#5
Formal talk-22102006 Afternoon day 2
Lila recording day 2, afternoon
22/10/2006
061022001
App. 1 Hr 47 min
Recording 5

Y: You ready?

B: Yes.

Y: You on?

Don: Yep.

Y: OK. We are up to page 21. And

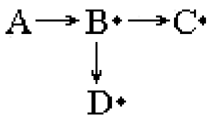
(Top of page 21 *The Lila Paradigm of Ultimate Reality*)

2.5 A Non-physical Individual's Consciousness of Bonded One-Dimensional Space

Now, usually we are in 3-dimensional space unbounded. Nobody knows about whether it is infinite of not. But it's bonded in the way that Einstein used the term.

: 44

In arrangement 2, the simple-physical-particles, B•, C• and D•, are not located within a *background* of space. In order for particles to be located at a distance from each other, those particles must exist at the same time in the consciousness of the individual who is conscious of those particles.



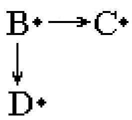
Arrangement 2

1:21

So, they have to exist at the same time. So, in our previous example, when we were working on time and we had just a linear arrangement A → B• →C•, B• was not at the same time as C•. But, in the case here, in the arrangement here, C• and D• do exist at the same time for A.

1:56

Because of the unity of Individual A, the conscious states due to A → B• →C•, and A → B• →D• reduce to the appearance in Individual A's consciousness of C• and D• at (as existing at) the same time, present time. (B• exists for Individual A as a conscious memory one unit of time in the past of this present time.) In the following arrangement:



which is B arrow C•, B• arrow D•.

2:47 *(Bottom of page 21 The Lila Paradigm of Ultimate Reality)*

There is no consciousness of time; and thus, no relative locations of C• and D• are possible in Individual B's consciousness.

Any problem with that so far?

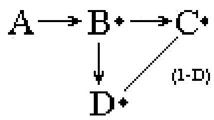
B: It is OK.

Y: OK.

In Arrangement 2, however, C• and D• appear in Individual A's conscious experience of present time (the overall arrangement) to be one unit of one dimensional (1- D) space from each other.

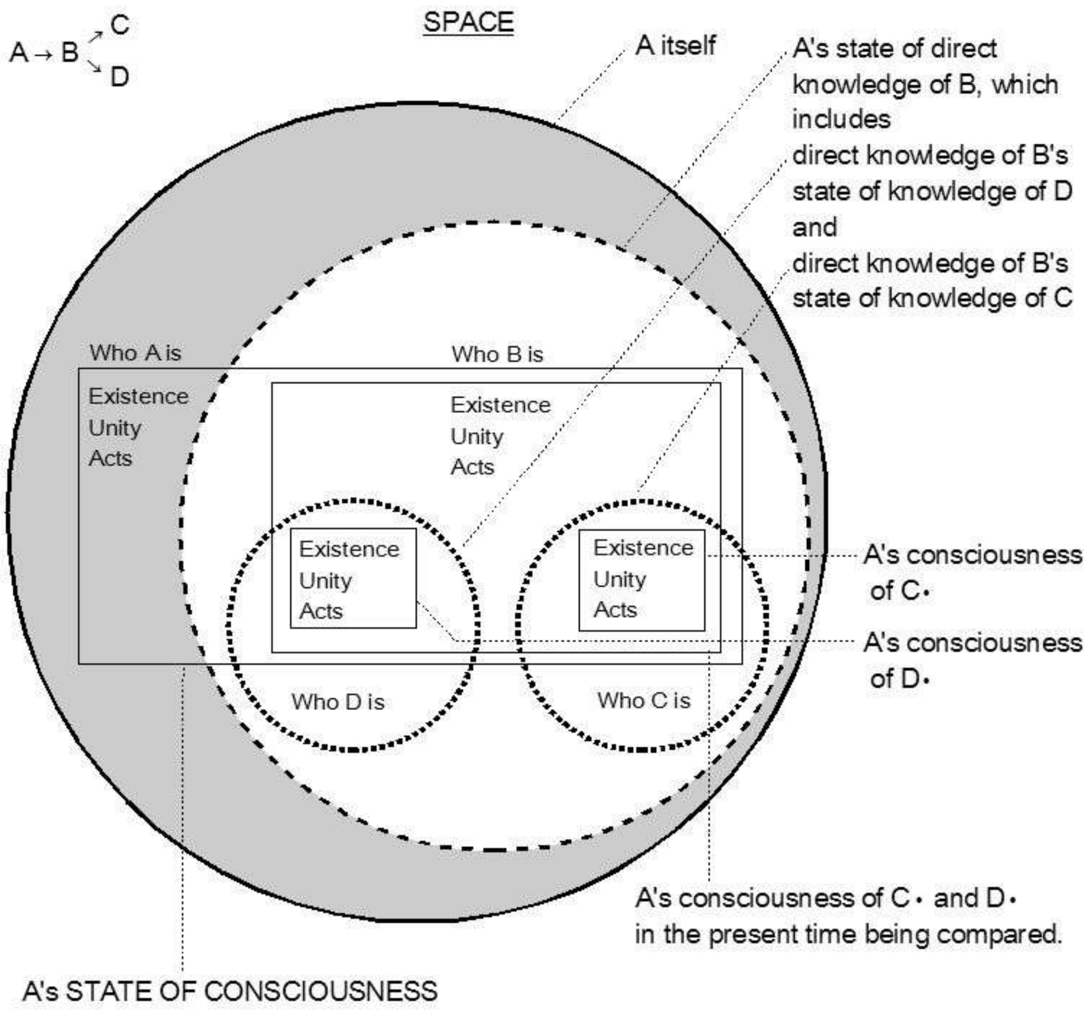
3:31

So using a non directional graph notation, one could then draw a line between the dot of C and the dot of D, using this as a non directed graph notation from a node to a node which is a particle to a particle. And you have one dimensional (1-D) space. But it is also bounded. It is not unbounded.



4:38

This difference in location *from* each other in Individual A's consciousness of C•, D• appears because of the comparison, due to the unity of Individual A in Individual A's single state of consciousness of the two different 'consciousness' of relation: A → B• →C• and A → B• →D•.



Content of A's state of consciousness:

Protofermions C• and D• as the termini of a one dimensional bounded space continuum one unit of distance apart from each other in what is the present for A.

5:19

So, those two consciousnesses are combined into a single state of consciousness which is in present time. So, this is a second way of combining or collapsing of a wave function. The first one was when we were dealing with just comparing an attribute of one individual in a state of knowledge with the ontological attributes of the individual in question. You follow that?

5:58

B: Yes.

6:03
Y: The second way was the temporal one in which we had two consciousnesses (one, the over all, and the other, the sub-state) which is a linear arrangement. But they were two consciousnesses that were brought about, of course, from the likeness of the attributes of the individuals involved.
6:32
But here, we have a bifurcated arrangement. And that arrangement involves two in the same present time, not like B• in the time one, was in the past; but this one has a different thing in which due to the unitaryness of A in which the states exist, these two are combined into a single state, a new state of consciousness, that is in present time. Those two, being in present time, are then related to each other.
7:21
But why aren't they just collapsed all together? It's because C• and D• are based upon two different individuals. This is where that difference comes in. That difference is what we call space. It's the illusion of space. There isn't any space. There is really just the difference between things that appear to be physical.
7:52
One of the biggest things that interfered… I think it was with this philosopher that speculated on this. Was it Hume or was it Spinoza? It was one of them who said, "The uniqueness of an electron is impossible unless there is something that is different about them." But they look exactly alike. They have the same charge exactly, the same mass exactly. And yet, somehow, they are different.
8:29
That's uniqueness or that difference between them. In its basic level is mat… We call it separation from each other, or a distance apart. In this case, the two particles are a distance apart. (Where did I draw that?) Here it is. The two particles are a distance apart from each other. They are not at a location in a background of space. They have a distance apart from each other. And that difference follows down, back down the tree to A, as consciousness. It is the consciousness of the difference between them, is the space.
9:32
Now, some people can see that after I have given that explanation. And I have found that some people can't understand it. Why should it be space? Well, they have got the wrong idea. They think that there is such a thing called space. There isn't such a thing called space. It is only difference. I like to see that head nodding. That makes me very happy.

