#38
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Y: I thought we could start with…unless you had something? Have you come up with something?

B: I had just one notion. You were discussing this morning session that somehow the unphysical, I don't want to say the physical reality behind the time, is somewhat nearer than the one for the space. But actually, when we look at the actual formulas for Planck time and for length, for Planck length, actually they are very similar. So this age is also included in time. It's not pure time. And then to say our elementary unit of time is nearer to this, it is…We have the same problem in time and space and also the same solution which is favourable. It's not that time is closer in terms of dimensionality than space; it is the same, just C square is the difference.

Y: Yeah, NC.

B: Because these are quanta, these are quanta of energy, I see all the problem. But it is the same thinking for Planck time and for Planck length because the formulas are pretty much the same. What includes uncertainty and quantization, for that matter, is H Bar. But H Bar is also to be found in Planck time. So we might use the same thinking once you have proved your magnitudes to be close to what physicists do. It is not that we have lesser problem with time

Y: Yes.

B: And bigger problem with space, it is the same.

Y: I get your point.

B: As far as I see.

Y: We'll have to look into it.

B: Yes, Ok.

Y: But first I would like to discuss the fundamentals of space a little bit more. In a similar fashion when we were talking about time and that there is this symbolic logic, and logic of the transitive relationship between A and C by way of B, I wondered if we could find a similar one in space and understand what underlies it.

B: Yes.

Y: I don't think it is transitive, I think it is something else. I am not sure what, but in a way of exploring it, what I want to do is take this diagram and draw what A is

conscious of. A is conscious of these attributes of existence, unity, and ability to act. So he is conscious of B • and existence that is unitary and acts. This is overall of what A is conscious of; but A is also conscious of D •, D • and the same for C •. So A is in three states of consciousness now or maybe some more. We'll go into them in a minute. The point is…is that all combinations of conscious states are merged with each other. D • with C •, D • with B •, C and B •. A is in those sub-states of consciousness. These are sub-states; and these combinations are sub-states. There is the temporal transitive states with regard to C • and D • that make these at the same time. Plus we have the three of them here and their combinations. In there some place should be what the relationship is, that in the overall consciousness that A is in which contains the sub-states, all the ones that I have mentioned, so that A is conscious of a unit or one-dimensional space between D • and C •, with D • one unit of time in the past. I don't know in logic if there is any relationship that…maybe an associative relationship or something like that.

B: Yes. There are…artificially, I could find…this could be changed. But this is…we might also look in the matrices and see something if you want.

Y: In matrices.

B: Once we have the matrix and once we have the complementary matrix, we could see something.

Y. Well, let see.

B. Ok, then.

Y: Let's see if the magic square rule works. That's what Heisenberg called it.

B: Magic square.

Don: Oh, yeah.

Y: Magic square.

B: So A is in state of knowledge of B; B is in state of knowledge of C and D. These are ones. One, one, one, there are three of them; and all the rest are zero.

Y: So then how did we get?

B: Now, we could draw…

Y: A line there.

B: We could draw first the…

Y: The complementary…

B: The complementary graph to draw…It could be also derived from here, once we have this methodology. Here is 0,0,0,1,1,1,1,1,1,1,1,1,1,1,1. So all these are sub-states, so to say, but of the complementary graph of the states of no knowledge.

Y: Those are states of knowledge. Now how do we get consciousness? We need states of consciousness.

B: Well, once again to draw the picture. You know, I could say, "This and this changes and this in commutative," but it is not what conductivity is in terms of what we are introducing now. And we are introducing now…I mean we have now a big… Ah! More advanced stage of the mathematics for Lila which is we have now group. This means we have…these are our elements now. The whole matrix is one element; and this is another element.

Y: (Acknowledges)

B: And if I speak now of commutativity, this commutative or associative law is valid. It is valid by definition once we have stated…

Y: What is the associative law? The same thing as transitive, or is it different?

B: It is different somehow. It is x, y. Then z is the same as x, y and z. This is associative law.

Y: What is this letter, Z?

B: Z, provided this multiplication is the operation in question.

