#35
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Recording 35

Y: Today I am going to go first, Mrs.Percinkova.

B: Yes. Ok, great.

Y: Apropos to what you were just saying, the purpose of this meeting that we are having over these four weeks is for me to share what I have with her.

Don: (acknowledges)

Y: To get her to understand it. Then whatever you guys pickup in a limited way is fine. Eventually, yes, to understand that…what I am saying, not necessarily to agree; but to understand it. Then we can really get down to…if there is other viewpoints or approaches to it, to discuss that, however, way we can arrange to do so. So I think that is the purpose of what we are doing here. It is not to write a paper. It is not to get a Nobel Prize. It is not to publish anything. If that happens that is up to you, you all.

I'll talk about this several different ways this morning. I was living near the town of the city of Adelaide which is the capital of the state of South Australia which nobody in Europe has ever heard of.

B: Some of them.

Y: Nobody. Not much even a lot of Australians don't even…They have never been to Adelaide. They don't plan to go to it; they don't want to go. It is actually a rather interesting place. And they have a University there, the very central feature of the town. And it was a designed town from the beginning. There was no town there. A surveyor came in, laid out the town; and they built the town. It was not made of convicts. It was made of colonist that came voluntarily; whereas, New South Wales and Victoria and Tasmania and Queensland and Western Australia were all settled by convicts from England, but not South Australia. They were free men and very proud of it. So they built this University in a beautiful town.

In the University was Paul Davis. And so I was presenting the Lila Paradigm to him and having it rejected two or three times. I went over to the Philosophy Department and talked to a philosopher there. And he says, "Well," he says, "This s what you are talking about, I have heard about that kind of an approach; and it's not mine. And so why not recommend you to see this other guy who is at the University of New England in New South Wales, northern New South Wales up in the mountains." So it was for various reasons, it was time for me to leave Adelaide anyway. So I left and went to the city where that University of New England was and still is. It is called Armidale. And I looked up the professor who he had recommended I talk to who

was the head of the Philosophy Department. His name is Peter Forest. And he wrote this book. He is a world expert in symbolic logic.

B: Aha!

Y: And he wrote this book because he was in a terrible automobile accident and killed one of his sons. He was driving and he wanted to defend that you live beyond the death of the body. And so he was…T his is his logical defense. And he is a marvelous logician. And he wrote a book, a whole thick book on symbolic logic. I tried to read it and all I...There was just the symbols. And I thought, "Am I going to learn this language?" Anyway he was interested in Lila Paradigm. And we spent quite a bit of time together. But I could never convince him that knowing the definition of consciousness is important. He says, "Oh, now just write a rule. And say what consciousness does." Well, anyway he says, (we were talking about A arrow B arrow C.) And he says, "Oh, that's a transitive relation." You recognize the term, a transitive relationship?

B: Yes. It is…

Y: Now I want you…would you do this for me? Walk over to the corner of the room stand facing the wall. No, the dictionary, stand at the dictionary, Webster's big dictionary and read transitive. It's open to the very page. No, no, no that's the Sanskrit. The big one…It says transitive relations. And read what it says.

Don: Number one, that tacit (on) or way, transient, transitory.
Number two. Care (?) by…
7:05
Y: No, you're reading transit. I want transitive relation.

Don: Ok. Transitive relation. Ok. "The relation such that, if A has this relation to B and B to C, then A has this relation to C."

B: A has this relation to C. Yes, transitivity.

Don: Greater than.

Y: Did you hear that?

Don: Perceive, imply.

Y: That's fine, thank you very much. Does it look familiar? That if A has a relation to B and B has a relationship to C. A has a relation to C.

B: To C. Transitivity law.

Y: So the question is, "What relation is it?" There is a relation. And they give in the second definition the second comment or the under comment. Some examples implies, A…this relationship implies that A is related to C, or precedes. And that's how we are using it. The thing is, "Why is it so? That A → B• →C relation. Why is it so that A has a relationship to C.? And the symbolic logic does not explain why.

B: Aha, yes.

Y: They just say, “There is.” And it makes sense to them. And it makes sense to these very rigid philosophers. And there is not argument about it. They all agree that there is such a relation. The other day you mentioned that it is a transitive relation.

B: Yes.

Y: That A B…A arrow B arrow C, and you had no problem with it. The question is, “Do you understand why that is so?” And in order to explain why it is so, two things have to be true. That all there is and that which underlies every thing is individuals and their relations. That’s one. And the second thing is that you have to understand, “That if A is in a state of knowledge of B that includes B’s knowledge of C.” And that explains why this transitive relation is so.

B: Yes.

Y: Having said that, you will know that scientists, philosophers of science and philosophers will not argue with that. And they will not reject your paper because of that argument. And they will see that it precedes it. And so, therefore, it is the precession argument that is valid. And so the temporal argument is valid. All right. That is one thing. The other thing is I want to repeat what I said the other day about knowledge and direct knowledge, that in philosophy knowledge is in two categories: tacit and explicit. In the Lila Paradigm, direct knowledge is always tacit when it is in a comparative relationship with a state of knowledge of an attribute that one is in a state of knowledge of with the ontological attribute that one is in. And that relationship is of a likeness, or sameness if you prefer, that consciousness is the case of that attribute that is in the state of knowledge. But the state of direct knowledge remains tacit. The consciousness is the explicit. But it is a different state than the state of direct knowledge. Now you can…I say that there is direct knowledge that you get from yourself, or can be of yourself or can be of another. And even though the other maybe in a state of…other states of knowledge that are included in your direct knowledge of that individual, that knowledge so far as you’re concerned is due to your direct knowledge of that individual. So it is not indirect knowledge. It’s direct knowledge. And all perception which is derivative from this direct knowledge is really direct knowledge. And there is no other kind of knowledge than direct knowledge. And the so-called explicit knowledge is consciousness. Now that’s on recording. So be it. I say, “That’s the way it is. Right or wrong, that’s the way the Lila Paradigm operates.”