B: I can do it more often. I don't do it every time I do understand.
10:00
Y: So.

> (Bottom of page 21 *The Lila Paradigm of Ultimate Reality*)
> This difference in location is the phenomenon of space, in this case of bounded 1-D space between C• and D• in A's state of consciousness. This phenomenon of space is the result of combining the phenomena of C•, D•,

I did use the word 'and' in there because it is not a combination of … It's not and, *and*.

(Top of page 22 *The Lila Paradigm of Ultimate Reality*)
due to the structure in Arrangement 2.

Further, in Individual A's consciousness, C• and D• appear to be located at the same time (in this case present time) at the termini of a continuum of 1-D *bounded* space,

11:04

So we have a continuum between these two that seems like there is the illusion of a continuum of 1-D bounded space.

with C• and D• being the point-like termini.

That's the terminal of that continuum. And this is the other end of the continuum. This goes right back to Euclid and shows what underlies geometry. I think it is worth the trouble here, at this point, to go through the next section on…

11:47

2.6 Consciousness from a Point in 3-D Space of Particles in that 3-D Space

But, before we do it, if you'll forgive me… Before we do, it I think we should… Well, if that was clear to you, we don't have to do it. I'll just give him this, and he can modify it and give us the diagram of what is happening inside of A. Inside, so to speak. Would it be correct mathematically term to call that space a domain of A?

B: Yes.

12:27

Y: Because A has command over it?

B: Yes.

Y: I don't want to use the word space.

B: Ah ha, instead of space, domain.

Y: Ah what?

B: You said…

Y: What kind of domain?

B: You… by domain, you mean…

Y: I mean this circle.

B: The circle. OK. Yes, domain. OK.

Y: It is under A's command. What is there is a state of him, or of it, of the individual. It is not a space; but it is a domain.

B: Yes, domain is mathematically term.

Y: OK. So, we'll go ahead then.

13:14 (Top of page 23 *The Lila Paradigm of Ultimate Reality*)

> In a circuit arrangement of nonphysical individuals with at least three 'arrows' extending across the circuit from *one* of the nonphysical individuals in that circuit, each non-physical individual in that circuit will be in a conscious state of being at a point in an *unbounded* finite 3-D space viewing physical particles located at various distances from each other in that 3-D space.

14:02

(YM draws on white board) Circuit, here is our hero here (H for hero). Now, each one of these is a different dimension of space. We count the arrow in the circuit. And we count the arrow across the circuit. We have a bifurcation. And then, if we count back in the circuit to here, we have A. A, H, L. And we have A, H, Q.

15:09

That's one dimensional space between this point and this point from what we just already did. But, anyone of these other points will do the same thing. Ignore these other two arrows for the moment. In other words, we can draw a line from here to here and have another one unit of 1-D space because we're connected all the way around here in present time.

15:43

Ah! The magic of the circuit. When the first circuit happened, it was like lights turned on in the universe. (People said, "Ahhhowwhhh!" Isn't that beautiful!) And they were having this wonderful time, on the one hand. And they were also trapped by it. But I am not worried about that at the moment. Right now, we'll worry about… There is another one here. There is another one here; and another one here. So we have little (n). And we have as many units of space as there are little (n) or individuals in the circuit. In this case, there was 1, 2, 3, 4, 5, 6, 7. So we have.

16:48

Darshana: Haven't you got one here too?

Y: Every other day, I think so, yes. That would be 7. Or would it be… I don't know. It is either 7 or 8. He is supposed to figure that out; or you are.

B: Yah, (n) the number of…

Y: units of ….

B: the relations in the Hamiltonian circuit, not the relations, the dots.

17:22

Y: Little (n) is number of individuals in it. So, how many patterns are there like this? A arrow B, C, D. How many sub-states like that are there?

B: In the matrix, I could show it very easily.

Y: You could; but you're going to give me a tutorial on this matrix because I can't follow you.

B: I could do it now…

Y: No, I don't want to do it now. I want to do it after we do this.
18:00
B: OK. Because on this, it is very easy to find these patterns. They arose...

Y: I appreciate your help. And I'll take it; but I want to do this first.

B: OK. This. This. OK.

Y: Because I only have so much to give in a day. (I am going to have to take a very short break.)

Bret: I certainly will want to discuss this with you, to see if it would speed up...
18:29
B: No. It is wonderful. If we are to do a program or at least start one, or just make a flow chart, then we should start from this, you know. Because this is the… It makes it very easy.

Bret: Yes. What languages do you program?

B: Pascal. I could follow the others also.

Bret: I write Java code primarily.

B: Java is beautiful.

Bret: But the algorithm, I can translate the algorithm.
19:07
B: If we could do... maybe we could do in (Cel, Cecil code? 19:19.) Is it a problem for you to do it in Pascal or Delphi.

Bret: I don't know Pascal Delphi. So I don't know if it's a problem.

B: OK. I'll (follow you?)

Bret: First off, we do have to explain the algorithm clearly enough, and then…

B: Maybe we should do first (animation?) in PowerPoint the way I did it? Because and then…
19:36
Bret: For teaching me, yes. However, we have to publish the algorithm so that others can review it. And then from that, it's a step coding into the computer.

B: OK, OK.

Y: Alright. OK.

B: I have to think about this.

Y: That's for one dimension. We have another arrow coming across over here to M. And that makes another dimension of space.
20:07
B: May I come to this side? Just for a minute to copy this.

Y: Yes.

B: To be sure it is. To have the same because…

Y: So we have an arrow going to M. Now, this is a definition of orthogonalness.
20:30
Bret: Orthogonality.

Y: Orthogonality is that this… the space created by this dimension and the space created by this dimension are at right angles to each other. We say, because the space is totally different, because it is going to a different individual and as different as you can get in space, that difference between one individual and another creates orthogonality.
21:12
And the same thing is true on the next… we have got three dimensions in space there. And each one of those gets so many units or 1-D space for that dimension. So, if we are talking about 3-D space, what we have to do is to take (N) and cube it for 3-D space to get the number of lengths. Now, if you want how much volume we have got, you have to take the cube root. Or something like that. (I can't keep it straight right now.)
22:02
B: So what makes this space to be unbounded is the circuit… which makes it unbounded.

Y: The circuit makes it unbounded. It goes around the circuit. And when you get there, it's unbounded. It's like going around the earth. And you come back to the same place. So nobody counts on the physical level… that it's going any further. You go around the earth once; you have gone around there once. But if you go around again, you are going around again.
22:30
So it not like space is continuing on and on and on. But for the non-physical individuals, there can be the concept of it going around and around and around and around without limit. And that's infinity.
22:57
B: May I say something? When I was thinking of explaining this to myself, I thought it might be useful. (Maybe, maybe it is not.)

Y: To have a cylinder.

B: To have a cylinder. And then when I have a cylinder, then the basic circuit is this one. Then the bifurcations could be…

Y: The what?

B: Bifurcations.

Y: The bifurcations.

23:21

B: The bifurcations could be expressed at another level. And this gives dimensionality, the perception of dimension to be grasped easily.