Y: (Acknowledges)

B: In relation, it always should be operation, in relation of which our statements are made. So in relations of multiplication, for instance, multiplication is associative operation. This means this is true. It is not always true for all the sets. But once we have matrices, it is true because we have stated once. This was the step once that all the three conditions for a set to be a group are fulfilled. The first one was associative. So it is fulfilled by definition. It is fulfilled here. I could change this. How we could take advantage of it? We shall see later on.

Y: All right.

B: And the second was inverse element; and the third was neutral or identity element. So we have all these. Now, let us first draw the picture of the complementary graph; and then we shall see because it is the same information. But still when you put it differently, you might see something. So this is the original graph...the original, and the other one is…We have A to A, B to B, C to C, D to D. These are across the past (math?). We have A to C. We have A to D, (abcd) A to D, B to A, C to A, C to B, C to D, and D to A, D to B. This is…I mix this. This is B.
12:51
Y: That's B.

B: This is B.

Y: This is B to B.

B. B to A is different, not one. I mixed this which was not drawn. I have A, B; A, B, C, D. A to A, B to B, C to C, D to D, A to C, A to D, B to A; B to A, C to A, C to B, C to D, D to A, D to B, and D to C. 1-13 minus three is sixteen, four to four. So this is the complementary graph. This one is the complementary graph. We could also…we might find the sub-state now in the matrix; but I should think of an explicit algorithm. The information is there but…

Y: We need to find it.

B: We need to find it. It is…

Y: We need to find the consciousness…

B: In order to find the…if we want to include consciousness, then additional…the mention of the matrix.

Y: Information. (acknowledges)

B: Should be included or maybe different matrix. But we could find the sub-states; this could be done because the sub-states are due to relations; and we have the full information on relations. We could think even now, for instance, A to B is one, B to C is one, B to D is one.

Y: No. I don't think so.

B: No.

Y: Are you saying what A is conscious of or what B is conscious of, or both.

B: Taking A.

Y: A only,

B: L Ok, then is not.

Y: Then, no, it is not a (plot?).
16:32
B: Aha! We draw it. We draw the same thing yesterday for time, I remember now. So we should do this the same with…the same what was done for time yesterday?

Y: Yes.

B: The reference, taking into account the reference.

Y: Right.

B: Non-physical individual. We have A to B, B to C, C to D, now out of…just find them…

Y: He did it again. There.

B: Yes, yes.

Y: There. Then there is this and this and…

B: Aha, I know now I'm…now I am looking for an algorithm to do it just this way. So we are looking for the pathways, so to speak, in network terminology or in three terminology. This is a three. We're looking for different pathways beginning from A. So we have one pathway is A B D; another is A B C; another is A to B…

Y: A to B, and I think that's it.

B: That's all. So it could be done in matrices.

Y: Somehow this gets compared to this with this.

B: I know now how to do…it is matrices. I know now because I have algorithm for Hamiltonian.

Y: Ok, you go ahead.

B: This is the same. This is part of the Hamiltonian and nothing else. It is just part of the Hamiltonian, for instance, when I have diagonal elements. This is…they are connected because you know when I go from A, I go to B. Then I jump to B. And then from B, they are connected. I am looking for connected pathways. A is followed by B or A is in a state of knowledge of B. Then I jump to the (bit?) row; and I search for ones. There is one; and B is followed by C and also by D. So these are two sub-states. I start from A I say, A is followed by B. I jump to the…because now B was the known. But now I put B in a position of the knower. These are Li's and these are La's, and search for ones. There are two of them. So I have A B C; and I have A B D. And as a subset I also have A to B which is A is followed by B which is this, just this one or somehow…somehow in terms of network planning, maybe to denote pathways to do it. I have this; and I have this.
19:18
Y: Are you finished?

Namrata: I haven't photocopied them yet, was hoping to take them to Pambula on Tuesday.

B: This is A; this is B; this is C; this D; this is one; this is one; this is one.

Y: You can have these. I need this one. I'll need those in a few days.

Namrata: Good.

B: This is zero. Zero plus one is one; one plus one is two.

Y: Now, let me suggest something.

B: Yes.

Y: We want to compare this and this in a single state of consciousness so these two are in a single state so that this is being compared to that. Now is there anything in logic about comparing?

B: It should be, I must think.

