#39
Formal talk-05112006 Morning day17
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Y: Ok we're starting. There are two things I would like to take up this morning. First of all, is a further reworking of the Lila Paradigm, the basis of the Lila Paradigm.

> All that exist are a large specific number of non-physical individuals each of whom originates itself into a separate non-physical state with regards to each.

And then the second line.

> Each non-physical individual with regard to each non-physical individual including itself originates itself either into a state of direct knowledge of that non-individual or into a state of no direct knowledge of that non-physical individual.

And then the next line, which is… This next section or the next sloka gives the results of those assumptions.

> These originations are not made against the background of time. A non-physical individual's states of direct knowledge of other non-physical individuals include knowledge of those non-physical individual's states of direct knowledge and no direct knowledge of other non-physical individuals and so on.

And then a final line of the second sloka.

> Each of the states of knowledge of non-physical individuals, had by a single non-physical individual, is non-physically compared by that non-physical individual to itself. These nonphysical comparisons reduce all the non-physical individual states of knowledge to a single state of consciousness of an apparent physical world.

So still working on it. Darshana and I have been working on it. And she has also been working on the translation which is getting in better shape now into Sanskrit. I just thought I would pass that along. And then…this is separate from the error I was mentioning before. I've worked out a little bit more with the fundamental unit of space, the LQ. And this is something that has to really be studied. But what it basically amounts to is this…is that we change rule two slightly on page 16 of the *Lila Paradigm of Ultimate Reality,* page 16. It says, "There is another rule, rule 2." I'm going to put a slight, but important modification.

> Any two or more states of a single non-physical individual is in.

(Notice I left out the word of consciousness).

B: Of consciousness.

Y: Of consciousness. So it should be.

> Rule two, any two or more states a single non-physical individual is in are subsumed or combined to form a single state of consciousness-knowledge that includes those states.

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So we are including not only states of consciousness but states of knowledge that an individual is in; and that those can combine/go together in any combination. And by using that rule which is due to the unity of a single individual, it's not only the unity, (does?) it apply conscious states but any combination of them…conscious states and or states of knowledge. And by doing so, I think we have got the answer to what space is, one-dimensional space. I won't go into it in a procedure right now; but it'd probably be best if you just read what I have written here because it is not in a final form by reading it. Then tomorrow we should all go over it with your wrong feed back. I'll just read one part here.

> The overall content of A's state of consciousness-knowledge is proto-fermions C• and B• as the termini of a one-dimensional bounded space continuum one unit of distance apart from each other (one LQ) in what is the present for A and is conscious of B• one unit of time (one TQ) in the past of that present time.

I think we have got all the factors that we need. So I will leave that for you to copy or whatever. It is subject to change so don't make a lot of copies, just enough to… So that changes the rule. And I am satisfied with it now. Now for the error, how did you guys miss it? An error that is so obvious. You have no excuse. Like I have an excuse, it is…There is no single formula that I know of or have ever heard of, especially just one like Kn cube, or take Kn squared, or Kn times LQ, could possibly give the whole curve of the expansion over 60 orders of magnitude of space. We might be able to figure out, by other means, what certain points on the overall graph is and then draw the lines in between of the expansion of space of what the size of the universe is. That is to say, for the number of arrows as they are increasing tile, we get up to say N arrows, 10^{23} arrows. Space has increased very slightly like this; but then by adding just 16 arrows, it goes up 59 orders of magnitude, 10^{59} expansion, just by adding 16 arrows. So it's a very non-linear situation if there ever was one. So we can just add arrows and expect that to happen unless we have an equation that includes that kind of expansion. And we don't have any such equation. This is without the recursions or the…Their squaring and the cubing, it does that. So I…remember how we would do a calculation yesterday; and it would come out wrong. And it would come out wrong again. And it would come out wrong again. That why! There is no one equation that we could, just put in different numbers of arrows which is Kn…different….that is Kn or Kn squared, or Kn cubed, and expect that we are going to get this curve unless I give you something else to put in its place. I think the thing to do would be to…we are talking about adding arrows to big N number of nodes. Finally we get something like this; and we get time. But still we have no space. We keep going adding arrows. Time is clicking along by when we get another one of these. And then finally, we get one of these. And from that we get one LQ of space. So we have time going along here, till we get to F3. And we get 1 TQ of space. Right there because space is this direction; and time is this direction. This goes up from no space to one unit of space quanta. And we keep adding arrows. And adding arrows and time keeps marching along. And we get another one of these. This is our baby universes, right? And we get another one. So now we have two; and then four and so on. So we have an increase in space that goes along like this. This is time. And this is increasing the amount of space. But then we get…this joins into another baby universe. And then these might join together and so we start to get a little increase in the curve. We could say that these baby universes are starting to form faster and faster. And they are crossing over and cross connecting and merging together, are increasing more of those so that space units are increasing. But you need a different formula. You need a formula that describes how many F3's you are going to have. And you have to also have some kind of equation that's going to describe how many of those are joining together, these baby universes of various sizes. They aren't going to be all F3. They are going to be F4's baby universes and F5's and all these other ones that are not any… not exactly the form of…The variations on them is what I am talking about. How all that's going to be figured out, I don't know. I am just saying what the situation is. So now we…this part of it is starting to curve up a little bit. Now you could say that that is the beginning of inflation because these are starting to come together. But it is not very much inflation. You come along here, and you get to F27 number of arrow times. And we just, right after that, we get our first circuit. And then we get some more of them, and more of them, and more of them and more of them and more of them, and more circuits. And then the circuits start to join together. And then they start to get crossed over. Ah! That's when it will square the amount of space. Or you will, no, it will be multiplied by n instead of just worried about the…So you'll have to have an equation for that point. But that will give you just that point. And we're starting to turn up now. Then finally by adding one more arrow, one-sixteenth of all the connectivity happens because this big, fairly big one over here that is all joined together joins with another one that is fairly big. And all kind of connectivity happens. And all kind of units of space are in the consciousness of the individuals that are connected to it. And you get one-sixteenth and another sixteenth for the next arrows and so on until you have *pi* over 2n at the point of inflection. Now, I don't know any equation that will give you this except the Li groups as they are use in the Grand Unification Theory's which use the field equations, Su1, Su2, U1, and that sort of thing. And then the curve will start to bend over. And this is a log curve. So this is a…if it was on a linear coordinate this would move about this much, then go up here ten miles. And then, and then go off for another fifteen or twenty miles to the…So the log squishes this part down. So this is much more dramatic. As I said, it is 59 orders of magnitudes greater here than it is at the beginning of the inflation.