Y: Well, as long as you realize that there is no cylinder.

B: There is space, no cylinder.

Y: There is no volume there because this is an idealized thing. And it assumes infinity. And so it can't portray what we call the physical world accurately.

23:58

B: But it is easier to understand the concept of unbounded.

Y: But unbounded… it would be a good device for understanding, I agree.

B: Yes, yes, only for understanding. I don't perceive space here or something, no.

Y: OK. Where did we leave off? Ah, yes.

24:30

> This three-dimensional conscious state for each non-physical individual in the circuit appears, again, because of the unity of each non-physical individual which subsumes the 'consciousness' of 1-D space due to each of the three 'cross-over arrows,' which merge those 1-D spaces into a single state of consciousness of that unity forming an orthogonal 3-D space based on the difference of *who* the three non-physical individuals are to which each of the arrows point. Because of the circuit arrangement, the 3-D space is unbounded in the consciousness of each of the non-physical individuals in or connected to the circuit.

24:60

So, they each would experience it because they are connected to it…and also if someone was connected like this. (What is this K out here?) He experiences it too. But what he doesn't do is… he doesn't experience himself as if he were in the space. Only those that are in the largest circuit experience it as if they themselves are located in the space viewing from that point; whereas, K is just conscious of the 3-D space. And he is not viewing it from anywhere. When I saw that, I thought, "Isn't that something!"

26:15

B: Yes, it is! A should have a feedback through the circuit in order for it to have perception of its position in space.

Y: Well, they're connected to it… connected to all their states' knowledge. And therefore, you're not consciousness of their consciousness. But you are in a state of knowledge that they are in. And then, you form the consciousness of how it looks to them, but from where you are in that space.

26:25
B: It is this final arrow pointing to A which does this perception. I mean if…

Y: If A…

B: If A… it couldn't be closed. If this final arrow…

Y: It closed. If this arrow does it. …

B: Then it should have been… It shouldn't have been…

Bret: Present time.

B: Unbounded.

Y: You mean if this wasn't there?

B: If this arrow should have been rotated like this, and if this arrow would not have enclosed the circuit, then…
27:39
Y: Yes. Then this goes out here to R.

B: Yes. Then A… there is also bifurcation. Then this is one before A. Then this is one before A. Then this is… no, no … this…

Y: Yes. And it's all bounded…
28:05
B: 1-D to A. But there is no other perception because it has not have feedback from the others to see how the others, I don't want to say experience, but have consciousness of it somehow. Because this final arrow which closes the circuit, it is this. (What is the word for not the final but before the final?)

Bret: Penultimate, last.

Y: Penultimate.

B: The ultimate.

Y: *Pen* ultimate, one before the final.

B: One before the final is?

Y: *Pen*.
28:54
B: Penultimate. So this is the way how this penultimate non-physical individual is in a state of direct knowledge of A. And together… at the same time, together, of being in the state of direct knowledge of A with the power of it, it is in the state of direct knowledge of the state of affairs for A or all this together.

Y: I agree.
29:24
B: For this individual, for this penultimate individual. So this is of importance, so finally. Not finally, finally implies time. But nevertheless, I should say some how so A… so when this closes, we have quite difference situation because now A has consciousness of…
29:53
Y: Strictly speaking, this doesn't close because this goes to R; and this one has to go to A.

B: Yes, yes. This is another one. Yes, another one. I mean, if we add this final arrow to the arrangement.

Y: Yes. That's right.

B: Then we got all at once.

Y: (A space?) 't Hooft - inflation.
30:17
B: Yes. And in this curves and in these magnitudes, this should be a specific point of the magnitude because in the beginning… I don't want to use all these words implying time… But we have this, and this, and this, and this, and this, and this. But when they are enough… dense enough, when we have enough… number of…

Y: When connectivity is sufficient.
30:48
B: When connectivity is sufficient, then all at once… although this all at once implies time.

Y: It is almost at…

B: We have this. And we have time, perception of time…

Y: Yes, exactly.

B: And we have this. And we have perception of time for this. And we have this. And we have perception of time of this individual. And we have this not closed, and perception of 1-D space for A, 1-D space for A, 1-D space for A. And then (although then implies time again), finally, when the connectivity is dense enough or (what was the word you used?). Then the circle is closed; and then, all at once, we have unbounded 3-D space.
31:37
Y: Yes.

B: And this is a specific point here and could be computed.

Y: It is. And we have calculated it, Michael Baker and I.

B: Because I have seen here, for instance, the magnitude. This is a specific moment when time begins to exist. And this specific moment is when a…
32:00
Y: the moment when time begins.

B: Yes, yes. I am aware. At least I am aware; at least I am aware of it. Until I evolve and (find) other word for it.

Y: OK. It is hard to break it. But when you break it, there is a certain liberation (that) comes with it, because you get free of time.

B: Yes, yes. So I have to find another word for…
32:26
Y: When this happens, the change of this happens, how many arrows have to be added to (N) nodes in order to expect that there be at least one of these, is the square root of 2 (N).

B: (acknowledges)
32:47
Y: That's the probabilities. Then you will get one of these. And when you get that many, the square root of 2(N) more of them, you will get another one. But then it begins to break down. But if you take any sub-state like this, the ones that know. We have the formula. He has called it the F formula for what it is for 3 arrows, what it is for 4 arrows, what it is for 5. And it's those values that gave me the way to shape this curve of inflation.
33:24
Bret: I simulated that didn't I? How did it… Did it correlate?

Y: Well, I showed it on the graph.

Bret: Right.

Y: It shows the one that they get from the Grand Unification, yes.

Bret: That's theirs. I am asking… I simulated that. And did my results correlate with that? You looked at it.

Y: It didn't cover enough territory to be able to tell.
33:48
Bret: OK.

Y: But like this is…

B: So this…

Y: square root of 2(N) here.

B: Yes. This structure appears when the number that is given to us is 10^{12}.

Y: 10 to?

B: Because this is logarithmic, a logarithmic presentation.

Y: It's logarithmic both ways, actually.

34:06

B: Because this twelfth should be the degree of… because it is logarithmic, it should be the degree of some basis being 10 non-denials, yes. This means arrows. So this is 10^{12}. Is this correct? When the number of non-physical becomes 10^{12}…

34:34

Y: Yes. But I have labeled this as the log of time. So I am just giving the exponents.

B: But there are two waves here, this ones, which are the… I have written in the non-denials. I should check with you. And these ones which are the…

Y: the seconds.

B: seconds.

Y: Yes.

B: The seconds from the big bang, or what (something like).

35:03

Y: But I have defined what T sub Q [T_q] is. It's the Planck time. And that's how I am able to relate it to the second scale. But I see what you are driving at. But I am just trying to say how we get these points, 3, 5, 6. We get it off the formula. We have the formula which is given in *Radical Theory*. And it is very interesting that this is a monopole. You heard of magnetic monopole?

35:55

B: At the moment, I couldn't remember. What is this expression?

Y: Yes, magnetic. It was worked out by a physicist t' Hooft, the Dutch physicist. Magnetic monopole. That if you had a single pole that is magnetic, you would give magnetic and, therefore, electric charge to everything. Everything gets exactly the same charge. And they have looked for these monopoles and couldn't find them. They thought that all that needs to be and the whole universe. And that will give electric and magnetic charge to everything.

36:47

But they will never find it because it doesn't exit in the physical world. This is all nonphysical. And this is the magnetic monopole. And when you cross it over, it creates electric charge when this arrow comes across here. Not only does it create space, but it creates electric charge. And this is minus charge and this is plus charge. So this is the anti particle over here, the one that does the choosing to cross the circuit. And this becomes an electron. In order to get quarks, you have to take all three of them. Then it becomes a quark. And you get 1/3 charge.