Y: Because in consciousness, you could take this as the referent, and then say, "What is this?" Or you could take this as the referent and say, "What is that?"

B: You mean the whole pathway. The whole pathway, you take as referent, the whole.

Y: Yes.

B: Yes, the whole, Ok. Yes, yes.

Y: Yes, because that's what A is conscious of.

B: Yes, yes.

Y: By comparing this, and this we get time. I suspect we want to compare the consciousness of D • to the consciousness of C •. They are both in the same time, but that somehow should give us space by that comparison action. But I don't know what the logic of that comparison is.

B: Well, but just what you are saying, this is the best way to…

Y: It's a comparative relation.

B. The best way to find out is to follow the logic, what you are talking, to put it into statements. What I suggest, for instance, is frozen time or frozen space because space is the way to distinguish between two entities which are in the same time. And now, we should find out how to do it.

Y: Well…

B: Maybe this is not the best way. Maybe again on sphere.

Y: Maybe it's called a relation of comparison. I don't know.

B: We might even introduce one. We might say our algebra demands, requires comparison. We might introduce…we might state some of (?) something. But I am trying to do it if it is on sphere. Maybe it will…although this is illusionary time and space, but, for instance, I am thinking now what Hawking has done. This cone, if we introduce it into time/space as a world line.
23:44

Y: World line, Feynman.

B: Feynman, yes, because then we will be close to the logic of physics if we introduce…

Y: Maybe, maybe it's trouble. Before you do it, let me just say one thing.

B: Yes.

Y: I think I answered you wrong. You said, "Is it this whole thing?"

B: No, no, I have seen it. It is not the whole thing.

Y: Well, I am thinking that this line should go this way and not include B. So A is consciousness of B; and the same for this one.

B: We are searching for indirect pathways. Let me try in this cone. This is a Hawking, how Hawking is doing. For instance, I have here this is time zero, or present time.

Y: Which?

B: It's all present time, actually. But I am trying to do this frozen time, frozen space. And now B could be…Aha! Now B…information for B, so to speak, seemingly information, the state of knowledge. It is timeless and instantaneous, but to find an algorithm, for instance, if it goes with the speed of light or with our speed of light which is our elementary, it is instantaneous. But our elementary unit of length over elementary unit of time, and the first of our illusionary unit of time which is TQ, it will arrive here. And we will have…all this is B somehow. I am trying to state graphically the instantaneous…the present time of C and D; this is what I am trying to do, not to complicate but to come to something. Here now, if I view the whole of this cone as B or whatever just a state of knowledge, now here is C; here is D. It could be done on cylinder to have the…it could be done on cylinder, maybe better. I have A to B; B is here, for instance, B is the whole. B, B to C, B to D and now I have here two illusionary time quanta which is all the present time actually, strictly speaking. You know, it might help once we shall come to space in terms of monopoles and so on. This might…it is like a whole cylinder. And so this time is the same. But…and if…one cylinder which is closer to our circuit Hamiltonian, although this is elementary notion of space not yet into a circuit, I have A here, B here, and now C and D come to A. And we have notion of frozen time.

Y: (Acknowledges)

B: For instance, this is why at one point I was thinking maybe cylindrical frame of reference might be good. And now, what is space here, so to speak?

Y: It would be between C and D.

B: Between C and D. Now they are instantaneous. And what separates them in the consciousness, we must introduce something too.

Y: The difference, it's the difference between C and D. But how does A get conscious of that difference between C and D?

B: It is a mechanism to separate them somehow.

Y: Well, the way I have been trying to do it is that C is different than D. And if A was conscious of that…but what makes C, C and D? D is 'who; they are. And they are left out. The 'whos' are left out.

B. Here, yes, we should introduce them because we have here just the relations, states of knowledge and the non-physical individuals. If we want to introduce, then we have four elements and four attributes.

Y: Well, maybe there is a state of knowledge that combines with a state of consciousness.

B: This doesn't help if we want to introduce the attributes.

Y: That's the thought.

B: What?