But the thing is to figure out the size at each point along the way. There is no one equation. The way I did it was to make approximations in this part of the curve using the F formulas and figuring about how many of each kind of F 6's and F5's and F4's and F3's and F7's there would be. And how…And make approximations of how many units of space would be generated by them to get this portion of the curve. And then I got circuits, and seeing about how many circuits would be formed and how many of them would be crossed together. Well, that's just an approximation. But when we get to the monopole core, we have a calculation from the Grand Unification Theory's of what the size of the core of that monopole is. And that should be our first circuit. And that would be according to the Lila Paradigm. That would be the size of the universe at that time of that particular universe, just that circuit, that universe would be the size of it. It doesn't add in all the other space that has been formed by all these non-circuit arrangements. But it would be approximately correct. And so…and I did that also for the values for the X level, the X shell, and the W level, W Z's. And then…I know what the standard big bang slope is because that formula is simply one ratio. It's just X over Y. It's probably to an exponent because this is log log. And it's a straight line in log log. So knowing this value here and this value here, all I had to do was draw a line on log log paper. And that gave me the size of the universe. Then working backwards from that value looking for a formula using K and little n and *pi* over 2 that would fix or come close to that curve. So I was working both ends of formulas from the standard big bang formulas using the Grand Unification formulas and using the Lila Paradigm probabilities; and then filling in between those based upon the shape of the Grand Unification formulas curve, put it all together. That's how it was done. Now Ideally, I ask Michael Baker about this,"Could he write a formula for that?" He put down his pen. He said, "I would have to go back to the university and study cosmology and astrophysics, particle physics, get my math up on all the field theories," because he was trained as an engineer. So he knew the mathematics, but he didn't know the specialized areas. It would take, I think, four or five different experts in each field to hammer this out together. And we were trying to do it yesterday by just one formula that had K and n in it and *pi* over 2. So maybe it's a mistake to try to do this, I don't know. Doing it the way I did it, it fits the inflation theory. I was just rereading yesterday in spite of my eyes, Guth's book on this, on the magnetic Monopole's part. And I am satisfied that my putting it together is approximately correct that conceptually it is right and it does explain inflation. He uses inflation to explain the number of astrophysical observations. And I think correctly so or approximately correctly so. But what I am doing is explaining why these field theories are approximately correct. The thing that they leave…They deal only with arrows. They don't deal with particles as absolutes. They just take them… What they do is they take the arrows and they turn them into quantised bosons. So that's the story as they used to say on, what kind of street was it? Sesame Street. That's the story. You never had any children to watch TV. So what we can do. We can get a point here and a point here, three points here which is what I've done, one, two, three here. And then use the slope of the big bang. And that tells us that we're not going to go higher than that to see what we need. But that's all; I don't have anything else. I don't have…and then work backwards and…what did you? What is called? Try to develop equations to fit the curve, but…that fit a single point on the curve.

B: Ah, yes, interpolation.

Y: And then we interpolate between but our equations that we get give us a single point on the curve, it's not an equation for the whole curve. And for…then we develop another equation by another means of getting another point somewhere else on the curve at another time. And that's what needs to be done. So I can't do anything else than give what I've done to get the points. And as I've said, I think it is approximately correct.

Don: Yogeshwar, on the time scale that you have drawn here, the problem I have conceptually is that the space that we are computing as what's in each mini universe, or in the perception of an individual…

Y: I missed a couple of words in the middle of that sentence.

Don: Ok, on the space we are calculating, how the space would appear in the consciousness of an individual that is in each mini universe…

Y: Yes, at a time.

Don: Yes, but at the time scale there, as I understand it, it is the sum total of choices, not the amount of time generated in the consciousness of an individual because at F27 although there is a large number of choices, the maximum amount of time generated in the consciousness of anyone individual would be 26 time quanta. And that's at our first circuit of seven. So I mean it seems that we are conflating…

Y: Yes, that is correct.

Don: But the time…

Y: It is 26.

Don: Yes, but the time…when you say 26, so what is this scale?

Y: It's a log scale of time.

Don: Well, yes, but at 27 which is where the first circuit forms, there is only 26 units of time in the consciousness of one individual. It's a different perspective on time than there is on space.

Y: No, no, not at all.

Don: F27 says they'll be 8…

Y: No, there's…

B: They're many other baby…

Y: We have given each arrow a time value.

Don: I understand.

Y: And there is…so those arrows all exist in the graph. And there is 10^{26} of them.

Don: Yes, that's a global…that's not…

Y: No, it's not 10^{26}. What it is, it's n. Well, yes, it is about 10^{26}. It's just a little over n arrows. And those total number of arrows add up to a lot of time.

Don: I agree with that. But I am just saying that the perspective of time…

Y: Tell anyone that's in or connected to that circuit is going to get them all.

Don: But up until F27, we don't have any circuits.

Y: Well, no, that's why it says on here, it says, "As if time."

Don: Ok that has to be…Why are we saying as if time and not as if space? We are not summing space? You see, we are summing time; but we are not summing space up to that point.

Y: Oh, yes, we are. We summed…What I was doing was summing all these spaces that are developed here. I was saying, it's as if they were all connected and summed; and that gives you these values.

Don: Ok.

Y: But…otherwise, you have to have many dots for each unit of time because each individual…some of them won't be in any space at all. Some will be in two or three…

Don: Yes.

Y: So you would have to have as many lines here as there are different baby universes. And then these converge; these lines will all be converging.

Don: (acknowledges)

Y: And we are going to show that.

Don: No, I'm saying that if we are just summing, then there is no explosion when the connectivity reaches just…There is no explosion in space when the connectivity is (?).
31:57
Y: Oh, yes there is because there is many sub-circuits, a sub-circuit that are...

Don: But we have already summed those.

Y: Well, it's a faulty representation of what takes place.

Don: Well, I just…

Y: The assumptions behind it are valid; but the illustration of it isn't.

Don: It won't give us this kind of jump unless we have another explanation for it.