Now that said, there is another subject I want to take up. This is about fundamental physical constants. And there is one category of fundamental physical constants that have been defined and measured. They are called universal constants. That is to say, they apply to everything everywhere in the universe. That’s different, for example, from electromagnetic constants. In…the electromagnetic constants only apply in certain cases where there is electric charge interaction; or there is atomic and nuclear constants that don’t vary. But they only apply on the atomic and nuclear level. And then there is physical chemical constants. And those are the main categories of constants. But so far as the Lila Paradigm is concerned it’s the universal constants that are important at least in the beginning. We have to get

those understood first. What in the arrangement or sub-arrangements in the Lila Paradigm are responsible for the specific universal constants? And one of the universal constants is the speed of light. It's true anywhere in the universe even though it involves electro-magnetism. And we discussed that the other day, that it's little n times L sub Q times the length quantum. So, n times LQ not to the exponent of LQ, but times, divided by n times TQ, time quanta, or if you like imaginary length and imaginary time unites. This is the speed of light in terms of the Lila Paradigm. Or you could say, in terms of Planck's approach to units, it is one Planck length divided by one Planck time. Now the next important universal constant is the Newtonian constant of gravitation symbolized by capital G called big G in physics. And it is only…It is very difficult to measure. And it is only really agree upon to two significant figures, 6.6. The last measurement that was made was accepted is that it is 6.673 times 10^{-11}. But it is really only known to 6.6 because there are five other measurements that start with 6.6 but have very different values after that. The units at this point are not important. Another universal constant is Planck's constant which is the smallest unit of energy. Or you could say it is the smallest common universe that is biggest circuit which is common universe. The smallest unit… square area which is one Planck length on the side. And, of course, it has its variant which is covenant for physics because…which is Planck's constant divided by two *pi.* Then there is the Planck mass, the Planck length and the Planck time. And all of these are derivable from Planck's constant, H bar actual it's…that is Planck's constant divided by 2*pi.* And from divided that by big G and take the square root of it gives the Planck mass. So you can get the Planck mass, the Planck, length, and the Planck time by knowing the value of Planck's constant by measurement, knowing the speed of light by measurement, but you can't get the Planck length by measurement, but by using the gravitational constant big G and the speed of light, and Planck's constant reduced or direct constant, some people call it. We can get Planck's length. But I have another way of getting Planck's length. That isn't determined. And get it more accurate than the measurement for Newton's constant of gravitation which is used to calculate Planck's length for this table of the constants. And that is derivable by the Lila Paradigm. As I said, big G is only known really to 6 to two significant figures. 6.6. Meters cubed per kilogram per second squared. So I wrote a paper that takes the Lila Paradigm essentially out of it. And it derives a formula for the Planck length. And then I use that accurate Planck length to plug into the formula for big G. And I can get it to ten places instead of two places. So we have a prediction. Now I am going to give you the formula in terms of the Lila Paradigm. And then we'll put it into scientific paradigm. The Planck length that is L sub P is equal to Lambda sub C E. Now Lambda sub C sub E is the wave, Compton wave length of the electron which is know very accurately. It is easy to measure very accurately; whereas trying to measure the Planck length itself is so small they can't measure it directly. Instead they measure big G. But they only get two significant figures. So if we can derive the Planck length from the Compton wave length where it's in a formula which we'll show you here. The formula is Lambda sub C E (K minus 1) divided by K times n minus n divided by E to the K. So that parenthetical value there…

B: Is n.

Y: Is little n.

Bret: Sorry K N minus n?

Y: n minus n over E to the K.

Bret: Capital N or small n?

Y: Capital N. But N minus n over E to the K is what little n is.

Bret: Is K times all of it? Are there more parentheses in there or…?

Y: I think the best way to do it is to show you the formula.

Bret: Yes, there are more parentheses in there. Yes.

Y: When I did this, I was in Italy at Silvano's.

B: (acknowledges)

Y: So I used his computer and his web connection and Googled big G. And just over the Alps in Switzerland was a man who was measuring it. So I sent him this. And he answered back and said, we are measuring it more accurately than ever and we won't know the value for about three months. They were measuring it by a room almost as big as this room full of mercury hanging by a cable connected to a balance beam to weight it, and trying to get it more accurate than 6.6. Well, there is five other people that have done this too at great expense and care.
And they all get a measurement with a certain band width or error. But they all get different numbers and the arrow…and the error widths do not over lap. So, all of them say that theirs must be right. But mine come…I'll show you how it comes out. Yes; here it is. The value I get is 6.67876983 times 10^{-11} meters cubed kilogram to the minus one second to the minus 2. And they get 6.6. Some of them get 6.66; some of them get 6.6685; some of them get 667259. Another one gets 6.71540. This gives us an average of 6.68. And mine is 6.678769. When I sent him, he wrote back. He said, "Very interesting. It's interesting. You're the first one that's worked out a theoretical calculation for it based upon the wave length, the Compton wave length of the electron. He said, "But my…our measurement is right. And you'll see that yours is different than ours. And yours is wrong; and ours is right." That sounds like somebody in secondary school talking to each other. Mine is right; and yours is wrong. Well, my brother is bigger than your brother. Well, I'll get the army. Well, I'll get the navy. Anyway, I don't know if mine is right or wrong. But I do know that it's directly calculated; and it is no coincidence. I'll read to you the formula; and then show you the formula when I change terminology from the Lila Paradigm to the physics paradigm. So we get a Planck length is equal to the Compton wave length times the inverse of the square root of Alpha divided by the inverse of the square root of Alpha plus one times 10 to the *e* to the *pi,* minus 10 to the *e* to the *pi* divided by *e* to the Alpha to the square root of inverse of Alpha to the square root plus one. There is the formula stated in terms of standard physics. And I put it in terms here of K. This is a much more compressed statement which usually indicates on the right track toward truth. For symbolic logic, we could put K and n and the parenthesis with symbolic logic to show the effect of consciousness and the merging of the collapse of the consciousness to single state by symbolic logic. I think the whole thing might be done that way. Anyway, I never sent this paper to anybody. I'll read a little bit of it to you. And then you probably want a copy of this.

B: Yes, thank you.