37:58

Now, to work out the details and the math of all that, I need (some) help. I don't know if… I doubt if you have enough knowledge of particle physics to do

it. But you might know somebody that does. Or we might be able to find somebody who does know enough to see how the particle physics works out.
38:25
B: Is it to much to grasp to learn what is needed for us to be able to proceed in this direction?

Y: I…

B: I have mentioned to you if we are preparing a paper, it could be in Artificial Intelligence and in the sense to show how to escape, how to transcend the limitations of Gödel theorem. And this is what I could do, right now.

Y: I understand.
38:56
B: But, we could also prepare a paper for particles in this direction provided I learn what is needed. Is it to hard to learn what is needed to come to (a) stage that I could proceed? Is it too much?

Y: I don't think so. I think you can do it.

B: Then I am ready to do it.
39:17
Y: I am just giving you… to give you a scope here, a perspective. I am not…

B: Maybe we should provide one session just for this. Is it too much for you? One session of two hours or two sessions to have the basics of particles of physics?
39:34
Y: We need to try one thing and add a little more for something else. And then come back around and get the matrixes. And then get something else. And then say, "How is that going to solve this problem?" And that is why we have got several weeks here to do the work.

B: OK. Great. Because I have a fully understanding of Schrodinger's equation. I do. This is what I do. So I have an idea…
39:58
Y: You do understand the equations. I just didn't know how much you know of particle physics.

B: For instance, I am familiar with Einstein, Podolsky, Rosen experiment. This is what I teach, actually, the experiment and the application.
40:13
Y: But not with standard model of particles.

B: What I state is there are two particles; and they are going apart from each other. But they are… because once they have been connected, they are described with only one proxy wave, with one unique Schrodinger's equation.
40:35
Y: Well, you do understand some things. I think we can gradually work it.

B: And then Bell, George Bell who is scientist from CERN wanting to… actually, to prove Einstein's theories…

Y: Yes. I know Bell theorems.

B: Yes. He invented the Bell theorem. But I have gone further on and find out by some help of other scientist that there might be a conceptual error in the whole arrangement of the experiment and this leads to conclusion that when this conceptual error is due to us working with contextual properties of the material objects, in this case subatomic particles, and not with informational ones. And it could be described in terms of Lila Paradigm as far as I see it. Maybe, if I tell you the whole thing how I do it… to understand it.

Y: You explained yesterday about contextual.
41:49
B: Not for Bell and for the possible conceptual error in the arrangement of the Bell's experiment. And this is what is easily explained as far as I could see it, from the… in the terms of Lila Paradigm. So, maybe, sometimes, maybe, not today. And if you want today, it…

Y: Not today.
42:12
B: will be of interest to explain to you how do I see it. How do I see it. I don't…

Y: Today, I just want to give you the outline first.

B: Yes, OK.

Y: And then, once the outline is done, then we can attack it from this point and this point, this point, this point, that point.
42:34
B: Yes. But I don't want to give up form (on) this possible paper, or whatever, just because of the insufficient knowledge in particle physics. Yes, it is insufficient in the point. But I don't want this to be barrier for me in order to advance further. If my insufficient knowledge of particles is a barrier, I could transcend it by learning.
43:01
Darshana: A barrier.

B: A barrier.

Y: I understand.

B: I mean, I don't want to give up this direction of research just because, at this point, I don't have sufficient knowledge in particles.

Y: Well, I haven't given up. And I have hit a barrier; and I am going on anyway.
43:22

B: OK. I needed to communicate this because it is something which is very close to me. It is something a little missing for me, at this point. And I believe it could be clarified. In order to go on, to be able, for instance, to do this once again by myself, I want to reach this point when every little thing of this diagram will be clear to me.
43:53
Y: We will do that before you leave.

B: OK.

Y: All of them and this is part of my effort to do so.

B: OK.

Y: I want to do a little more.

B: Because I don't know this monopole, for instance. This is new for me. But…

Y: You don't know what?

B: This magnetic monopole, you mentioned.

Y: Marbel??

B: Monopole.

Y: Monopole. Yes. That is why I ask.

B: So.

Y: But I have got a paper on monopole. But it's written for other particle physicists. There's the monopole.
44:38
B: OK. This is flux?

Y: Those are tubes.

B: Flux or what…

Y: Yes. Flux tubes. But what the flux tube is, in terms of the Lila Paradigm, is just the arrow across the circuit.
45:05
B: Ah ha. So this helps me a lot, really. You view this as flux, for instance.

Y: Yes, I said, that that brings electric charge between those two.

B: This flux is intersecting something in order to produce an electromagnetic field.

Y: Yes.

B: And what it intersects are these arrows.

Y: Well, he explains in the paper.

B: OK.
45:37
Y: It is a long story. And I don't want to go into it right now. OK? Let's go on with the text of the paper we are trying get through here. This paragraph.

> (Middle of page 23 *The Lila Paradigm of Ultimate Reality*)
> This phenomenon of viewing from a physical point, which is not a physical particle, in space tends to convince the nonphysical individuals in the circuit that they are located in the common space and time of the circuit, each at their own location in that space, each in their own sequence of temporal history, and each in common present time. Being so convinced, the nonphysical individual tend to consider themselves to be physical beings instead of knowing they are nonphysical, even though those who are placing themselves in a state of knowledge of themselves may also be conscious of themselves as nonphysical individuals.

46:44
So people such as you, for example, know yourself to be a non-physical individual. But it seems to you, perhaps, that you are located someplace although intellectually now you know better that you're not.

B: Yes.
47:00
Y: But you can get over it, by accepting others. I just threw that in there because I thought people might, like professors of philosophy… might realize something about themselves. You know, they study everything else. But they say, "No, no study of myself." No first person self-inspection. No enlightenment intensives. Don't talk to me about it. "I deal with the real world," they say. You know that they are like that.
47:38
B: Yes, very well.

Y: So…

3.0 A Few Examples of Computations of Magnitudes

Section 3.0
47:48

> 3.1 The Magnitudes of N, K, and n

So you have been over this somewhat in the other paper. But let's go through it.

> It turns out that labeled *directed* graph theory accurately and mathematically represents the compositional patterns (arrangements) of the paradigm offered here.

Whereas, you are mentioning that the matrix may be a better one; and it might be.

48:20 (Middle of page 23 *The Lila Paradigm of Ultimate Reality*)

> The key magnitudes in a directed graph are the number of nodes N, which represents, in this case, the number of non-physical individuals; the average number of directed arcs (arrows) per node (K), which represents, in this case, the average number of states of (direct) knowledge per non-physical individual;

(it) should say direct knowledge.

> and, the number of nodes (n) in the spanning Hamiltonian (here, (called) the largest circuit).

49:13

Now Hamiltonian theoretically goes through all of them, through every member of a set. But a spanning Hamiltonian is a technical term from network theory. (It) means that it goes through all of the ones involved in that subset, in any subset.

B: Sub-circuits, actually, sub-graphs.

49:50

Y: Yes. But Hamiltonian, spanning Hamiltonian, is the largest subset that goes through all of them in that subset which is how we have defined it here.

> In this case, (n) represents the number of non-physical individuals in that largest circuit.

50:08

You can draw circuits in a number of ways by changing the order of the individuals in it. You can get a number of large circuit, largest circuits that have the same number. By changing the order, this becomes a cross over. And this cross over becomes a member of the circuit.

B: Which is done here, actually.

Y: This is…

B: This is the same.

Y: These are two, the same. Yes.

B: Yes.