Y: No, it won't.

Don: See this is related to connectivity here. And connectivity does a deep jump at that point. As the number of choices increase linearly, the connectivity undergoes this kind of transition that is approximate.

Y: But the unit…Yeah, that's approximation; but what happens to space is another question.

Don: Yes.

Y: And what I said, you would have to have a different line for each individual that is conscious.

Don: But if we look at our ideal individual, at this point for a referent individual, his perception of time and space jumps as the connectivity avalanche occurs.

Y: Yes, it does.

Don: Ok.

Y: What's wrong with that?

Don: No, nothing, I was just saying it that…

Y: And it becomes more and more common simultaneously, so to speak.

Don: Yes.

Y: That they are all experiencing the same thing.

Don: (acknowledges)

Y: More and more and more of them. And less there is some hold-outs here.

Don: Right so, I mean both time and space have this kind of curve in relation to extant number of choices.

Y: I can't see how time…

Don: We're talk…It's in a referent individual.

Y: The time happens. And we are doing that by projecting out here another curve because time is only increased by recursion. So this is for one crossover. This is for the second crossover.

Don: (acknowledges)

Y: And then we have the third crossover.

Don: Yes, yeah, I totally agree. But if this is just extant number of choices, time and space increase with connectivity at the time we…at the point where we would expect the crossover…

Y: I don't agree with your statement, you have just made. Are you saying that time and space increase exponentially? I say the space increases exponentially, but not the time.

Don: Well, if we have…at this point, we have at most a sequence of 27, F 27. We have a sequence of 27 in the consciousness of one individual; that's 26 time units.

Y: Yes, but this is log-log. And so the time is increasing more rapidly. But that's…each unit on the graph represents more time, much more rapidly.

Don: In the consciousness of an individual or in some absolute sense?

Y: Well, to the degree they're experiencing common time. So if you wanted to, we could just start the graph when the first circuit occurs and just leave that part out.

Don: Well, because then we have these…Then we can easily account for these jumps.

Y: Yes, and we can account for the commonality also…

Don: Yes.

Y: …by all the different circuits coming together by about this point.

Don: Yes, and that gives us this avalanche here.

Y: Yes, yes.

Don: Here. It is just from here back.

Y: That's right. From here back, it's just fragments non-common; and it's…I've drawn it as if.

Don: It just has to be very, very clear because you keep saying time; but time is in the consciousness of the individual.

Y: Well, all the illusion is; so is space.

Don: Yeah. But as if…this is as if there was a sequence of choices, you know; and that we (can?) justify.
37:16
Y: A sequence of choices?

Don: Yes, that there was this choice, and then this choice, and this choice, then this choice and imaginary time scale, if we will.

Y: Yes.

Don: I have even labeled it that way on some of the graph. That…it's says start of time. Then it says fragmented. This is no time. This is fragmented time. This is common time from here on. Start of one-dimensional bounded one-dimensional time. Start of inflation, so in this section here is all these bits and pieces. When I showed that to some people they say, "Fragmented time? I don't know what you are talking about." To do that I have to go back and start with the assumption of Lila and work it step by step.

Don: But when we're doing time calculations in the consciousness of an individual, it only makes sense up to this point where we have a common time.

Y: It depends on what you mean by sense.

Don: Ok.

Y: Until it's common time, it's not common time. And so you would have to describe each individual. But there is no way to know that without addressing the individual, each individual separately.

Don: Well, that's our expectation number. F27 is 26 units of time; F5 is four units of time.

Y: Well, it's just an expectation.

Don: Yeah, but that's…

Y: For an average individual. But it's not like that actually.

Don: I agree.

Y: Ok, then we agree.

Don: Thank you.

B: Yes. The picture is very complex taking into account that theory of fields is included and Li groups and so on. But roughly I am just thinking aloud, roughly the…if we somehow, and it is possible, integrate this curve, you know, to find an integral this means to find the surface underneath. This is to summarize…

Y: But you don't know what the curve is.

B: Yes, I know that we don't know. But it could be done approximately will this somehow give us the age of the universe, the size of the universe because we are summarizing actually integral is nothing else but summarizing all the ordinate, all the ordinate. Even we could do approximations, for instance, by knowing these ordinates, there are methods. There is a Simpson rule for integrating curves when we don't know the formula by introducing small rectangles. I have one rectangle here for which I know the elementary time unit and for which I know the ordinate which is the appropriate…

Y: The abscissa and the ordinate.

B: And then this one is another one. And this one is another one. And then this one taking into account that this is logarithmic, we could always take into account and summarize because integral is just a sum of all these ordinates… `

Y: Yes.

B: …multiplied by time quanta. So we could do this. And others way is, you have mentioned interpolation of the curve. Interpolation is done when you know several…even there are ready made applications to do this.

Y: Curve fitting.

B: Curve fitting, yes. This is done with so called Gill method. We have here, for instance, different points.
41:57
Y: Bret and I tried to do some of that.

B: If you fit this. And if you square them, then you come up with Gill's square method for interpolation. And it could be done part, part by part.

Y: I think using the Monte Carlo method. On the other hand, using the Monte Carlo…

B: Yes.

Y: And counting the number of spaces…

B: Oh, yes, of… all together.

Y: Of each one, one by one then we get…

B: Yes, yes, a simulation with…

Y: You would get kind of a band…

B: Yes.

Y: That would follow the curve.

B: Yes.

Y: But it would…You would have to…N would have to be limited to…So a computer could handle it. Even a super computer would have trouble.

B: Yes, yes, the magnitude is…The dimensionality of the problem is, of course, into picture. And it makes it more complex. It is for sure the dimensionality of the problem. It arises rapidly. So it will be a problem;, but still.

Y: Well, Bret and I were trying an approximation of the Monte Carlo method. And we kept running into slow downs. The computer would start to grind even if n was 10,000.

Bret: 10,000 we managed. I have done some with 30,000, but...
B: Yes, when you have 10^{26}, of course, it is a problem even if those are…

Y: Any computer.

B: Any computer. So this is, of course…

Y: But is…we could run something that was of the order of say a 1,000 where n was a 1,000. I think it would give you a rough picture. But you would have to include the rules that we have talked about.

B: Yes.

Y: That you have proposed.