Y: 31:55
It's entitled "Using a relata relation paradigm to compute the Planck length from the Compton wave length Alpha *e* and *pi* yielding a predicted value for G of 6.67876. The Newtonian constant of gravitation is notoriously difficult to measure. Recent measurements use a variety of experimental devices that vary… great difference in their devices. And they have range over the list of values that I read to you a little while ago. Thus we have an average of 6.68 plus .03 minus .02 with a relative uncertainty of 1.3 E minus 4. But this is just a way they use in judging the accuracies and distribution of the mea surements. More accurate mea surements of G are in the offing in the next few years. (See Cohen and Gund?) If they confirm the prediction for the value of G produced by the *relata* relation model presented here, this paradigm should be taken seriously. Well, those two measurements are now in. They have been reported and they move the average measurement even closer. But none of them exactly match my calculated value. But I am within there margin of error. Or they are within my margin of error not because mine goes 9 places. So we use the speed of light which here is 9 places. We use the measured value of H bar which I have to 9 places. We use the Compton wave length which is to 9 places. We use Alpha which to 10 places. We use E to any number of places you would care to use, and the same for *pi*. And this approach was developed using directed graph notation (See Bollobas, 1985?) to represent the elements of a *relata* relation paradigm (See Berner 1998 a, b, and c.) intended to describe an underlying fundamental network which manifests as our universe. To show the principles involved, the equation is given first.
33:45

I am not going to read it all. And then explains the related *relata*/relationed diagraphed paradigm for each term of the equation and what physical phenomena that aspect manifests. So I break down this equation section by section and explain what each one of them…what Alpha is, what the Compton wave length is, what *e* is, what *pi* is. I don't explain what 10 is though, ten is ten. I go through all that. And then I have my usual two diagrams of the no circuit; and the circuit version of the same twenty six. And then I assemble the equation step by step. And then I say, "In terms of complexity theory that equation could be written this way," the one that I gave you first. Then I sight all the situations of all the different people and backup all the measurements and the arguments in favor of this diagraph approach.

B: Great.

Y: I didn't send this to anybody, any journal or anything to see if they would reject it because I already decided they would; that until the paradigm shift is made first, I don't think anybody will accept it, anything having to do with it. More than that, it is interesting go see so and so. That's interesting to go see so and so. He is into that sort of thing. And you say it to them and they go, "Oh, yes, it's time for the faculty meeting." You are the first one.

B: Thank you so much. This is very, very convincing. It is great, actually. This is the…this should be stressed and emphasized.

Y: I can't see any argument with the formulas. I could see one could challenge the explanation for the formulas. But then how did I get it. Did I just write this formula down and it happened to be right? No, I did it by reasoning of what the Planck length must be. And knowing the Planck length accurately, then you know. You can calculate *g* accurately.

B: Rightfully you are stressing that this result for n comes from the complex networks. Just last night I was pondering upon this, how this was obtained.

Y: Yes, it is…

B: And now…

Y: It is correct for large values.

B: Yes, it is correct. But another insight, at certain point, we mentioned that some times, for instance, when we do Kn over *pi* over 2, we normalize this value by spreading it out the circuit of n by *pi* over 2. And in this case, we normalize it by dividing by *e* to K.

Y: Yes.

B: Now, I believe I know why, and when do we do this and when this.

Y: Ah!

B: Yes.

Y: You got my attention.

B: I hope I do because whenever we are referring to *relata,* you know.

Y: (acknowledges)

B: Whenever you are referring to agents, the non-physical individuals, then we do the normalization by spreading it over the circuit by dividing by *pi* over 2.

Y: Aha!

B: And whenever we are dealing with relations not *relata* but relations.

Y: We are dealing with *e*.

B: We are dealing with *e*. And why it is so? It is very simple. It is so because *pi* in our… Your n is 10 to *e* to *pi.* The first derivation of n was based on this thinking that whenever we have crossovers we have relation one non-physical individual to one. And this is…the number of all possible relations which could appear is one squared. One, we have relation of one non-physical individual to two others then we A to B, B to A and this related plus two relations of the non-physical individual.
Y: Yes, the Poisson.

B: to the two squared. And if we have three, we have this one.

Y: Nine.

B: We have nine which is three squared and so on. And so when normalized because always we have one individual which is referent, we have either 1 over 1 squared or 1 over 2 squared or (being?40:50) plus and so on. One over n squared and this leads to *pi* over 2. More accurately *pi* squared over six which is approximately *pi* over 2. So whenever we are doing the normalization for *relata* for non-physical individuals so we divide by *pi* over 2 to get the average spread out.

Y: So it exists per this.

B: Yes.

Y: That is what is meant by normalizing.

B: Yes.

Y: Is what is it in units of that you are using?

B: Yes. So we are doing this. And when we are dealing with relation as in the…for instance, when you are obtaining G, you are taking into account Compton's wave length. So you're dealing with an arrangement something like this. Isn't it so?

Y: How is that different than this?

B: It is different because when we are obtaining the number of n small in a arrangement…

Y: Yes.

B: In a particular arrangement which is…the thinking is…goes like this. The ones…this is the thinking. Two every…when I am…when I have in picture relations non-*relata* then I have bifurcated sub-states. In this case, I have crossovers.

Y: (acknowledges)

B: In case when I have *relata,* I have crossovers. When I have relations, I have bifurcated sub-states.

Y: Yes.

B: And when I have bifurcated sub-states I have the first possible sub-state is this one, one relation to another. The number is one or more accurately one factorial. When I have two in one relation, and two other bifurcated…

Y: (acknowledges)
B: Then I have two sub-states. This is one and this is two which be superposition and reduction of superposition. I have perception of this. So these two

superimposed sub-states and this is two factorial. When I have three, then I have this one then the other, then the third, then I could have two of them, then I could have the other two of them. Then I could have the first and the third which is six.

Y: Now we are counting sub-states.

B: Yes, we are counting sub-states. And then the number of sub-states is three factorial which is three times two times one.

Y: Bravo. Beautiful!

B: I was thinking last night actually while I was walking.