50:42

Y: But this doesn't show you which, by visually, which are largest circuit and which is not. But I have an example. I took one of about nine and I redrew it about 4 different largest circuits with different ones being cross overs, and different ones in the circuit without changing the connections at all. So, there are several largest circuits. I am just mentioning that.

51:13

B: Actually if you watch… if you look at this largest Hamiltonian, or Hamiltonians strictly speaking because the others are spanning Hamiltonians… so this Hamiltonian could be viewed (perceived) as (a) separate graph. And every isomorphic graph to this one is actually the same Hamiltonian.

Y: Yes.

B: This could be done by this…
51:53
Y: I imagine that you are drawing… Is this a directed graph?

B: For instance, this is …

Y: Is this a directed graph or a non-directed graph?

B: It could be both. Let it be directed.

Y: OK.
52:06
B: So this, by capturing this node here and taking into the third dimension and putting it here… for instance, this is 1, 2, 3, 4, 5. Then I could redraw it 1, 4, 2, 3. And this 5 could be put here, 5. And I have 4 to/4 to 1, 5 to 2/5 to 2, 3 to 5/3 to 5, 1 to 3/1 to 3, and 4 to 1/ 4 to 1, and 2 to 4/ 2 to 4. So I have this presentation, and this presentation which are isomorphic. These are isomorphic graphs. So, I could do it in many different manners.

Y: Yes. I see that.
53:13
B: I have animations here in my laptop for isomorphic graphs doing this. And maybe we could find it.

Y: We will look at it later.

B: Later, OK. So this Hamiltonian and this Hamiltonian are isomorphic.

Y: I see. And it's a whole study that you are familiar with.

B: Yes.

Y: That's good.

B: And this would be easily done with matrixes.
53:39
Y: Good. And this is important and I'll tell you why. Because the… instead of it being just one circuit, it's like a wreath. You know wreath, Christmas Wreath?

B: Ah ha, wreath.

Y: Where there is a number of them.

B: This is like classic periodic movement.

Y: No. Not just like that, like this. (YM draws a picture to demonstrate.) This goes around like this. And another one goes like this. They intertwine. And there is probably… I estimated it one time. There 10^{16} of them that…
54:27
B: which are connected somehow…

Y: And they are all interwoven because… and that they affect the amount of the electric charge because this is a cross over. And it forms electric charge. Now the value will be changed by… in about the 7th or 8th decimal place.
54:55
B: In about??

Y: The value, the magnitude of the electric charge, if we were calculating it, will be changed in our calculations from just one circuit. But if we take into account all of these, then it will change the value we calculated (or the magnitude) of the electric charge, by… in about the 7th or 8th place. And this I have trouble with because the measurements that they make and mine start to vary in the 7th or 8th place. So, if there were some way that we could mathematically take that account, then I could get it out to 23 places. That would be the ultimate science because it couldn't go any further because that's all the places there are to go because that's how many individuals there are $10^{(23)}$.
55:54
B: Do you want to correct the accuracy by introducing the other Hamiltonians?

Y: And that each one of them become… Yes. And each one of these calculations becomes a prediction in advance. So I can say, "The next places you will find 2418." And they would measure it and wheel the big machine and spend a million dollars. And they find it is 24, or maybe 25. So I was right about two things (places). And then I can say, "The next three that you will get will be this." So I'm making predictions that can be checked. This is important for a theory to be valid. To become a paradigm is… you have to make predictions that are measurable. And this is one way to do that. I am not asking you to solve it.
57.00
B: No, no. I just want to say if it is to done with matrix, in matrixes this is isomorphic Hamiltonians circuits could be found by doing linear…legitimate transformations.

Y: I want you to give us.

B: Changing the rows and changing the rows and changing the columns.

Y: I want you to give us a lesson on matrixes now. Will you do that? I said we would take the time to do it.

57:30
B: Now?

Y: Now, the time is to do it. We have about an hour.

B: Now. Ah ha, OK. I could explain to you these arrangements. This is what I have done. Is it Ok?

Y: No, I don't understand it.

B: I'll explain it to you very easily.
57:47
Y: I understand that this is the individuals and this is the individuals. But it seems like you have the same individual twice. So is this the individual or is this the individual?

B: This is the same individual only the representation is spread out on plane.

Y: If I took an individual and put him on a plane, I would have to cut him in half to put him some place else.

B: No. This is just…this is as if you put a mirror here. And this mirror is somewhat distorted; but it is the same information. I don't say, "There are two individuals or the individual is split." The individual has the attribute of unity.
58:28
Y: So you take a photograph of them.

B: Yes.

Y: And take another photograph of the same individual and you put one photograph here at right angles to that…

B: Exactly.

Y: So what does it mean you put them at right (orthogonal)?
58:45
B: When I… then I think easily what is going on. Then this which was difficult to find, this structures, these un-dimensional structures for which you said… you told me to find them. It was not easy for me to do because it is not easy to do. But I could do it easily here.

Y: Yes.

B: Here it is very, very, very, easy.

Y: Yes. I did it like this. And I didn't even know what I was looking for.
59:10
B: But you know. Just seven days after you send me the first material, the first paper on *Radical Theory,* I worked for fourteen hours without break. And then

in these fourteen hours I have designed this. And just in seven days, I send to you all these structures.

Y: You send it.

B: All these structures. And it was very easy for me to find.
59:38
Y: I followed them; but I didn't know what it meant.

B: And now, I'll tell you what is meant.

Y: OK.
59:46
B: It is very easy. For instance, you have a very simple graph, this, this, and this. We have a directed graph like this, no matter what does it mean.

Y: That's right a graviton.

B: Graviton. Yes, great. But you should have a circuit. Isn't it so?

Y: In a circuit. Yes.
1:00:06
B: In a circuit. So without it, we have this: A, B, C. And now I present this with a matrix. I have A, B, C, rows; and I have A, B, C, columns. And I say, "Here I see A is proceeded..What is the opposite of proceeded?

Bret: Followed.

B: Followed. A is followed by B. Or to be precise A is pointing to B. Or A is in state of direct knowledge of B.

Y: Yes.
1:00:41
B: So if A is in state of direct knowledge of B, I put here one. No, A is not… A is state of direct knowledge of B, so I put one here. A is in state of direct knowledge of B. (A →B→C)

	A	B	C
A	0	1	
B			
C			

Y: Yah, I follow that.

B: But A is not in a state of direct knowledge of itself. I don't have this one. So A to A is zero. There is no…

Y: So I am trying to see…

B: Point here, so…

Y: I am trying to see what we're dealing with.

B: This is zero.

Y: We're getting… the information you have here is what states of knowledge that they are in.

Bret: Connectivity.

B: Yes, I am. See further on. It's very easy. A is in a state of direct knowledge of C.
1:01:40
Y: But you could put it the other way around and have this be the...

B: Yes, yes. And I have mentioned to you several times. I have mentioned, maybe, this is not the best way. Maybe, the best way is rows to be columns and columns to be rows.

Y: Yes.

B: So, maybe this is so.

Y: So, you have to let…you have to put a label on here to say. You just can't have a graph like that. You have to say what this means.

B: Yes. I have to say. Yes. It shall be.
1:02:09

Y: But just like on a regular graph, you have to put what is this ordinate and what is abscissa. You say this is space and this is time. Without that, it doesn't mean anything. But every matrix I see doesn't have anything like that. It just looks like that.

B: Yah! Ha, yes, because I was rushing through.

Y: Not just yours, everybody's. Heisenberg's…
1:02:36
B: To give you results. Because this is not something I have invented to represented graphs with matrixes. It is not something I have invented. But to find these structures, this is something I have did. And I was rushing to show you my results. Not somebody… not common knowledge.