Y: The state of consciousness A is in of D…

B. Yes.

Y: If that combines with the state of knowledge that A is in, so that this state of consciousness combines with the state of knowledge, A would not be conscious of how D is, but would be in a state of knowledge of 'who' D is that would lead into a state that is a mixed state. Aha! Mixed state. A state of knowledge and state of consciousness mixed together so that…we have this one. These two is the state that A is in. So he is not conscious of how D is, but he knows 'who' D is.

B: Yes.

Y: So, and D is different, the same thing of C. So he has both of those; and he knows that they are different. He doesn't see D and C as D and C. He sees them just as point-like particles, one distance apart. And that distance apart is the difference in D and C in his knowledge. You don't see space, but you know it's there, something along those lines. So I will have to think about that.

B: But if you apply thinking like this one, it will apply to any pathway.

Y: Yes.

B: But anyone…

Y: Any pathway in which they could be a mixture.

B: It applies to any pathway, asymmetrical pathways, which is also true for space somehow.

Y: So I am just saying that states of knowledge and states of consciousness could be reduced to a single state. And that one for D combined with the equivalent one for C and they're reduced to a single state comparing the two with the knowledge that D is D and C is C, but not being conscious of it. I hadn't thought of this before.

B: Yes, great, but you don't have the difference between time and space because the same thinking is for time.

Y: Yes, but I think they…

B: Aha!

Y: It's the same in the case of time.

B: We are looking for something to differentiate.

Y: Time is just one of these.

B: Yes.

Y: And the states of knowledge are not different from anything. It is different from B. And that's the explanation, perhaps, for transitive relations.

B: Planck time.

Y: Yes. Let me think about this until tomorrow. And if you would like to work some more on it, we can try to brainstorm and see if you come up with anything if you want.

B. Yes, I…

Y: So far it hasn't worked. We are leaving out an element somewhere.

B: You know, what was trying to do was somehow to draw a clear picture whether it will be cone or whether it will cylinder or it will be sphere.

Y: It worked on me.

B: And, but…

Y: On a sphere.

B: Now, this final thinking is great. And it should be useful, I am sure. But what I was thinking was to find a way to differentiate between the perception, the illusionary perception of time and of space. And actually I was looking for a way to do it somehow to frozen time. And then I have notion of space. And then I have frozen

space. And then have a notion of time. For instance, B as we have mentioned so far, when we have just time A and C are in the present time. So B left in the past.

Y: (acknowledges)

B: In the past.

Y: A is not in present time. A is in a state of consciousness of C in present time.

B: Of C in present time. If we include a new element, then this doesn't help. This is in terms of space and time. Then we should think of something else.

Y: In a circuit he, A would be in present time. But in that diagram, it is not.

B: Or I could say, "The whole surface of the ball is present time."

Y: (acknowledges)

B: Because…and the other way around, I was thinking. The other way around is…because the pathways to illusionary pathways to B and C are the same, we must differentiate between them in the consciousness. And what differentiates them is space, is the notion of space, illusionary notion of space. Because in the consciousness of A, these are superposed. And they are of the same distance, so to speak.

Y: Temporally, yes.

B: Illusionary distance, but we should…this is as if we have…this is as if we have this as we have here, you know. We have here; we have A → B• →C•; and we have A → B• →D•. And now…but we should differentiate. And a mechanism for differentiating is space.

Y: A mechanism for differentiating. Well…but A has to be conscious of it. And that was my explanation.

B. Yes, yes.

Y: The mechanism is the states of knowledge that A is in.

B: Ok. Maybe it is so (?).
38:07
Y: And they both…that's carried along. I think tomorrow I would present something formal.

B: But this might also be helpful. This isn't it so? It might release us from…

Y: The numbers.

B: The dimensionalities of time, Planck time and Planck length. If we look at the dimensionalities, we see both in time, energy at least mechanism for quantizing and

somehow energy. We have jewel here, is introduced also gravitational constant and speed of light. But the same is true for length quanta. So the same thinking should apply. Once you have stated that your way of visualizing phenomena in terms of physical particles fits into the reality of science, then this is enough for us to proceed. It is no reason to treat Planck length differently than Planck time while clearly they have same dimension. And what makes the problem is H Bar. And H Bar is included both in time and in length. So simply you put L quanta is Planck length over third square of 6n squared as you do actually in your diagram.

Y: I think that is correct.