Y: Yes, I…

B: So whenever we have relations we have *e.* Whenever we have crossovers, we have *pi*. And this is all correct. Or better, even better is whenever we have *relata* or non-physical individuals, the normalization is done by *pi* over 2.

Y: In relations (right here?44:47)

B: And when we have relations or states of direct knowledge.

Y: And sub-states of relations.

B: And sub-states of relations, bifurcated sub-states of relations which by superposition…

Y: Then we get *e*.

B: Built the consciousness, then we have *e* K and then I have these sub-states which are spread out over K.

Y: Yes.

B: They are spread out over K. So for every K I have *e*. *e* times *e* times *e* times *e* times *e*; it is K times. So n over *e* to K is the number of all the relations which are not in the circuit.

Y: (acknowledges)

B: I have the circuit for which I am searching n small. I want the number of the relations very important. I came to this idea by pondering why Baker has put his why.

Y: Why 2?

B: Why, why? He… because he was…he…maybe he… by all means, he was thinking rightly. But unconsciously he relates one relation to one *relata*. Actually he was because he was introducing into picture N big and capital big (N) is referring to number of *relata*, of non-physical individuals. He was introducing this number of

relata which is N. But relations is different. So this is why he had 2N. We can go back to it; so, back to my picture, all these. So *e* to K are all the relations, not *relata*, relations. For every relation, I have two *relata*, one out-going from one non-physical individual, in-coming into other non-physical (individual). Every state of knowledge is always for two; one is a state of knowledge of another. So we should differentiate between them. And this leads to this formula. So *e* to K are all the rest, all which are not in the circuit. N spread it over…all which are not in the circuit are these which are excluded from the circuit. So in the circuit what remains in the circuit is N minus n spread it all over, *e* over Km which is for complex networks which is the number of the ones…of the relations not included, relations including all the sub-states of the relations. This is very…because this is dealing with definition of consciousness because we have superposition of all the sub-states, of all the bifurcated sub-states. So this also includes the non-physical. I don't want to say physical, background of the explanation for not just direct knowledge but also consciousness because it includes all the sub-states which are superimposed in one. So all these different, all these different combinations of bifurcated sub-states which are always in relation to relation which are always related to states of knowledge, not non-physical individuals but states of knowledge. So the combination of all these different sub-states which make the superposition and notion of and actually includes consciousness are *e*, are leading to *e*.

Y: (acknowledges)

B: And since for every relation we have K of them, K of them, K of them, K of them which are outside the circuit. All of them is *e* to K. So n – n over *e* to K is the number, the same n, the number that are in the circuit.

Y: That are in the circuit.

B: The circuit. And when we have into the picture one specific arrangement denoting, for instance, electron or a quark and, in your case, I suppose a electron because you are introducing Compton's wave length, then this n is in terms of…

Y: Yes.

B: And K is 3 or 2. K might be two depends which particle you use. So rightly, when we are dealing with recursions we for the first recursion… we have n K squared over *pi* divided by two. For the second n K cubed over *pi* over 2.

Y: There seems to be some question about that from somebody here.

Don: No, I…I agree with her interpretation there based on…

Y: Had you shown her this?

Don: No. No, it was just yesterday. Oh…

B: May I say something else regarding this gravitation?
Y: Yes. I just want to check with…

B: This is great. This is great. You should emphasize this although you always emphasize them, the background actually which is the essentials.

Y: Now what is this?
51:54

B: First I wanted to mention shortly about quantum gravitation which is in favor of Lila. Lately this is recent discovery in the Institut Laue-Langevin as I remember near Grenoble in France. They do this experiment I have mentioned it just shortly.

Y: (acknowledges)
52:11
B: Just shortly this was designed by Paul Langevin, a quantum physicist who was obsessed by gravitation. And all his life he was thinking about it. And finally in Grenoble, they spent several years to build all the equipment and all which is needed for this experiment. And finally they did it. And they have two glass or some…two plates which are close to one another at the scale of the distance between this. For instance 10 to minus 12th of centimeter, or something like this, to be compared to the neutrons, for instance. And they…this is in Faraday cage so there is no electromagnetic…
52:20
Y: (acknowledges)

B: …influence. And they are using neutrons because their charge is neutral. And in order not to have them run through the plate because they are small enough, they subject them…they put them under a very low temperature which is closes to minus 273 Calvin degrees.

Y: Absolute zero.

B: Yes, yes, very close to it.

Y: Very close to it.
53:53
B: Very close to it so they don't run through the plate. But they jump as close. So one day…one this provided because they are neutral electrically. They do not have charge. They are subjected just to gravitation. So what we will get is result of gravitation. And what we get is…they have…these are the plates. These are the neutrons; and here is an absorption plate which is capable of absorbing the neutrons. And so they jump like ping pong balls. And if the plates are close enough, they are absorbed by the absorption plate. If they…if the plates are further away, then they jump. So when we are moving the upper plate closer and closer to the other, then the absorption should be greater and greater because more and more neutrons will not be able to jump; but they will be absorbed once the upper plate will be close enough.

Y: (acknowledges)

B: So more and more and more should be absorbed, absorbed, absorbed. And what was expected was a continuous curve like this one in the…and this coordinate is the distance of the plates, so the plates…

Y: And this is the number of neutrons absorbed?

B: Yes, and this is the number of neutrons absorbed.

Y: (acknowledges)

B: But what they obtained is a step function. They obtained steps. So it is like you are moving the upper plate closer, closer, closer. But nothing happens. Instead of having the number of absorbed neutrons increase, nothing happens. And then, all of the sudden, an avalanche of neutrons are absorbed. And then you go further, further, further, further on, closer and closer to the lower plate. And again nothing happens. And then, all of the sudden, an avalanche of neutrons has been absorbed. So they…so the impact of gravity is quantum.

Y: Ok.

B: Quantum gravity is in favor of the discrete nature of phenomena.

Y: Yes. A graviton.

B: The graviton.

Y: I say graviton is a sub-state of a circuit.

B: Ah, yes, I remember. This one. Something…

Y: Yes.