Y: Well, OK. You didn't know how ignorant I was.
1:02:59
B: No, no far (~~away~~) from it. So B is in state of knowledge of C. So I have one here. B is not in a state of knowledge of itself. So B to B is zero. B is not in the state of knowledge of A. So B to A is also zero. And finally I come to C. C

is not in a state of knowledge of itself. So C to C is zero. C is not in a state of direct knowledge to A. So C to A is zero. And C is not is a state of direct knowledge to B. So C to B is also zero. So this is a way to show this directed graph. A →B→C

Known→	A	B	C
Knower↓			
A	0	1	0?
B	0	0	1?
C	0	0	0

Y: Alright. Could you put a label here, and a label here to say?

B: Yes. I am thinking…

Y: Don't put row and column.
1:04:00
B: This is proceeding node and following node. Maybe, this could be an explanation: proceeding node and following node.

Y: This is the proceeding node, and this is the following node of that arrow.

B: Yes, yes.

Bret: Chooser/chosen.

B: Or, maybe, choose. Or, maybe, in terms of direct knowledge.

Don: Knower and known.

Y: That's better. Put that.
1:04:21
B: It is better. So we could… these are the sources which were (are) in the state of knowledge.

Don: The knower.

B: These are the knower's.

Y: The knower and the…

B: And these are the known

Y: These are the known. Alright. Now, we're home. Now I can… You see…
1:04:43
B: And now, this is a Hamiltonian circuit. No, this is not a Hamiltonian because it is not closed. But, for instance, if I had Hamiltonian like this… this is a Hamiltonian, spanning Hamiltonian circuit. Then if I present this with a graph, then I could just play with these columns. I could just change the sequence of

columns and then change the sequence of rows, and this is as if I am playing with this one. I have… this. I could put this here and have this graph. This spanning Hamiltonian which is isomorphic to this one…

Y: Yes.

B: If this is A, B, C, D, now this… C, B, D, A. A came here. And I could do this very easily with graphs by changing the sequence of columns…

Known→	C	B	D	A
Knower↓				
A				
B				
C				
D				

Y: With the matrix?
1:05:45
B: With the matrix and the rows. So, I have done this for the arrangement shown here which was in your diagram. Also, you remember, Don, I have point you out that there are two links missing?

Don: Yes.

B: This was very easy for me to find out, not because I was searching through it differently than you did.

Y: You're right.

B: And the difference is I was checking just the degrees of the nodes.

Don: (acknowledges)
1:06:17
B: And this is very easy to find then. If you check the relations (the arrows), it is very difficult to find. It is almost impossible.

Y: It sure is. You can't remember them all.

B: You can't remember. But if you check the degrees and the degree means the number of arrow pointing to a non-physical individual and the number of arrows arising from a non-physical individual.

Y: (acknowledges)

B: If I look for a specific non-physical individual and I just count the number of arrows pointing into it and…

Y: The degree in is two and the degree out is two.
1:07:00

B: Yes, the overall degree of non-physical individual A is 4. And these are two going out, plus two coming in to it. The underlying undirected graph has degree 4. The underlying… or as you said it, is not underlying but actually… I remember you writing here. Or I read somewhere that the common perception of graphs is that under each directed graph, there is underlying non-directed graph. But you said they are not able…

Y: No, no.
1:07:45
B: to come to the Lila Paradigm because they are looking at the graphs this way. But the way they should look at the graphs is the other way around.

Y: That's right, I remember. I wrote that to you.

B: And this is a great point. I like this very much. This is a great point because, yes, in every book about graphs, you will find that the non-directed graphs are underlying the directed graphs. But people thinking this way. They could never come up with Lila Paradigm.

Y: That's right.
1:08:13
B: This is a great insight. So the degree of the underlying (speaking now in language of this ignorance) is four for this node.

Y: Yes.

B: And if you find out the degree for every node, then you could easily do the isomorphism.

Y: (acknowledges)

B: Isomorphising graph. So this is what I have done with these matrixes.

Y: You also suggested that you have one, accept himself.
1:08:48
B: Ah, yes. Oh! Great you remembered this! Yes, because you should have… because otherwise on the diagonal, you get only zeros, because no one of these non-physical individuals is in state of direct knowledge itself. There is no such individual which is state of direct knowledge of itself. So the diagonal is 0, 0, 0, 0, 0, 0, 0, 0. So what do we have here? A is (hold?/known?)W. Let us check. A is (hold?/known?) by W. Or A is in state of direct knowledge of W. So this gray or one; and all the others are zeros. W… and here it is easier to see, W is in a state of knowledge of [I]. So this is gray 0, 0, 0, 0.
1:09:51
Y: OK. I understand how that works now. But...

B: Yes.

Y: So what?

B: So it is easier to find Hamiltonian. I could find Hamiltonian here.

Y: Where is it?

1:10:04
B: I'll show it to you, all the spanning Hamiltonian. And I have done it with animation in Power Point presentation. We shall come to this. But, yes, this is the arrangement. It could be changed. I put it this way to be visible what follows what. But, for instance, it is easy now for me to find one dimensional unit/space in the consciousness of some individual. And how do I do this?

Y: Alright.
1:10:44
B: For instance, let us see at L. Let us look at L. L… Now first of all, the rows and the ones in the rows are showing the relations arising from a particular non-physical individual. The rows…

Y: So that's a… the known?
1:11:10
B: Yes. To L which individuals are known to L. To L the individuals known to L are P. LP, LE, LR. There are three LP, LR, and LE. So the row L shows me with the ones… the individuals which are known by L.

Y: So all you would have to do is define one that had three positives.

B: Yes.

Darshana: Only two would be enough.

B: These three, these… So L is followed by E. L is followed by R. L is followed by P.
1:11:45
Y: That's three.

B: That's three.

Darshana: Or a two dimensional space you are talking (about).
1:11:58
B: No, whether it is two dimensional, three dimensional, we shall see later on. For now, these ones are showing me… You see there is a structure like this one. This is L. L is followed by E, P, R. But this happens in the consciousness of the preceding individual to L. And which is the preceding individual to L? I could find out when I go from the row to the column. And this I do by going diagonally.
1:12:41
I'll explain why it is really easy. I go to the L. And then I find the first one belonging to this column. Because the columns… let us check if it is true. The first one belonging to one belonging to L column is E. Is E preceding L? Yes, it is because we have E then L and L is followed by R, P, and E once again because we have this very specific structure, E, L, E. This is very difficult to

find. This specific structure is very difficult to find on the graph because of this self reference here. E is in state of knowledge L. L is in state of knowledge of E. And to find a structure like this is difficult. You might miss it. But in the matrix, it is very easy. In the matrix, it is spread out into plane. And I could not miss it.

Y: Especially if (N) were 10,000.
1:13:50
B: Especially if it is 10,000. Yes. So the rows are showing me. The whole row belongs to one specific individual. This is the individual with the 'whoness' of N. This is the specific individual N. And out of N arise three individuals. Or N is in state of direct knowledge this individual, this individual, this individual. They are F, O, Z. Let us check. N is in a state of knowledge of Z. N is in state of knowledge of O. And N is in state of knowledge of F.
1:14:37
N is in state of knowledge of Z of F and of O. In who consciousness this appears to be one dimensional space unit? In B. I have B. Then N. Then N points out to O, Z, and to F. It is so? So this O, Z, F are in the consciousness of B appear to be one dimensional space/unit. Is this so?
1:15:23
So this is very easy for me to find out. Because the rows shows me the one dimensional space units. In N, I have one dimensional space/units for F, O, and Z. These are the ones. And in whose consciousness does this appear? I find when I find out the first one in the column of N.
1:15:49
So from the row of N, I go to the column of N which I might do by going diagonally or simply from the row N, I skip to the column of N. And I am searching which is very easy to do with one dual group. I go, go, go; and I find first one. And I just recognize which individual is in a state of direct knowledge of N. This is B. B is in a state of direct knowledge of N. And N is in a state of direct knowledge of O, Z, F. So in the consciousness of B, these three are one dimensional space.
1:16:37
Y: I see.