B: Because there is no reason now, once we see this that the dimensionalities are the same. It is no reason to say, "I could take TQ elementary time quanta to be TP over square of 2n." But for this, I can't take it because it includes H Bar which is somehow energy. No, because they have the same dimensionality which is true for TP is true for LP. And actually, this is what makes quantum physics be so complex. The quantization…this is why it is quantum physics because of introducing of H Bar. But we have both in time and both in space.

Y: Yes, it is in the value of the G also.

B: Aha! G, yes.

Y: The gravitational constant. This is yours. I would like to work on some numbers that I think we were making some progress this morning and I said, "I would look into my papers and find out something that is going to help us with space." And I have. More information is flowing in…

B: We must agree to a certain level of obstruction. It is unavoidable. We must agree to a certain level of obstruction in order to go further on which you have done. You have done all the way to the end, to the actual comparison with measurements. So it is actually done. But in order to check the results and to, maybe, improve or not, we must agree to some…always coming back to the basic level because this will lead us. But still we…this is unavoidable to have…to introduce some level of obstruction.

Y: Yes.
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B: And say, "This is this," and go to the next step.

Y: I agree. At least as we're investigating.

B: But also we might find out something new which is…

Y: Yes, that would be investigating, to find out something new which is fine. But I don't see how I can agree on something I don't know about. You see, I can agree to be…to go into abstractions. But I can't agree about how far because I don't know what it is.

B. Yes, but you do when you include measurements. You do when you include measurements done by scientists. You agree to H Bar.

Y: Ah, yes, but I have shown what H Bar is, that H Bar is one Planck length by one Planck length. Then all I have to do is show what one Planck length is. And it's nLQ on the side. Then I have to show what n is. And I show what n is, and…

B: Ok.

Y: And I show what LQ is. We were just talking about what LQ is.

B: Yes, yes, great! This is the way to come to do things.

Y: Yes.

B: I can't see other way. We are going back and forth and…

Y: Yes, that's why I think we have to try a little here, try a little there, come back to it, go back, then Ah! Idea comes.

B: Ok.

Y: Ah, here is an LQ. I have got on this paper Kn cubed times the square root of 2n LQ. And that is the end of the second crossover time.

B: Yes, because for time, you have two arrows.

Y: No, I am sorry. I apologize; it's Kn cubed times square root of 2n LQ. That's length quanta.

Don: Is that Kn cubed or K…?

Y: Kn in parentheses cubed.

B: All together cubed.

Y: Times the square root of 2n. And it is that many LQ.

B: This is for the second crossover.

Y: The end of the second crossover time, not the beginning.

B: Yes, I know the end. Yes, the end of second crossover, the end for the second crossover. Aha! Maybe because you have two crossovers and the expectation for two is this number…this square of 2n.

Y: Yes.

Don: Is that a small n or a large N?

Y: That's small n in the first case, and big N in the second. Big N is probability; the square root of 2N is a probability.

B: Maybe you introduce the expectation number for two arrows here which is square of two n because there are two crossovers.

Y: Could be, and that's the…

B: And that's not bad. Actually it is…because we have this and this and this multiplying. We have third recursion, as you call it. Third recursion, so the information is through all the network. And now second time, and third time, through the first crossover and through the third to the second crossover. And we have Kn cubed.

Y: Well, this, this…

B. And we must include the expectation number of this to happen, of these two arrows although it is not the same whether there are just two or in a circuit. It is not the same. But let us say, "We might take it."

Y: I think what we should say first is that 1LQ is equal to 1 Planck length divided by F3.

B: Yes, exactly. Which is this one?

Y: That's that one; and I think that's right.

Bret: Don't you need to discard states of three that don't create the structure you want?

Y: What?

B: Don't you need to scale it by the count of structures with three arrows that do and don't create the structure you need for space?

Y: Don't create the structure?

Bret: (Strait?) doesn't have any space.
48:25
B: We have other arrangements of three which are not space, for instance, this.

Bret: You need to remove those cases and do a…like the twenty-one cases. And only some of them were valid.

Y: Well, I think that if we are going to go many numbers of significants, we go past five exact numbers. Then that becomes important.