B: And this is in favor of our discussion which we had whether for the second recursion we shall square the first crossover because it might be that, for instance. It might be that the probability for the second crossover to happen in the same circuit to be, maybe, bigger than the number which we will obtain by squaring this first crossover because it is the same circuit so to speak. But I was thinking about it; and I believe that we are right.

Y: And it would also be true for the third. Just cube it.

B: Yes, I was thinking about a state of affairs like this one. I presented it on sphere. I believe we should always deal with spheres because it is closer to the state of affairs. It is not a plane. We limit our perception when we put it in plane. So on sphere we have… For instance, we might have not a second crossover into the same circuit, but we might have another separate circuit, another mini universe, another baby universe. We have one baby universe here of… no matter how large it is with n individuals. And then we have another circuit which is separated from the first one. There is no state of direct knowledge between them.

Y: (acknowledges)

B: And we might appear because the probability allows us that we have also a crossover in this separate arrangement.

Y: (acknowledges)

B: By multiplying, we obtain this. But so, it take just one individual to choose to be in state of knowledge of the individual of the other circuit. And then, all of the sudden this is actually one circuit.

Y: Yes. I can see it.

Bret: It's not one circuit because it isn't a closed loop.

Y: It is one circuit because the circuit is not a circuit. The circuit is an arrangement in which…

Bret: This circuit gets all of these. But no one in here gets any of these…this because to that arrow.

B: But once if you have the non-physical picture behind it, once this is state of knowledge of this it…the reduction is superposition of all the states of knowledge of he's in, this particular individual is in. Isn't it so? Once we have one individual to choose to be in state of direct knowledge of any other individual, the separate circuit, then all these are superposed into the state, into the consciousness of this one. And since this one is in direct knowledge of this one, this individual which is previous to the referent also has superimposed all this as sub=states.

Y: That's the way I see it.

B: Yes. So it is one circuit.

Y: And that is the understanding of the direct knowledge and consciousness situation. If you don't, you have to apply that in order for this logic to be correct. If you don't apply it and just look at networks, it doesn't apply.

Bret: That wasn't what I said.

Y: A well, then… I didn't say you said it. I just looked at you because I got a similar argument here, from Punita. You can start here.

B: Yes, the potential value for the first circuit is this. For the first circuit (? 61:36) this and for the first circuit (? 61:37) this. Yes, I know these are different. I know they are different. This is what I was thinking. I start thinking in this lines because you outlined, I mean, you mentioned; and it is true.

Don: But it…the way that additional units…

B: Is due to the...

Don: But why the additional units of apparent time come into being is because of the sub-states. The way you were counting sub-states on the earlier page when you get the crossover, then you get the doubling of the sub-states. When you get the second crossover, you get the cubing. You get the square of those and so on. And that's explained here. That's what you explained in your earlier… earlier when you were talking.

B: Yes.

Don: But the number of…the probabilities if you look at the expectation values… I mean, these are right out of Baker's paper.

B: Yes, I know. Once we have…once you have a circuit, then the probability is greater or all the expectation number.

Don: You see, it doesn't…

Y: Yes, it's…the expectation number.

B: That's true, but that has nothing to do with this other argument.

Don: Well, either…well, this to me fits the sub-states of consciousness and what appears in the consciousness of the individual. And I still…you are going to have crossovers occur long before you are going to get the doubling or the tripling of the number of choices. It's a matter of when they occur and what occurs as a result of them. I mean your argument here depended on the fact that it would take a large number of choices to get to the second cross over. And it doesn't take very many.

B: Yes. You know in Baker's paper the second crossover is being discussed. But this situation is not being discussed.

Don: (acknowledges)

B: This is also second crossover.

Y: I agree. And I discovered this on my own not from Baker. I think Baker fell prey to the same oversight. And he didn't see it. And that is why he asked that question. Why 2?

Don: There are two questions here, Yogeshwar. One is just in terms of probabilities when will the second crossover occur. And that is described by the expectation values. And the other, then, is in the consciousness of the individual. How many perceived time units are generated?
Y: That's right.

Don: And this explanation…

Y: Is correct.

Don: Is fine that doesn't.

Y: Well, then…

Don: But the probabilities still remain of things occurring, still remain the same.

Y: So you're saying we should use the value for the second crossover and square it instead of the value for the first crossover and square it?

B: Not to square, just take it.

Don: No. I think the value for the first crossover and square it because that's the number of states that we are talking about.

Y: Because that is how much time apparently has gone by in his consciousness.

Don: Apparently, yes.

Y: Ok, I just…that answers my question.

Don: Yeah. But it is just to distinguish between the nature of the probabilities and the sub-states.

B: Yes. The sub-states.

Y: So where the first occurrence of a second crossover will be one time, of course, very different from the squared value of the first crossover.

Don: Well, if we look at choices, you know, it's…in one scale… it is in one scale. And we look at time perception generated, it's a… that discontinuous scale. It's a big step function.

B: Yes.

Y: I agree with that.

B: But in this picture, it is not taken into account that with the same probability the first circuit and the first crossover in the first circuit will appear. We shall also have another circuit with another crossover to appear. So either this will first; or this will first should we find out. This was not taken into account in his writings. And this might change the picture.

Don: Yes, I think it should be investigated, I agree.

B: And also we have, for instance, the choices of no knowledge also spend time to say, illusionary time. And we have some of our own, some of the states ceasing to exist which somehow we discussed. They also spend time, so to say. And they are not into the picture.

Y: They don't produce the illusion of time because there is no knowledge. So there is no consciousness from them.

Don: I was going t raise that yesterday. That is the one I took back. Then I realized what you are saying now.

Y: So I think that answers my question I was asking yesterday. Well, what do we multiply by what in order to get the time at the beginning of the squared universe?

B: Now by intuition, this is more frequent situation than this one. But this should be proved because there are not just two of them. There are…once the first will occur, this is probability. This is number of 10 to *e* to *pi*. This is…

Y: A large number.

B: A large number. And there will be baby universe, baby universe, baby universe, baby universe. And this either…whether this will occur…

Y: These are all monopoles.

B: Aha! these are monopoles.

Y: And there is billions.