B: And this is very easy to do in row by row. I have done it and sent it to you. You remember.

Y: Yes.
1:16:46
B: And then all this structures appeared. And I was very encouraged to proceed in this direction because it is really very easy. And also, the other way around. And so, if I search for the second, for the two dimensional… now, am I correct if I say that in the consciousness of this one? No, this is not the case.
1:17.05
Darshana: This is two dimensional. That's one dimensional. So you just need another arrow and you get three dimensional.

B: And for the Hamiltonian… Yes. And for the Hamiltonian because I have here… I have found and I have animated in Power Point. I'll show it to you, the spanning Hamiltonians, first the little one, and then bigger one, then bigger one, not the biggest because it was too time consuming. It involves 26 individuals. And it would have become messy.
1:17:58
But I have done it for the… I have done the beginning just to show you. I have it in my computer. So what I haven't emphasized so far is… from the row you can see which individuals are arising or the individuals pointing out of this individual. This Individual N is in a state of direct knowledge of F of O and of Z. What is the column? The other way around. The ones in the column show which individuals are pointing to this particular individual.

Y: (acknowledges)
1:18:44
B: Not arising. So row is arising individuals for one point; and column is individual pointing to this particular individual. So, once I have this picture in mind, then all these Hamiltonians become alive. I just see them coming out, arising from the rows and finishing into columns. Once I see this, this is very easy.
1:19:20
Y: In direct graphs language, this is called the in degree; this is the out degree.

B: In degree and out degree.

Y: OK. So mainly what this is, is something that helps you to find order. Different patterns of order.

B: Yes. And maybe something else. We shall see, for now.

Y: OK.
1:19:47
B: For instance, let us see an example. For instance, this one is E. We have E, individual E. Into the individual E, the ones are pointing out to the individual E are… I look for the ones. I have here Y. So into E, I have Y. Then the second one is L. I have L. And the third one is K. So in A, I have Y, L, and K. Is it correct? In A I have L point to A, K pointing to A, and Y pointing. K, Y, L it is visible from the column.
1:21:00
So once I know this, in order to find a spanning Hamiltonian I should start from a row and then move through the matrixes in sense of arrows following each other until I hit into the very same column. I start from the row L; I should finish into the column L. And this closes the circuit. If I start from L and I bump into L into the column of L, then this closes this particular spanning Hamiltonian. And what I should do is find the biggest.
Y: Find the??

B: The biggest one.

Y: (acknowledges)

1:21:45
B: The largest. So what I do is, and I have animated it, is like this. I start from L. Then I see that L is followed by E. So I go to E and look for, in the row of E, which is the following one. So I just recognize that E is followed by Q. Then I go to the row or Q; and I search for the one that follows Q. And I find out that it is M. Then I go to N and search for the one that follows M, and this O. And I go to O and I search for the one that follows O, and this is B. And then I search… I go the B row and I search for the one that follows L and I… (Just few more) Then to N, and N is followed by Z. Then to Z and Z is followed by X. And then X is… then I hit into L column; and this closes the circuit.
1:23:08
Y: Ah ha. I'll be right back.

B: Maybe I'll find this. It is easier…

Bret: I thought it was me. My brain fell out or something.

B: Maybe, I'll make a (stick on?) I am thinking about two dimensions. In order to get, I have to…

Bret: Three out.

B: Three arrows.

Bret: Three out. Four out is three dimensions.

B: So I should look for the row having three ones?

Bret: Yep, two dimensions.

B: And I'll check, first row, second row…

Y: So that would be a program?
1:24:32
B: Yes. Now I'll find it.

Bret: I suggest you turn it around the other way because of the length of the cord.

B: Hamiltonian circuit animation, this one. This I send you just to show you how. These are the matrixes. This is not the one I was searching for. But this is what I was explaining now. I have sent it to you to explain to you how it is done.

Bret: Are these directed.

Don: No.
1:25:21

B: They are not. But… So this is what could be done, for instance. I could define a task for my students to do this. Under my guidance, I shall say to them, “Please have this matrix.” And then, I’ll explain to them the algorithm; and they could do this. They are very… they are faster than me at this. But, actually, I want to show you something else. The name deceives me. Lila… finding the Hamiltonian in matrixes. Unfortunately, it is in open document text, should be a .pdf file. May I take? I’ll try my flash (drive). I have it on flash. Just one minute to show you this animation. I have it on flash memory.
1:26:22
Y: What?

B: May I?

Y: Downstairs? Oh, sure.

B: May I just go and fetch it?

Y: (acknowledges) I was wondering what flesh had to do with it.

Don: As far as Biljana getting up to speed on particle physics, there is, of course, the *Deep Down Things* book which is a very… and then there is the…

Y: It doesn’t have the technical details (but) it doesn’t have all the ideas.
1:27:01
Don: The Penrose book.

Y: His has some. She would have to have a basic graduate book on particle physics.

Bret: If you get the ideas first, you can look up details on the web. That might help. (It) might still be useful to get a conceptual overview.

Y: I wouldn’t object to people doing that.

Bret: If she doesn’t want, I’ll have a look at the book.

Don: *The Deep Down Things*?

Bret: Yah.

Don: It is an excellent, really excellent book.

Bret: Good. Even happier with excellent books.
1:27:42
B: So this is the matrix. This is the… from this row. This is showing… the row showing the individual from which the relations are arising (the knower). And this is showing the individual into which they should finish. In the cases when I want to find the spanning Hamiltonian (I don’t want to say Hamiltonian because we differentiated as you mention between a spanning Hamiltonian and Hamiltonian) I have put this with blue line. This is the same L. This is L,

the initial agent. And then the L is also the final one. And so, I start from the ones; and then I go to the next one to search for the one following.

1:28:47
This is to show how… What is the algorithm for finding the relation which followed certain…? For instance, A is in state of knowledge of E. Then E is state of knowledge of Q. Or here L is in state of knowledge of P. P is in state of knowledge of C. And in this way, I could continue. This is just an illustration.
1:29:18
Now I am looking for Hamiltonians. So the first Hamiltonian… the first spanning Hamiltonian is from L. L is followed by E. E is followed by L. So this is this arrangement. This arrangement L is followed by E. E is followed by L. Or L is pointing to E. E is pointing to L. Or L is state of direct knowledge of E. E is in state of direct knowledge of L. This is the…
1:29:54
Y: All of these ones

B: smallest possible Hamiltonians. Beginning from L and ending to L.

Y: So all these ones indicate the connections that are made here.

B: Yes. I am searching for the circuit.

Y: Yes, I understand. I want to make sure that what's on there is based on this.
1:30:13
B: Yes, exactly.

Y: OK. But it could have been anything.

B: It could have been anything. Yes. It is…

Y: OK.

B: It is this because it is familiar to you and is why I ….

Y: Yes. I understand.
1:30:24
B: And then… I am looking now for bigger Hamiltonian. Yes. This is a spanning Hamiltonian, but clearly it is not the bigger. And I am searching further on. And now the next step is to start from the red line and to add an (n? 1:30.48) into the blue line which is the same because L is… Because this line is L and this column is L. So in order to close the circuit, I have to start from a row. Then all these arrows arising from L are which individuals L is in a state of direct knowledge of. So these are the relations starting from L. Starting from row are the relations starting from L and they… The column is… shows… or the ones in the column are showing the relations ending into L. So the starting is from the row. They arise from the row. This is from this individual. This, this, this, this, and this relations are starting. This is a row and

column is the arrows pointing into this individual. When I am to find a Hamiltonian, then I should start from L, and finish to L.
1:32:00
Y: Which is what you just did.