B: Aha, ah, yes. Yes, you're right because we have dealing here with n which is 10^{23}.

Y: Yes. So, I think you are right but…

B: Let us first check. Let us find at least one measurement, one number and compare it with something. For instance, you know, Weinberg-Salam begins with so

and so. I mean in Guth's or something else to have a reference which you have done. But we should repeat it.

Y: This is the size of the universe. I have got size of the universe. Does that mean diameter or does that mean radius?

B: Size of the universe as I have seen in your articles is arrows…the flow of information through arrows, multiplied by elementary unit of length. This is the size of the universe. Isn't it so?

Y: Is it size? Well, is that radius or is that diameter.

B: (acknowledges) It is all the same because you have two arrows.

Y: Well, when something is expanding…

B: Yes.

Y: Are we measuring from the centre to the edge or the entire diameter?

B: For instance, you have baby universe like this one. And the size this baby universe is two length quanta. And whether it is like this or…there is no space, it is space; but it is not in classical sense.

Y: It's imaginary space.

B: So it is imaginary space. So you just count what you are doing as I have recommended.

Y: Yes. You multiply 2 times this.

B: Yes, you multiply 2. And this is size of the universe.

Y: Well then let's calculate what an LQ is. So first, we'll take the value for F3.

B: Only when you are doing these recursions, this changes picture somehow because when you are doing recursion, you go through the whole network. And then you do it once again somehow when you multiply…only when you square it or cube it.

Y: Yes.

B: When you do Kn cubed, for instance, it is…we go through the whole network. The information flows through the whole network of K's, K's, K's. These are all K's. These are K's. And these are…and there are n of them; there are n nodes.

Y: Yes.

B: And the information spreads out through all of them. And you have a crossover and the information. Or there is a superposition of states in the consciousness of the

individual. But still it is like the whole information passes the whole universe second time. And then through the second crossover, third time, and we cube it.

Y: And we multiply this number times this value.

B: Yes, we multiply this by this.

Y: Ok, I am going to calculate that value right now. It's 3.55794151 times 10^{15}…is the number of arrows there. And I divide that into the Planck length. Don't you have Planck length here?

Bret: Did you take the cube root?

Y: Yes. That's what this sheet is. That's done.

B: This is Planck length.

Y: Yes. I have got a better number than that some place, Planck length 1616. And they have 24; and I have 796. And they are plus or minus 12. Well, I'll just use theirs for now. So I am going to divide that into…divide by 6.1, 1.61624 times 10^{-35} of a meter. And I want the inverse of that, don't I? So the value for an LQ is 4.54263 times 10^{-51} meters.

B: 51 because you have here…have you squared n?

Y: Yeah, 51.

B: Aha! You have squared it.

Y: –51.

B: So here I have the degree of n squared to the 46^{th} and third of it.

Bret: 30 and 16, 15.3.

B: It's 15 something.

Y: So your estimation agrees with the calculation.

B: And LP is 10^{-35}. So this is 10^{15} and upper number is 10^{-35} plus 15. It might be, yes.

Y: 51.

B: Yes, it is correct.

Bret: Cool.

B: Great.

Y: And the M goes on the bottom line, not next to the exponent.

Don: Here.

Y: For the meter. Now that's LQ.

B: We shall need it frequently.

Don: Yes.

Y: This is a prediction. I have got it out to ten places for LP. This is dependent on G. My G is accurate. They can prove me wrong. All they have to do is measurement, hasn't happen yet. I thought it would happen on the age of the universe. That's why I quit.

B: And now, if you are comparing to your illustrations and charts…

Y: Yes.

B: Then we should take…we should bear in mind that you have there also square of 2n, just to be aware of it when you have done your calculations.

Y: Oh, on the chart, yes.

B: You have all this Kn third, end of the second crossover era…

Y: And that's also equivalent. I have got…says hadron confinement. We have a time for that, don't we? We have a time for the end already calculated for the end of the second crossover period.

Don: The end of the second crossover, we just calculated.

Y: For time.

B: For time. You have it in your…what you give us this morning. Isn't it? Or we have done it this morning.

Don: Yes, end of the second crossover.

Y: lt is what time?

Don: 3.703006674 times 10^{-7}second.

