve knowledge or information, they can't solve it. Now Wheeler knew this. He knew that information; and Hawking knows it too; and so does Penrose that information going into a black hole seems to be lost. And they have big arguments about information being lost, of can it come back out again or by when the black hole contracted by Hawking radiation, that is, there a release of information they get. And there are big arguments about it. And they… And it is all theoretical; so they can't be sure of anything. But they know that the problem lies in information and what's behind information. They want to imagine that there is some kind of information floating around the universe instead of someone being in a state of information. And yet they themselves are that which are in states of information. One advantage, by the way, of using states is that we can have a state of no knowledge where if you just have no knowledge without a state, then it has no effect. That's my thinking on it anyway. Not only that, if you read philosophy on epistemology which deals all with description on how knowledge works and all about it, they talk about the knowledge states. They don't talk about knowledge. They talk about the states of knowledge. So I can cite precedents, goes clear back to Plato. This afternoon, if I am able, I would like to present to you the overall picture of how recursion is necessary for the Lila Paradigm in considerable detail giving the history of its development and the scientific background that goes with it. And then you can begin to understand some of the problems of grasping it. We have a radical theory here; and I will just state one statement about it.

As we have time, going from the beginning of time to about 5 times 10^{-32} of a second, that's all, that's it. But we have an illusionary projection of that in the realm of consciousness that makes it go 10^{-5} of a second. And then we have another recursion which is due to the third dimension. The third crossover that makes it go to 10^{17} seconds or about 3.4×10^{17} seconds which is 12.7billion years. When you read this in the original paper on *Radical Theory,* you didn't think much of it. But I want to get you so you can appreciate it so well that it will be shortcut in your sadhana. Now whether you will have neuralgia as a consequence, I don't know.

Don: I'll take it.

Y: But I suspect not. It might turn up the crank on whatever your version of impurities are, for example, the eye problem. There is something in the nervous system that is going on. When that is re… when it de-connects and then reconnects and de-connects and reconnects and trying to finally find the right combination, you'll have plenty of Divine sound to work on.

B: Divine shouting.

Y: But there is a deep connection, of course, between understanding the Lila Paradigm and doing your sadhana. That's another book, different book. I have put it down many times and gave it up. And Kripalu on his shoulder and Lakulisha on his says, "Hey, you can't let that go. You have got to do this." Well, if we can get the mathematics properly tied together with the basic ideas of the Lila Paradigm, and you did a nice presentation of that this morning, where I can see what you are driving

at, really for the first time. I see it as a picture. And why you pick certain things out of what we have discussed that relate to the Lila Paradigm. And then I think that would be quite a useful piece of work. And such a basic paper should be given, tying different mathematics at the different places. Doesn't have to be worked out at every possible detail with every possible proof, just mathematically give small examples. And then theoretical physicists will grab it; and they will run with it. That's what I predict. It may take several years for them to do that. But if two or three papers start to show up on the internet and they see the possibilities, they will run with it. This guy runs with it when he is not making a living.

So we'll do a workshop between 3:00 and 4:00 this afternoon with these recursionary graphs. And I'll need your help to put it together in detail. And I'll take all my folders and bits and pieces and we'll put it together into one picture so it is neat. And when you go back and have that already done and not just Yogeshwar said he had a folder full of this stuff and here it is. And you guys can work on that as a nice summary. Two or three times over the last few days I have tried to do it and on my own and the pains comes on. God is saying, "Involve some others in this." And this is one way for me to be forced into doing it. My Guru had been doing sadhana for twenty years, 8 to 10 hours a day doing this natural mediation sadhana. And he didn't teach more than three or four people how to do it and then ordered them away. You go to the Himalayas;, you go back to America;, you go to Canada. And they left him, including me. So he wasn't involved. And then one day he fell and put his hand out to catch himself, and sprained his fingers and wrist. And he couldn't write. So he says, "Ok, I'll go to America and travel around and meet you all at your different Ashrams." And he got the others really involved. He said, "God made him let go." And this is making me let go. And I just can't do it anymore by myself. So I am asking for your help. So now I need to take a break, I can't go on. There is a half hour left for what it's worth.

B: Thank you.

Y: Do whatever you will.

Don: Yogeshwar, you said the work shop was from 3:00 to 4:00. Are we starting our session at 2:00 as normal?

Y: Yes.

Don: Ok. It is just the workshop from 3:00 to 4:00.

Y: But the workshop, we'll do other stuff until 3:00.

Don: Fine. I just wanted to be clear.

And then we'll open it up; and we'll all work together on it. And I'll be able to answer questions and then give data. But so far as putting it together…the impetus, the force, the vitality, is going to have to come from you all. Ok.

B: Thank you so much.

Don: I just wanted to be clear. Thank you.