B: Billions of them. And so, whether this will occur of the second…

Don: Yes, but we are going off the…

B: Maybe it is even the same probability. Oh, no! It's not the same because we have it here.

Don: That just after F-27 is the first one of these. So at that point there are no others. Then it's true. We may get an arrow like this. Or another one may form. And then the probability of that is increased. But there is this…that's why we have this big gap.

B: The distance is twice, actually.

Don: Yes.

B: In logarithmic scale because it is square.

Don: But there is this duration, you know, in between the two events. It certainly needs to be looked at more closely.

B: Ok, Ok. I, ah, yesterday I took this into consideration. This is why I was thinking over it. I have this picture, and this picture. And I was comparing these two, you know.

Don: (acknowledges)

B: It was illustrated by me. I had this in picture. I didn't neglect it, you know. I was thinking of it. I have two. And I have two. It might be difference between I have written. So it is not just neglected.

Y: Ok. Now, what do you want to do? Finish anything here?

B: I have, maybe, some time. It might be important in regard to these great formulas.

Y: The Compton wave length?

B: Yes. It was the Baker's handwriting because it includes Compton's wave length. His thinking is that he is observing one bit of time which is connected to the frequency. He says, "Everyone bit of time we…when we have x circling over the big circuit, when all of the non-physical individuals are involved, at this one bit x plus one circling over the smaller circuit, will happen in which this…

Y: I read that yesterday myself.

Don: Biljana, on transitivity. I was thinking that, that is a consequence of the fact that oneself and one's ability are not separable.

B: Yes.

Don: You agree?

B: I agree fully, yes.

Don: Because that's not brought out.

B: Yes I…it was when we were drawing this, you know.

Don: (acknowledges)

B: A → B• →C when defining time.

Don: Right.

B: We have this picture. So it is…

Don: But I think that is not explicitly stated.

B: Ok, Ok.

Don: As a consequence…

B: Ok, ok.

Don: And it's, ah, we get in a problem because of that separation.

B: Yes. I have also. It is amazing. We thinking the same thing, you know, because we come to that point. I was thinking about groups.

Don: (acknowledges)

B: Groups and about the logic, how to recognize whether this is a group. And, yes, it is a group. It is a group. I mean the set of non-physical individual in Lila is a group. This is why Lie groups which are a specific kind of group, including symmetry as you mentioned, could be applied in order to recognize quarks, for instance. There are green, red, and blue quarks. And these red, green, and blue quarks are actually isomorphic presentations of the Hamiltonian. This is what I understood by reading about Lila Lie groups. It is so; and it makes it very easy. I mean not easy your (?73:55). But still in principle, you know. Just the same, you had in one of your papers. You have presentation of isomorphic Hamiltonians. For instance, this spanning Hamiltonian and this spanning Hamiltonian which is… What is the name? Pentagram, and the other one.

Y: Polygon.

B: Polygon of five with directed relations are isomorphic. So provided we have…for instance, here we have a configuration which is related to certain physical particle, to certain subatomic particle. For instance, this is quark.

Y: Yes.

B: The isomorphic presentation of this one, isomorphic meaning it is likely it is rotated. Or some of them are extended and the other shrink. But isomorphic, the relations between them are the same, this is isomorphic. Isomorphic means the relation of each individual to any other non-physical individual is the same. This is what makes it isomorphic. And this is what we have in Lila. It is exactly what we have. We could…this is just like changing the rows and the columns in our matrix presenting the arrangement. So this is, for instance, I say, for instance, “This is green quark and this is red quark.” And it is the whole difference between them. This is what I understood. And we should read it once again, you know.

Y: How is the consciousness different? Or is it? Of course, they are not red and green. They just…how are they different? Is it just that they are different.

B: As I understood. And we should read it once again.

Y: I am not sure what Murray Gellman meant by the coloration.

B: Ok. Maybe I should know more about coloration. But when I read it in terms of symmetry and…

Y: I think that he was referring…

B: This is just change. They multi… Aha! Maybe slightly changed, not slightly because what is… They are then multiplied. For instance, this arrangement is presented with matrix. The mere fact that the elements of the set could be presented

by matrices, this mere fact proves/shows that this set is a group. And we have it already. We have it independently of all these Lie groups and constellations like this one.

Y: I don't think groups. Quarks come in colors. It's the arrow that comes in…

B: Ok maybe, maybe, I meant…

Y: It's the gluons. They are both the colors, the colored bosons.

B: Some particles which I have seen in papers may be isomorphic. Maybe they are not just isomorphic, but also multiplied actually by this *su* whatever it means. It is three-dimensional. So it is actually the symmetry. This is explaining the symmetry. And by multiplying our arrangement with the matrix which denotes a certain symmetry, we get another symmetrical to the first one. It is like mirroring this in a mirror. And these mirrors are different.

Y: Aha!

B: These mirrors might be…this mirrors are different. They might be convex, concave. They might rotate.

Y: I think that answers my question.

B: Ok. And this is what we do; not a great philosophy. They just multiply the matrix which is representing the subatomic particle. Ok, gluon, red one, and then they mirror it and it becomes red one. And in terms of mathematics, they multiply the matrix, which we do actually in our presentation, by a specific matrix which denotes the symmetry.

Y: Now, if you explain this to…

B: Concretely to a particular…

Y: …to a particle physicist who is open to the concept of the Lila Paradigm, he could take that and run with it and really develop it very quickly, I think.

B: For instance, if you have here one, one, one, matrix like this, and zeros here, this is a symmetry. Not this one because this will bring me the same one. For instance, I have one here. And this is what they are doing. I have one here and one here. And this one's here because this matrix is symmetrical. They introduce certain symmetry. And when I multiply the matrices related to a certain subatomic particle by this denoting the symmetry, I get another one which is actually symmetrical which is mirror image. It is a mirror image, only the mirror could be different. The mirror could be…
Y: Right.

Bret: Are there any ways to get mirroring of a sub-state from a static Lila diagram, from an extant diagram?

B: Yes.

Bret: I mean, this individual will get from this individual the same thing this individual gets. How do you get a mirroring of what this individual gets, in order for it to show up?