B: It will be included, yes. Monte Carlo it included. And then…and even…You know, I was stressing several times cumulative probability. What we have here are just probabilities or expectation number which is actually more or less the same. We have probability for 3 arrows to appear, just one probability. And then, we have another probability for F4. And then, we have the first circuit which is F7 or according to other estimations F8. And so on and so on but remember the picture I was giving with tables. We have first F of 2; then we have F of 2 plus F of 3 which is actually integrating, so to say.

Y: (acknowledges)

B: This is integral of this curve which is giving us actually the size of the universe, if I am not wrong. Somehow, if we all…if we multiply all the numbers, all the random numbers which we do in the next column. Next column is for random numbers which fit into this range. And if the number of all these, these are actually arrows, is multiplied by elementary length…

Y: So, this is time and space. F2 is time.

B: It is time.

Y: So is this (?)

B: It is time, yes.

Y: That operator (?) is that operator (?) It's not or.

B: It is and yes.

Y: Ok, thank you; go on.

B: We have also the space because we have the magnitude for this one. This is for 2…maybe not here expressed like this, but we have it. We don't say…if we have both coordinates, then we have enough data to find the sum of all these rectangles which is actually integral, to find the integral of the curve…
Y: (acknowledges)

B: Only for discrete cases as it is our case. Maybe it is not visible here, but it could be done because it is Poisson. It is not visible here, but it is [I] square of [I] factorial n to n minus 2. And this is a magnitude. You have formulas, for instance, for the first X boson. It is arc cotangent.
47:30
Y: (acknowledges)

B: We have for both coordinates for space and time. If we multiply the elementary time with magnitude of this one, we are finding the magnitudes which is space actually.

Y: I agree; but do you agree?

Don: Ah…

Y: For your average individual?

Don: I don't see how that applies to what I was talking about before. I am just not understanding it, I think.

Y: Ok, fair enough.

Don: Not disagreeing with it.

B: These are my first ideas; I should think more.

Y: Yes.

Don: No, I would like to know more and understand it.

Y: I think that would work. And Bret, do you have any observations after having thought about this some?

Bret: The mathematics and the methodology that Biljana is proposing will do what it says it does; but conceptually the approach is flawed. You are not going to get any valid data out of this approach. Lila itself contradicts what you are trying to do. And you are not noticing it's conceptual error.

Y: So your view hasn't changed.

Bret: No.

Y: I don't agree with you. But if I did, I would just fold up and quit.

Bret: The only way you will get valid data is by taking an observer in the present and figure out how to reduce their sub-states. The observer in the present does see this fragmentary time in space as sub-states. And that's where you can get measurements from. You are not taking that approach.

Y: I don't see how that's…that is what Steven Hawking is doing now. And I think it is the right approach to work backwards from the present. But I don't see how that is different than running doing the same thing only from zero time and going up.

Bret: The assumption is that you are doing the same thing. And it isn't shown that you are. You are assuming that you are.

Y: Yes, I am assuming that. And I might be right; and I might be wrong, I have said that before. And you think it is not right; and I don't know. If you make the right assumptions, it's bound to be correct. Ok, I don't know what we are going to do about it. I think we are going to have to explore the mathematics for…to see…and see if they will account for this kind of a curve. You see, when we take a measurement and use it to calculate what the time quanta is and what the space, the length quanta is which is what we have done, that measurement is made now. And so we are working backwards because we're determining the value from now and then working backwards to figure out what it must have been in the beginning.

Bret: The ordering of time is due to a consciousness of an observer in the present.

Y: Yes, it is.

Bret: You are assuming that it also correlates with the random addition of arrow. And I am not convinced that an observer in the present subsumes the sub-states in such a way that it's equivalent to the effect of adding arrows randomly into a graph.

Y: I think it is the same thing as taking arrows away.

Bret: The same thing, I agree. But I also don't see that that can be shown to be the same as an observer will subsume it into his consciousness. That's not shown.

Y: I can't see how they would be different. At each number of arrows, you couldn't tell whether you go there by adding arrows or you got to it by subtracting arrows.

Bret: Actually there is something you can tell. Any pattern that is used anywhere along the way by the observer to order things means it must be connected to that observer. You cannot experience…

Y: Oh, yes, he can make an arbitrary choice; in fact, that is what a choice is.

Bret: An observer while subsuming sub-states does not change choices. They simply reduce the extant graph.

Y: Yes

Bret: By considering sub-states and comparing them.

Y: But I don't see what that has to do with what you said.
Bret: The ordering is in the consciousness of the individual and…

Y: Yes, but…

Bret: But the individual considers the smallest time out of those sub-states will be the smallest time. That provides the ordering of time, not the random adding of arrows.

Y: Yeah, but you don't know how you got there. No, it's not random. A free choice is not random. It is his choice; and that's it. And if we have one arrow in the time past of the current situation, you can't tell that situation how we got there. It could have been by adding arrows. It is just the number of arrows where they are. And you don't know how they got there; nor do you care so far as our analysis is concerned. And you are saying that there is some influence on the present time.

Bret: The rule of subsumption, whatever it turns out to be, is the influence on what an individual experiences and therefore report as a measurement in a physical journal. And it isn't clear to me that we understand the rule of how an individual will perceive space and time.

Y: Well, if we're working from the present time, there is only one history.

Darshana: Are we talking about averaging large numbers of…

Y: I was just about to say that…is that the mathematics will be different of how you arrive at the situation using the present from using the assumptions at the beginning. The mathematics will be different, but the result will be the same because a particular pattern is a particular pattern. Well, I don't know that we are going to be able to settle anything. It seems a shame to me to throw this out and not include this inflation curve that happens that is related to the connectivity of the graph. That correlation is so strong that to leave it out of a presentation is verging on criminal. However, if we are going to leave it out, I think we are finished. And we have done our work; and we can go home.

B: Do you have any data on a particular…taken from contemporary physics regarding the size of the universe. I believe you have or might find at a particular moment of time, for instance, 10^{-31} of a second because we could do it by this method although it requires…It is not just summing because there are a lot of them. But it will require a program.

Y: Yeah, it would require a program, yes. He wrote a program. I don't know if that program is available; one, and two and whether it is adequate. We were never satisfied, but we would need a program somehow.