B: Which is this. Then I start from a row. Then I do whatever I do; and I have to finish into the column which is the same. This is L and this is L. And so in this way, I could show the process of finding the Hamiltonian. This first slide shows the process of finding the next…which one is in a state of direct knowledge of this one. This may be just confusing. This moment is just to show once I have found this is E, I go to E row.
1:32:46
I found that L is followed by P speaking in graph terminology or L is in state of knowledge of P. And then I go to P. And P is in state of knowledge of C. And then I go to C. And C is in state of knowledge of T. And then I go to T. T is in a state of knowledge of D. And then I go to D. So this movement is just optional. This is just…

Y: I see.
1:33:17
B: Maybe this arrow should be smaller, thinner. And when I am searching for Hamiltonian, then I should start from the row and finish in the same row. So I am searching first for the smallest possible. And this one is possible is, L, E, L. This one is also a circuit, but it is very small circuit L, E, L. And this is what is found here. So even if I am not able to see this connection here on the graph, it will be shown here very easily. The algorithm will find it.
1:34:00
Y: Now, I see. And that makes it easier for a programmer to program this sort of thing.

B: Yes, very much.
1:34:11
Bret: This is a visual device that arranges the information so that it is easy for a person looking at a two dimensional arrangement to follow a path. I already in various programs that I have written… I'll have four or five matrixes of different. I have run computer iterations with 30,000 individuals. And while I use a number of these principles and there maybe something further on this that we can work out that would be useful. But it's seems… it is still an iterative process, and the code has to do that. My code does this effectively plus a number of other things. There maybe something else you can… I mean when we discuss.
1:35:00
B: Yes, I could find these structures showing one dimensional unit. Then I could think of any other structure.

Bret: That is of interest; and I certainly want explore that more.
1:35:11
B: I have this in the first letter I sent to you; but it is not animated. It is… so by following this algorithm, row by row, all the structures of this type, for instance, this one dimensional units of space in the consciousness of W, one

dimensional unit of space in the consciousness of [I]. And all the structures of this type are shown row by row.

Bret: Row by row in the sense that there are three entries, for instance, in a row?
1:36:16
B: Yes. Row by row, you see. Here from F, O, Z, P. This is for the…. Ah ha, I have started from E because they are…. Here we don't have such structure. And here we don't have such a substructure because we have just one, one. And here we have just one, one. The first row which shows our structures like this one is [I]. So this is why I start with [I]. And in which consciousness does this appear, this perception? In the consciousness of V. And how do I find this? I find the ones. [I] is followed by F, O, Z, P. [I] is followed by F, O, Z, P. But in who's consciousness? I go to E and I find… The first one in the column of E shows me that this is W.
1:37:32
Because the columns are showing the relations ending into (with) this individual. So the relations ending into the individual of [I] is doubled. The first one show(s) me it is doubling. So I have done this row by row. This is for the [I] row. And the next is F row. From row F, we have Y following and X following. I have Y the (arrow? 1:38:03) of F. X, Y, in whose consciousness does this appear? I have Y and X. I go to Y and then in the… I find in the row of [I] that the first one is [I] in the row of F. The first one is [I]. So [I] is in the consciousness of [I] this perception arises.
1:38:42
But there is another one … Because there is another one in this column, in this column of F there is a second one, and this one points to N. So there is another structure N, F, X, Y. Is it so? We could check here. N is followed by F, F is followed by X and Y which is very difficult to find out here on the graph. And in the consciousness of N one dimensional space/unit appears between X and Y. So the next (just one more) is… this was row F, from row F… OK. This is from row Y; from row Y we have E, M, T. In whose consciousness does this appear? I go to [I] I'm searching from the first one. It is F. So I have F is followed by Y. Y is followed by E and T. Are there any others? I should check. If I check this column of F… Not F… Y… F yes. There is no other one. So there is just one structure like this one.
1:40:21
Y: OK.

B: OK.

Y: I think she has demonstrated a point rather well. What I would like to do tomorrow is… I am going to talk to you about deriving values of (N), how we can compute the value of (N), also, the mass of fundamental particles, (and) the ratio of their masses. And as we are looking at those, then you can show me how you would use a matrix to do that.

B: Yes. OK.
1:41:00

Y: In terms of matrix. These are now just done in the form of probabilistic calculus and algebra which I and Michael Baker, working together, came up with. Then that would give me a better idea of what a matrix might do for completing the part that I have felt was incomplete.
1:41:42
One day I was visiting the Australian National University at the capital of Canberra. To the Physics department. I went to the head of the department and I said, "I have got a problem. I have calculated the mass of the tau lepton but it's off in the 3rd and 4th place from the measurement."
And he said, "Oh, the measurements are not done carefully done at all." He says, "You could be just as right as they are." And then he showed me the allotted error that is (allowed) on it. And they had a certain amount of error that there could possible be. And then there was another measurement done by a different method. And they had a band of measure; and they didn't over lap.
1:42:43
So this one agreed with mine; and this one didn't. That was an eye opener for me. I though I had to match their numbers exactly. And the truth is that they are sloppy and don't say so. And they are not honest. And this is a shame because it would have helped me to know what the actual reality is because it could have saved me a year's work.
1:43:23
And we'll go into some of that kind of stuff tomorrow. And we'll see what you might be able to contribute to that situation with matrixes or whatever. Sounds like a good idea to me because that's also what is next in the paper here, how to calculate the age of the universe. And…
1:43:48
B: In order to be really helpful, I shall have to breach this missing chain I have about these particles. Maybe, you should tell me more about… just ….

Y: I will.

B: And I shall read tonight. Maybe, this will be helpful.

Y: That's a tough one. I have got a book on modern Physics, has a section on particles.

Bret: It's not (Helene Resonick? 1:43.06) is it.

Darshana: Na.

Bret: Oh good.

Darshana: Are they bad.

Bret: No, they are just not beginners' books.
1:44:38
Y: But I will tell you because I have studied it, somewhat. And I tell you really what is needed that's mostly about the theory of relativity, (in) the first part.

And then it goes into Quantum theory. So it’s not… but there is a small section of particle physics.
1:45:00
Darshana: Are any of the rest of these good for that?

Y: You have to name something specific.

Darshana: Oh. Let’s see Q is for quantum.

Y: No, it’s particle physics; it’s different from quantum physics.

Darshana: I don’t have my glasses on so I am not going to choose. I was just straightening up.
1:45:30
B: It is not that I haven’t read anything. Of course, I know something, of course. I have been to CERN, last year’s which is in Geneva regarding hundred years of theory of relativity of Einstein. I have mentions to you.

Y: Yes.

B: And pity I haven’t bring with me… They have a little like comic book with all these particles beautifully… For instance, a charm, which is a quark, is charming or up is upper.

Y: The beauty and…
1:46:03
B: And it was very…. And lepton also. So I have an idea but we should stay at that level of comic book, maybe.

Bret: It won’t hurt. It won’t hurt to start.

B: Because it is done by top scientist, this comic, it is excellent. It is so beautiful once you see, you don’t forget.

Bret: I wonder if it is on the web.

B: I am not sure. Oh, maybe I have it here because I told one student to…
1:46:37
Y: He might be able to find something tonight on the web. You have access Bret.

Bret: At Namrata’s.

Y: OK. Wrap it up.

B: Thank you so much.

Y: I think we are making real progress.