B: Ah.

Bret: I haven't thought of a way to do that.

Y: If I multiplied it…you see, you see, I could mirror it. Now there is a certain difference. I could just…I have shown it here for a very simple arrangement of A → B• →C. I have, for instance, an arrangement A → B• →C. And in this arrangement, I could change the rows. I rotate and put it here. And then I change the columns by the same rotation. And then I get isomorphic which is the same actual just differently.

Bret: I was hoping it was easy. This will have to be mirrored in some individual's consciousness which means there has to be…you can draw graph which show mirroring of some sub-state.

Don: I was just wondering, would something like this make sense if we have a referent individual and this was a quark pattern?

B: Yes.

Don: If he put his attention on this individual (n?81:20) verses this one, verses this one.

B: Aha! yes.

Don: Something like that.

B: Something like that.

Y: He would have a different state of consciousness.

B: Yes.

Don: Yes, but that's different colors.

B: This is different colors, yes.

Don: Is that?

B: In the perception of the individual?

Don: Would something like that?

B: One is gluon…red gluon and the other is blue gluon.

Y: Could be.

B: Yes, and it is so. We could…this is what I understood. I was reading (---?81:48)

Don: This would give you a symmetry if you were on this or this.

B: Yes. Symmetry. And this is…

Don: You would have a symmetry.

B: In the matrix, you just multiplied by matrices like this one which is symmetrical and you obtain the symmetry. And by having different matrices…this is what they mean by *SU* of this or *SU* of this. These are matrices with which they multiply in order to get a symmetry picture which denotes another color.

Y: To make that work, you have to have a matrix within side of a matrix for the sub-state.

B: Yes.

Y: You have to indicate the sub-state because what he was drawing there was a sub-state.

B: A sub-state yes, yes, we should have.

Y: And it would have to be in the context of the over…or maybe a bigger matrix.

B: Yes. And actually, the elements of our set, if we obtain it, if we visualize as groups in terms of Lie groups should be not non-physical individuals but matrices, arrangements, set of arrangements. This is a set, but every element of this is set itself is a matrix.

Y: Yes.

B: And this is the beginning of the mathematics. And I have done this also. I was thinking about this. Now this is another point.

Y: What is this?

B: First of all, we should recognize whether the set of non-physical individuals in Lila Paradigm is a group.

Don: (acknowledges)

B: First of all, the mere fact that an element…a set has matrices as its elements. It shows that it is a group. It is actually enough; it is equivalent to this notion. The notion we have a set of matrices, each set is a matrices, is equivalent to the statement that the conditions (for) a set to be a group are fulfilled. I'll put it another way. In order for something to be a group, three conditions should be fulfilled. If something is a set. We have a set of elements. For instance, the set of integers is a

group regarding summarizing. It should be always oper…in regard of an operation. So for instance, for multiplication in order something or in general in order something to be a group three conditions should be fulfilled. First condition A. I'll say in relation to B, in relation to C, this relation meaning operation, not in sense of Lila in general. If A B in relation to C is A in relation to B C, this is associative law. Then this is the first condition. The first condition is associative law which might be transitivity in our case.

Y: (acknowledges)

B: Transitivity.

Y: Yes.

B: So if A is in state of knowledge of B and this arrangement is in state of knowledge of C, it should be equal as A is in a state of knowledge of the arrangement B is in a state of knowledge of C. So this is first.

Y: Yes.

B: This is fulfilled. So this is associative law.

Y: Or transitive.

B: Or transitive. Transitivity, this is transitivity. And we stated this. And now the second condition is. We should have a neutral element. For instance, it should be…it might be, I don't state definitely. It might be A in self-enlightenment state, A being in state of knowledge of itself directly. I mean directly, directly, A to be in state of knowledge of A. It might be neutral, for instance. But now in general, let's go back to the general picture. In order for something to be a group another condition is A in relation to this neutral element, should be A. And B in relation to this neutral element should be B. Also this could be written another way. A in relation to B is A and E in relation to A is also A. Like, for instance, in multiplying one by A is A, A by one is A. So a neutral element in regard to multiplication is one.

Y: (acknowledges)

B: Neutral element in regard to summarizing is zero. A plus zero is A. Zero plus A is A. So this is neutral element in regard to that operation, always in regard to operation.

Y: Aha!

B: Always. I believe, in our case, it should be to be in state of direct knowledge. So we should find what is a neutral element. And third one is A in relation to the inverse element. And now is this neutral element. For instance, three multiplied by one over three is one.

Y: Yeah.

B: And now while I was talking, I had another idea. This is all the same as we have matrices elements. So the elements are always arrangements. These are the elements of Lila, not just non-physicals individuals. It is too general. It applies to set. But in order to have…group the elements are always arrangements of non-physicals being in states of direct knowledge. And now I even go further and state, and I am almost sure I am right, that our inverse element is the complementary matrices, the states of no knowledge. The potential to a fully enlightened universe is the inverse element.

Y: Un ha.

B: Over and over again while going through Lila, we were coming back to this, coming back to this, coming back to this because this is our neutral element. It is our inverse element.

Y: Ah! It's the…

B: And so we couldn't avoid it, couldn't avoid it because this is by itself. It is a group. By the mere fact that we have matrices as element, this is equal statement as the three conditions fulfilled. And we already have it because it is the nature of how things are in Lila. We already came to this. And over and over again, we were coming back to this statement because it is important because we need it in our mathematics. So I state that the inverse element in Lila Paradigm regarded as a group is the complementary graph. And the neutral element for that matter is a graph of all ones in which each individual is in a state of any other non-physical individual including itself.

Y: Where it is not.

B: Because G, Huh.

Y: This is a complementary.

B: This is complementary, you know. I'll…

Y: Yes. Yes, but…

B: This is complementary.

Y: But the one.

B: And this is neutral.

Bret: Identity.

Y: This is neutral.

B: This is neutral.

Y: Aha!

B: We need inverse element. We need two ingredients. One is inverse element. And the inverse element could be judged the complementary graph.

Y: I think your right.