B: Yes, we might use the infrastructure of the program. And then go through it step by step and see.

Y: See what we run into.
57:32
B: And see where we should adjust some (commons?)
Y: That's what I had in mind of doing.

B: For instance, instead of using as you mentioned one's equal probabilities, we shall include cumulative probabilities because cumulative probabilities will give us *if any* in this picture, the size of the universe. We could use it.

Y: Yes, I think…

B: For a small size of the universe, to check the size of the universe of illusionary moment, I stress because this comes into the picture.

Y: Yes, you just arbitrarily pick one that is small.

B: Yes, pick one that is small and check because integrating…

Y: We could go up to…

B: Integrating is…there is a Simpson's rule which does that. Integrating is summarising these small rectangles. And for them we have both space and time. We have two coordinates. We just have to multiply the elementary…always the same. You mentioned whether this is time or space. In this picture, I am proposing the time will always be one elementary time quanta.

Y: Yes.

B: And the ordinate, the other coordinate which is space will be derived from the value for this particular probability for this particular situation to appear. We have small rectangular here. This is one time quanta; and this is, for instance, if here on the overall graph we have F of 2, it will be square of 2n. So I multiply square of 2n with one time quanta. Plus, I add another time quanta although this couldn't be done…

Y: And this would be…
59:44
B: A (?) later.

Y: And this would be for your average individual.

B: Yes, the average.

Y: Because there is the expectation value.

B: This is what we have here. This is what we work with. Having in mind…

Y: Right. I think that's correct.

B: Yes, yes…

Y: Then we can do that.

B: Never forgetting the background which is actually the beauty of Lila. And it will be always presented. This is where from this all comes correct.

Y: Never forgiven, forgetting what?

B: The beauty of essential presentation of Lila in terms of ultimate reality.

Y: Yes.

Darshana: She had the background.

B: Yes, the background.

Y: Yes.

B: This is what makes this theory strong. And this is why it fits into the picture of contemporary physics.

Y: That's right. That's what I say.

B: Because we could not avoid that otherwise, we will never find n, for instance.

Y: Well, I would be…I think that is what we should do next.

B: Yes.

Y: I can't do it here now, but that would be...
1:01:06
B: Yes, maybe not here now, but maybe even define the steps of the program, define them, and reflect on them step by step in terms of Quasi.

Y: Well, Bret you asked me what did I want. And I said that is what I wanted. Now you are saying you are not interested.

Bret: The computer is the ultimate example of not understanding. And so anything you want the computer to do must be written in such a way that someone that doesn't understand it could code it into the computer. If you can write that, then it doesn't matter what I do and don't understand. I can code it. But if it isn't that way, and I have to make judgements, then you're relying on my judgement. And I don't see the validity of this.

Y: I can understand that. It's a different understanding than I had before which was "What do you want?" And you're saying what you can do or might not be able to do. So I don't think it matters whether this is calculated first and then you work backward to this or you do it the other way around. It's all the same because it is based on the assumptions of what n is and what the value of the Planck time is, and what the value of the Planck length is. And these are all based on measurements, pure observations. So I think always implicit in this approach because that determines the values along the coordinate axis and the ordinate.

Ok, I think what I will do having said what we have discussed here this morning is I'll try to bring up-to-date what I do know and put it on just one graph with a few notes and whatever I know on it, and then turn it over to you and to you guys. And you come up with whatever you come up with. And if you have questions of me, I'll do my best to answer. But I'm not going to see to it that somebody writes a program because I'm not able to do it myself. I don't have the ability to write programs for several reasons, the same reason my guru wanted to run away to the Himalayas and leave me alone so I can concentrate on my sadhana. But does that sound all right that I make a summary?

Don: (acknowledges)

Y: And say that this is what I know. Then you can take it; and if somebody writes a program, one of your students of something, or Bret does it, or whatever. You write programs too.

Don: I used to.

Y: Renounced that too, wisdom.

B: And also in order to make the task easier, at least one statement, one very small statement of the chart will be spread out in, not in logarithmic scale.

Y: Not in…

B: Not in logarithmic scale. But you know because if I apply this logarithmic scale, it doesn't work. It should be on a spread diagram.

Y: Linear.

B: Linear, yes. At least for a small segment, they should do it, for a very, very small scale.

Y: Although I…the curve is going to look like this, it is going to go like this. It is going to go like this. And then, it's going to go like that.

B: Yes, I know. But if I apply this thinking to this curve, it won't be…

Y: If we do it to a small part of the curve.

B: Yes, for a small part of the curve, for a very small part, 10^{-31}.

Y: Ok.

B: Yes, and just check.

Y: Ok, will do.

B: We might wrong…

Y: Like I did here, this one.

B: Yes, we are sure, for instance…we could estimate. We'll take two critical, so to say, values of the time and find the ordinate for them.

Y: (acknowledges)
1:06:16

B: And it will show, for instance, that it is not so complex. It could be this figure. (Trapas what is the name?)

Don: Trapezoid.

B: In this figure, we know this, we know this, we know the time. And we shall estimate. Although we have many approximations, it is unavoidable. Always we use n, for instance, n to the [I] minus 2 which is derived from either from Compton wavelength or from *pi* and *e* which is due to probability…

Y: There was a program…

B: Or rest mass which is also based on measurements. So we already introduced into picture approximations. It is unavoidable. But when…taking into account that this is of the order 10^{23}, then it doesn't matter actually.

Y: Well, we could make this small. We could make this 10^{3} for your simulation.

B: Aha, 10^{3} why? Will it spoil it unnecessarily?

Y: Because…

B: Yes, yes, I understand why to…

Y: To limit the…

B: To decrease the dimensionality. But we don't need to do because we don't need to spoil something that is not necessary to be spoiled. We could not avoid introducing rest mass, for instance, or Compton wavelength in order to find n. It is unavoidable because we don't have anything else. But this we could avoid.

Y: Ok. There was a television program. And in it there was these super beings. And they were dealing with the humans. And what they did was there would be…one Planck time would occur. And then in between before the next Planck time, they would get in it and they would change things around for the next Planck time. So between Planck length, they were the fates that were determining what is going to happen.

Don: Sounds familiar.

Y: Ok, that sounds like a good idea to me. Now you have some things. Darshana, Paracetamol.

B: Maybe, it is obsolete now, but I will present it anyway now considering all this new.

Don: Yogeshwar.

Darshana: I am thinking of just doing the first boiling of the tea because Angel said that is one way it is done. And if so, I could just give you that right now. It’s just been boiling.

Y: Yes.

Don: Yogeshwar, so far on the validity of this, I fully agree with…it is just a matter of the presentation and justification. I think we just have to get that.

Y: Well, you said that’s the part you are interested in. And it’s the justification for it.

Don: Yeah, but I am fully convinced that this is an accurate representation, a meaningful representation and meaningful colorations.

Y: Ok. This looks like Rubik cube.

B: Ah, yes. I remember.

Don: A three by three…

B: For tomorrow, I need to break this. Until tomorrow, I will break it. And then tomorrow, I will present it, how to do it.

Y: My son, my son Theo had a Rubik cube. And they, he and his friends, worked out a way for…to solve it. Then they would have a contest to see who could do it the quickest. And is friend went so fast, the whole thing just flew apart. Try to do it, in less than 20 seconds.

B: I do it for 5 minutes, maybe, maybe less.

Y: That was Neil Bailey, Sati’s son.

B: Aha! What is the correlation with Lila? Hofstadter, Douglas Hofstadter, famous in field of artificial intelligence in his book *Mathemagical Themes.* He presented that first of all, rotations of Rubik cubes are a group as, for instance, our system of arrangement is a group; and that it is correlated. And he found the correlation with the symmetries introduced by Li algebra in physics of particles. What I suspect he was actually…

Y: …the SU group.

B: Yes, here…even we have colours into picture; maybe this is why he has chosen this. We have here some these are the…

Y: Gauge bosons, yes.
B: Gauge boson, fermions, leptons, neutrinos, right-handed, left-handed, green, red, blue. And they are done by rotations. They are actually, actually they multiply. For instance, this and I multiplied one just to check. They use Tensor calculations. Maybe in the other part it was, yes, in the other (?) pions and so on. So this is a Tensor produce. If you, for instance… This is the (?) here are these red, green, and

blue tensors which are used for arch calculations in order to find…to find subgroups of particles.
1:12:47
Y: (acknowledges)

B: For instance, gluon green, gluon red, the confinement of hadron?
1:13:00
Y: Right.

B: In the process and then they multiply. For instance, I have found what was multiplied. Aha! This one, zero, zero by zero, one, zero, for instance. And if you multiply this column with zero, we have zero, zero, zero. With one, we have the same, one, zero, zero. With zero we have zero, zero, zero. So this is the way how they multiply. And what is the correlation? The correlation is that some of these rotations are allowed, are legitimate and others are not. And this is correlated with the moving of…with the rotations of…

Y: You carry that with you?

B: Yes.

Y: I'll be right back.

B: Yes, always, when I sit in coffee house, I do it. I give points to my students. I give them one week. I say, "If after a week you come, I spoil it. And you manage it; and you do it." Then you have, for instance, 8 points. And they are always…and they come because it is…

Y: If you know a solution, why do you keep doing it?

B: Ah! You know, practice, practice. You must practice because it is not so straight forward. There are many different interpretations. You forget very easily.

Bret: Ok.

B: Maybe, grandson of Charles…

Don: Exercise for the mind. Keep it toned.

B: Yes. This is actually a …he named…Hofstadter (Robert) he named his…it is like article, his… He was writing in *Scientific American.* The first editor was Martin Gardener, the first one who… He is a famous mathematician that was one, that was giving Mark articles in *Scientific American* with different mathematical puzzles. And the name of his column was mathematical games. And this is like a play with words. Hofstadter then replaced Gardener. And he was presenting different paradoxes in science and mathematics. And he named his articles under the common name of "Mathemagical themes" not mathematical games. Mathemagical gamez. It is like a… playing with words. Also what I was thinking yesterday was about this matrix theory. If we could make a further step forward, I try to find out whether the inverse matrix of the arrangement will give us something in to do it, just to see maybe correlation between these characteristic arrangements. But what I have seen is a…it could be done only in the case when we have circuit. Even then if there are loners, if there are non-physical individual that are not connected or separate baby universes, then the matrices is singular.

Y: Is singular.

B: Is singular.

Y: (acknowledges)

B: And so it means that we could not find an inverse matrix. What does it mean? For instance, in a symbol…elementary arrangement of A is in state of knowledge of B, B in state of knowledge of C. The matrix is this one, but since there is no knower of A…

Y: (acknowledges)

B: Or A is not known by any other non-physical individuals, then in this column of A we have zero's. And because C is not knower of any other non-physical individual, then also in this column, in this row of C, we have no one's. And so when in matrix we have a whole row of zero's or whole column of zero's, then we could not find an inverse matrix because…

Y: It means it is open.

B: Yes, yes, it means it is not closed. And since…if we have just one non-physical individual which is not known by any other or which is not a knower of any other or just one without incoming…I have written it. If the degrees of in-coming connections into non-denials into A is zero or the degree of the out-going arrows of another non-physical individual is zero, then the matrix is singular and couldn't bring us anywhere actually. But actually it makes sense because the…for instance, now once we introduce physics into picture, we only have common, so to say, perception of space and time when we introduce circuit. So this is visible in matrix. But even then, we have separate baby universes. And if we have just one which is not…which is isolated, then this introduces zeros into the picture. This was just a contemplation over matrices. I was asking myself whether we could find another relation to one that we already have. And this is a…in relation…in regard to this one we have find and inverse element. And this is the complementary graph. And we have found the identity or neutral element. And this is the matrix of ones. But here we have already an inverse…

Y: (acknowledges)

B: Matrix. And I wondered whether this inverse matrix could be related to another relation other than one we have done which is (and) because if we find another relation, then many other elements could be introduced into picture. De Morgan's Laws I have mentioned, for instance, A and B is not A or not B. But until now I could not do this because this means two operations. We have (and) here and or here. So far we have just (and) not or. So I was pondering. I was thinking about how to introduce another operations. So this is something which may, should be remembered. Also I was…I…because you mentioned we should be talking more about space, I have written some elementary arrangements. The smallest, smallest, smallest circuit is of three arrows. And, for instance, if another non-physical individual chooses to be in a state of knowledge of any one of these, then since we introduce a difference of pathways which are combined into the consciousness of this individual, I was thinking whether it might create false perception of space. But maybe not.