B: Yes. I was thinking and thinking and thinking. I…

Y: It fits the theology correct.

B: Hum?

Y: It fits the theology correctly.

B: Yes, yes, yes.

Bret: Do we know what the operation is then? Something like one plus one is one. Zero is one?

B: Operation is n.

Bret: Yeah, yeah to fit that.

B: Yes, n. It is n, this and this, this arrangement and this arrangement. This is the operation. And we have transitivity here. And we have the inverse element. And we have neutral element. And the mere fact that we have matrix as an element makes it a group. So it is a group and because we relate non-physical…we relate subatomic particles it is even… It could be a Lie group but includes a kind of symmetry which we still have to discover for a particular subatomic particle.

Bret: It's not addition? 92:25

B: And we could…here since we are… we came so far. We might illustrate by an example. For instance, I have a simple arrangement, A is in state of knowledge of B, B is in state of knowledge C. Now G for this matrix, G for this arrangement is… So this is an element, not just A because it makes it just a set. This is a set, but it is too general. This set of non-physical individuals which is finite is a set and the set is finite but it is too general. But in order for it to be a group we should have something else. And these (else? 93:19) are arrangements.

Bret: Could you say that it is the consciousness that are the group?

B: We shall include consciousness when we shall state the transitivity is which is first condition to be a group. Transitivity is into the picture of Lila. Then we put this.

Y: That may need to be restated.

B: Ok.

Y: But it is separate, I agree.

B: Shall I draw this.

Y: Go on.

B: So we have here A → B• →C. And this whole arrangement A in state of knowledge of B, B in state of knowledge of C. The whole arrangement is one element of the group, this whole statement not just individuals.

Y: Aha! So we have a group of all arrangements.

B: Yes, we have a group of arrangements. And this is group. This is group. To be Lila group, not Lila Lie group. This is Lila group.

Don: Close enough.

Y: This is the mathematics.

B: This is the mathematics.

Y: Yes. I can see it now.

B: Yes, this is the mathematics and again and again and again and again. We couldn't avoid G.

Y: The complementary.

B: The complementary graphs, we couldn't avoid it. This is the mathematics. The mathematics requires it and the thinking. So we have A is in state of knowledge of B. So I have one here. B is in state of knowledge of C. B is…so I have one here. All the others are zero. Zero, zero, zero, zero, zero. So this is G. G complement or complementary graph is A → B• →C, A → B• →C. Whenever, I have one I have zero here; and the other way around. I have zero here and all the rest are ones. So this is the complementary graph. This is our inverse. And the relation is n. And we should have transitivity first. So transitivity should be applied now to arrangements, not to non-physical individuals. So consciousness is not…

Bret: Transitivity is consciousness, I think.

B: So this will be…

Darshana: I used to think that.

B: They shall think of it. And so we have… So G, nG, for now, I shall say n G and G complement is our neutral element which is A → B• →C, A → B• →C. Our neutral element is…call it E, for instance, or whatever, fully enlightened baby universe is one, one, one, one, one, one, one, one, one. And if we draw the pictures, we have done it, but once again. We have done it yesterday, I believe. For A → B• →C, the complementary is A in state of knowledge of A, B in state of knowledge B, C in state

of knowledge of C, C in state of knowledge of A, A in state of knowledge of C, B in state of knowledge of A, and C in state of knowledge of B.

Y: (acknowledges)

B: One, two, three, four, five, six, seven. The ones in the matrices, one, two, three, four, seven, five, six, seven.

Y: Yes.

B: So actually this is G. This is G complementary. And now for the…to have it complete the E matrix which is a fully enlighten baby universe is. A in state of knowledge of A, B in state of knowledge of B, C in state of knowledge of C, A in state of knowledge of B, B in state of knowledge of C, C in state of knowledge of B, B in state of knowledge of A, A in state of knowledge of C, and C in state of knowledge of E. And this is our neutral element.

Y: And everyone is enlightened.

B: Yes.

Y: This is what most people mean by God.

B: So maybe we should call it G matrix.

Bret: Then no one has ever experienced God because that isn't occurring.

Darshana: Or Yahweh.

B: Yahweh, yes, great, J.

Y: It could be. That's one of the options. But here it is a neutral element. And I don't understand all of the ramifications of the neutral element.

B: The neutral element is in sense that G and the operation and I, for instance, suppose for now, my assumption is that the operation is n. G and G complement… Or at least one element of the mathematics, you know. It is not the whole mathematics. G and G complement is this J which is the neutral element. Also G complement nG is this same J.

Bret. When we were taught it, they used the term identity operator, or identity matrix or identity element, different…

Y: Instead of an n?

Bret: No instead of neutral.

Don: No, as identity.

B: Aha! Ok, ok, maybe, maybe.

Don: Yogeshwar, God is the neutral element because it accepts everyone as they are.

Y: That's it.

Don: Well, but that's what it does. The neutral element combines with any matrix and leaves it as it is. So God accepts everyone as they are, their choice to accept or deny.

Y: Well, I don't know that God is accepting any body because God is not a being or a neutral element or an identity. Which is it?

Don: Well, identity element so that it leaves when it is combined with another element. It leaves it unchanged.

Y: Yes, that means it is not making choices. But it's not a he. If it is one individual that is accepting everyone, you would have a Messiah. But if every…but if you have everyone is accepting everyone as a neutral element, you don't have a being. You have a state of affairs.

Bret: Right.

Don: (acknowledges)

Y: And that is what God is when I say the totality of God. You got it. More?

B: No, no. just wanted to stress that what helped me is the notion that the elements are not the non-physical individuals. It is the set.

Y: Oh it's a set, a group.

B: We have, yes, a set of non-physical individuals which is obvious. But a group to be a group and to have advantage of all which is know for groups and to start building the mathematics, we should state that the elements are arrangements, baby universes.

Don: An extant arrangement.

B: Yes, an extant arrangement.

Y: Yeah, well, they did. They would be taken separately; they would be called a baby universe. Or in the context of the whole graph, they are sub-states.

B: Yes, yes.

Y: Ok. Wrap it up.