Y: Of…perception of what?

B: Of space.

Y: Of space.

B: Once we…because this is like…it might be perceived as a crossover because once the seemingly flow of information is established you might see this even… A is… This F is connected to A to B to all of them, so it is like a crossover, but actually I believe this wouldn't give us.

Y: I think not.

B: No, no, then I said, "No, this is just a circuit." Also here, I have finding different pathways. And what does it means in regard to choosing one particular individual to be referent one. And, for instance, clearly, clearly…although these are strictly speaking isomorphic in the sense of non-directed graph, here we have space. We have space because we have the same distance B, C, D and B, C, A which introduces space.

Y: Yes; it's a bifurcation.

B: Yes. Although these are isomorphic, here we don't have space; and here we do.

Y: Here we do.

B: And these, I don't know, maybe this is not something which deserves to be presented. But since I have done it and this is the way how I understand what Baker has done here...He says, "This is the way how he finds n using Compton length." He says he picks one time unit which is this time unit in my diagram for one bit. And he says, "Once every X times around large circuit, we do Z plus one routes around the smallest circuit which is n minus F of [l]. And so I have picked the smallest possible number of around and around the circuits which is, for instance, 3. The smallest circuit will do 3 seemingly moving now. I always emphasize around the circuit. We have one, two, three.
Y: What is this value?

B: This is I…You see, I have written here. This is…since we have just one dimensionality at this point, this is the first crossover as I understand because we have the circuit and the crossover. We have just one dimensionality. So this is just a way to present…it is…

Y: Well, we could call it amplitude.

B: Amplitude, yes, yes, it is not space because we just introduced one-dimensionality and this spread out is two-dimensional by itself. So it should be taken into account.

Y: OK.

B: But (? the last one) so this is just a way of presenting it. So I have three circuits here. And then around the bigger circuit, I have two. This is one, and this, the second in order to correlate to what you have done.

Y: In order to correlate?

B: Correlate, to find the connections.

Y: Yes.

B: To make it visible for me at least. So we have 3 over the smaller; and we have 2 over the bigger and now the difference. In order to find the difference, I have made one of them multiplied by minus one, a mirror image of the original. The original should be, for instance, although it doesn't mean in terms of what is going on whether you will be circling this way or this way. This is why we have two n, for instance. But to have some methodology, I have supposed that this one is the other way around. In order to find the difference, and now point by point, if we find the difference, this is another wave forming which actually corresponds to the… If I am right, it is somehow introducing radiation. Or now, I don't want to make a big mistake. It is like a boson, a carrier of weak force.

Y: (acknowledges)

B: Because as we have drawn our arrangements, the boson was introduced when the first crossover into the circuit appeared which is this situation now.

Y: Interesting.

B: So this is like the wave of the boson, so to speak, of the carrier.

Y: What does this come from? The crossover…

B: This is the…

Y: The combination of the two.

B: Yes, the combination of the two. It is the difference of (?) because when circling, there are different waves.
1:28:04
Y: They are out of…

B: It could be done many…for instance, why it could be done? It could be done in many different ways, but…

Y: This may be correct.

B: This is how he does it here. And now for the lambda which is the Compton wavelength, he takes the value from physics for lambda. He replaces lambda here which is…

Y: That's the measured value.

B: …which is this one. The measured value and the other is straight forward. The other is clear once we have this picture. How he does it, he says, "Every once in X times around large circuit will go around small circuit X plus one times," which is what we do now. And this is one bit, this is one bit of time, this is one bit. And lambda is connected with this one bit by this formula. Later on when we shall come to this point lambda F is C, where C is one Planck length over one Planck time which is the speed of light. And one bit is the frequency actually; the reciprocal value of one bit which is time is frequency.

Y: (acknowledges)

B: Is frequency. So one, we express this one bit in terms of N large which we do now. Then we have the whole picture. We have lambda; we have F; we have C; and find N. Lambda is the Compton's wavelength. And now when this happens, he supposes…He makes an assumption, then the first crossover introducing space and space being this picture, A, B, C, D. There are 3 arrows. 3 arrows are F of [I]. But in a circuit, although in a circuit, this is an assumption although it is approximately. The first crossover is not the same; but this is the assumption. And now…so this part of the curve is F of [I] actually. And then he goes, "Because these are now for one bit both then we have, we equalize 2 XN is X plus 1 where X is the number of circling around the circuit." For me, it is 2 for the large circuit and 3 for the small circuit. And this is 2 X plus 1 which the number of circling around the small circuit N minus F of [I] because this segment of the circle is N minus Y if the corresponding segment is F of [I]. So we have the whole circuit is N although 2N. This is another point. We discussed this point. And I believe my explanation might be right. We have 2 NX. And we have 2 X plus 1; the rest is N minus F of [I]. And then we have…2 is crossed. We have XN. If XN is XN minus X plus 1 is for F of [I]. Later on, he discards this. He neglects this member of the equation because really when we are dealing with N which is 10^{32}, this is could be neglected.

Y: Very small.

B: It is very small, so it is just neglected. And so he has F plus 1 F of [I] is N. X plus 1 is N over F of [I]. X is N over F of [I] minus one which is N minus F of [I] over F of [I] which also could be a starting point. We might see that this ratio is the number of circling. So the time for one beat is…Now he knows X because not always this happens to have…And why we choose this one particular beat when we have because this is when we have (what is the word) when we…when they are fit.

Y: Beat frequency.

B: I want to say when they are one over another, what is stated in this picture. Why don't we chose just any number of …any time point as a unit because when we have this accordance of waves, we might expect one pure wave, pure wavelength to be extracted. I don't know if I am clear because he wants to extract just one pure wave length.

Y: (acknowledges)

B: And this is why he takes the (what is the word when two things are one over another?)

Darshana: Subtraction?

B: No.

Bret: (some technician). Aberration?

Don: Superimposed?

Bret: Superimposition, no, well, depends on the context.

B: When they are the same, so to speak, when...

Don: No, when you are talking about this kind of thing.

B: When they become the same. When…because you know what I want to say is, I don't pick and he doesn't pick, just any time when you have…

Bret: Harmonic?

B: Not the same.

Bret: Same endpoint?

B: Yes…

Bret: Harmonic is that it.

B: In a way, yes, they are harmonics, in a way. And so, this is a way how I understand it. And once he has this into picture, he has all the values he needs. The frequency is dependent, is included into lambda F is C. We have C; we have F is 1 over this bit. We have…it is in terms of N where N is the number of non-physical individuals. And we…lambda, lambda he gets from the measurements because this is…the Compton wave is…Compton wave is for electron. And…this is correct. And he finds the number of N correctly. 1.38.

Y: You can use the electric charge and get the same thing instead of the Compton wavelength because they are two forms of the same thing.

B: Aha! Yes, yes, charge length. Yes, yes.

Y: That shows you another way of getting in.   And how can that be equal to 10 to the *e* to the *pi*? Well, you have explained how that can be. And I am happy about it.

B: But this is beautiful.

Y: Yes, it is. This is similar to the way Feynman understood it. But the amplitude varies with the phase. He imagined there was hand going around like that. Well, he didn't know that there was step by step going from crossover to crossover. The connection around the circuit is…

B: Yes.

Y: It is like magic.

B: I read a lot yesterday when I was doing this. I have done this point, you know. I have done this all the points separately. Here, here, here…

Y: But he didn't…

B: And I have seen that it is something similar in the picture. It is similar when you have interaction. Then a wave is released; and this released wave. This is actually a sum of our history.

Don: I thought this would make a good basis for a paper.

B: I was thinking a lot about this. Why? Why? Why? Several days.

Y: As appropriate, we should give him credit for coming up with the mathematics even though he often didn't understand its Lila relevance or its physical relevance. I would ask him a question and he would say, "Ok. I'll see what I can come up with." I said, "Can you get N derived from something like the Compton wavelength and the electron? He would say, "Let me see." And that's the result.

B: Great! And also about G that you obtained. It is…I have it somewhere…The formula you are using for G.

Y: For G.

B: For G.
1:38:51
Y: Yes. Well, this formula is (?)…is known.

B: I know this is known. But this one.

Y: Yes. Ah! You have it here. I even didn't see this. I was looking at this one which is the same.

Y: It is the same thing as the other one.

B: Yes. And maybe…and this could be another way to find N if you take G from the measurements.

Y: Yes.

B: Just the same he did.

Y: Yes, that's…

B: It is another way to find N.

Y: You are just solving it for G, that's all.

B: Because we have the same lambda here. We could, for instance, even take this formula for lambda which is in terms of N, and replace G and find N.

Y: Yes, which is just…

B: Just playing…

Y: It is like Max Born showing Heisenberg and Schrödinger were saying the same thing but two different ways, one in matrices and the other waves.
1:40:21
B: Yes. Here is N minus N over *e* to (?). Slightly changed, this is not *e* to K but *e* to K plus one here.

Y: Ok. Let's take a break until 2:00 o'clock and see what we come up with then.
1:41:13
Don: Biljana, just see if I can get this across. If we make that diagram D and then (?) do it on three acts (?) perceived time, perceived space, and number of choices. Like at this point, we have a first circuit. But then when we have the first crossover, this is a small increase here. But there's this big jump in perceived space and time at the crossover. Would that?

B: For Monte Carlo?

Don: No, this is…like when we have…see this graph? We have log time quotations of quanta that's really choice, because it proceeds…

B: Yes, yes.

Don: But, see here? There is an increase in common space/time; there is this jump.

B: Yes.

Don: But when you say, "An increase in…" Yeah, this is space. So space jumps; but time doesn't jump on this graph.

B: (acknowledges)

Don: But in the perception, it does.

B: In perception, it does.

Don: I was wondering if we clearly distinguish the extant choices on one axis from the perceived time? Then it is like an apparent discontinuity. In consciousness, it wouldn't be because it is always continuous. But mathematically, there is this big jump when the crossover occurs so that… See, that point comes down to this axis here. So there is this big jump in both time and space. In…I don't know if you could call this imaginary time or conceptual time verses perceived space and time. But that is where I am having the problem with this being called time.

B: Ok.

Don: See, there is also a jump this way. There's a jump in time too. Does that make sense?

B: Yes. Till you introduced another axis for (the) number of arrows, practically, or no.

Don: Exactly! That is exactly what it is because… But the perceived time as a result of those arrows suddenly jumps. And that is where these curve.

B: Aha! Yes. And we have additional information.

Don: Yes, to separate out that which, to me, is conflated with this perception here.

B: Yes. Yes.

Don: So, I am wondering if you agree with that because that is where we have these jumps. Where…

B: Yes, exactly.

Don: Where we have these…this jump and then this other jump with the second crossover. And then there is another jump like this. Even though there is a small change here, we go way out here now, somewhere. And that's where we get these discontinuities in these curve. This continues like unfolded number of choices and expanses (?). But there is this perceptual jump. Does that make sense?
1:44:18
B: Yes.

Don: Because I can draw something like this…

B: Aha! It will be great.

Don: And just separate out…See? Because this still says time here…and which is fine as long as we understand what time…from what point of view. And to me…

B: Yes, yes, yes. In terms of Lila, it is important; maybe in terms of other considerations not. But in terms of Lila, it is important; and it should be stressed.

Don: I'll…because then I think that some of these measurements may… conceptually, we take those things apart.

B: (acknowledges)

Don: It might be easier because we make measurements in terms of number of choices. Our function…it is like a step function in terms of choices. It will have to be a step function which maps to this point and suddenly maps to this point. So it not a classical smooth function; but it's a step function. It comes along as this proceeds linearly. Suddenly we have a jump because of the crossover in the second crossover. It's a step function and so in consciousness because it's a continuity. We smooth that over just like in space. This here is in time. This is a continuum for us. But the mathematics…it will be a step function.

B: Yes.

Don: So that's why we can't have a single equation. This goes along…This is the input at the X, the number for X. But then at this point, there is a jump up to this. And at this point, there is jump up to that.

B: Yes.

Don: So, just it's mathematically…we can always tie back into the continuity from the consciousness that makes it appear continuous. Even though the mathematics is a step function…Goes along with this and (?) goes along with this (?)
1:46:31
B: Yes, great!

Don: I just think that it may help our mathematics in the future (?).

B: Yes.