Y: Right, it's right on. Now, we're going to calculate from…we have the value of LQ. Now we can take K times n cubed, times the square root of 2n and see if it comes out to be about 12 centimetres. Let's see if it comes out to be about 12 centimetres. We have a formula here. Did you copy down the formula for the size of the universe at the end of the second crossover period of time? I can read it to you.

Don: Is that Kn cubed times?

Y: The square root of 2n LQ.

Don: Yes.

Y: So we are going to calculate that now? Kn cubed?

B: Has he given this or not?

Don: This, yes. The size of the universe, is that radius or diameter?

Y: I don't know. I ask that question because I don't know the answer.

Don: Yeah, I didn't know if it was settled or not.

Y: I suspect radius. But she says diameter; she might be right. I thought I had Kn cubed already calculated. Yes, there it is. Kn cubed is 5.42157 times 10^{72}. That's Kn cubed. Now we want to multiply that times the square root of 2n. Yes, I have that. Here is 2n. Multiply that times 4.

B: You'll give me on this.

Y: 660218 times 10^{11} and multiply it times LQ. Now tell me what LQ is.

Don: 4.54263 times 10^{-51}.

Y: 10^{-51}. That's meters right?

Don: Yes.

Y: 7, 2, 34. That's completely off the chart. Even if we divide by 100, about 32 would be here, to change it from centimetres into meters. Either I pressed the wrong buttons; or something's wrong with the formula. So I'll have to do it again.

B: This is (?)
1:03:19
Don: That's Kn cubed. I didn't get the square root of 2n in these other figures.

B: Times LQ?

Don: Which?

B: This time LQ actually…to have the size of the universe.

Don: Ah, yes.

Y: What did I do wrong?

B: Did you multiply by LQ, yes?

Y: Yes, I thought I did. I might have pressed minus when I meant plus…has to do with an exponent of these sizes; it's important.

Don: (acknowledges)

B: If you have 10 to 72, and you multiplied it by LQ which is 10 to minus 51…

Y: Yes, that's what I thought I did.

B: You go to twenty-one. You should have the dimension of 10^{21} meters.

Don: But you also multiply it by the square of 2n which is 10^{11}.

B: 15. 10 to the 11^{th}.

Don: So that's to the minus 32.

Y: Correct, 32 is correct.

B: Not minus plus.

Y: Multiply it.

Don: Yes, yes.

Y: Times. Give me LQ again. 4.54263 times 10^{-51}.

B: 51.

Y: Minus 51^{st}. And that's meters.

B: It is correct. It should be of the degree of 21 or 22. It's correct.

Y: But that's not taking into account the square root of 2n. That's 20. So something is wrong with the formula.

B: Kn to the third was of the degree 10^{72}. Is it correct?

Y: 10^{11}. F2 is 10^{11}. 4.66 times 10^{11}. F2 that is square root of 2n. Is that what you said was the square root of 2n?

B: No, I was saying this Kn cubed.

Y: K…

B: Kn cubed. It is of the degree 10^{72}.

Y: Kn cubed is 5 times 10^{72}.

B: Yes, to the 72^{nd}.

Y: Yes.

B: Times to the 72. Then we multiply this with LQ, which is of the degree times to the minus 51. .

Y: So you subtract.

B: So it is minus 51, it is 21, 10^{21} and then we multiply the square of 2n which is of the degree 10^{11}.

Y: 10^{11}.

B: 10^{11}. It is 32.

Y: Times 4.6602 times 10^{11}.

B: To the 23.

Y: I get 10 to the 34.

B: But now, you have here some in centimetres or meters?

Y: Well.

B: Doesn't matter.

Y: This is centimetres. It just comes down three.

B: It is centimetres; and we have meters.

Y: It is wrong. It should come out to be about 12.

B. 12.

Y. About 10^{12} meters.

B: Ok, but here you don't use square of 2n.

Y: I think that is wrong.

B: Ah, yes, you have.

Y: That's what I was suspecting.

B: This is time; this is space.

Y: Yes.

B: It is for space.

Y: So the space formula is wrong.

B: First of all length…oh wait! Length quanta is in meters; but it doesn't change much.

Y: No, that just three exponents points.

B: It is…

Y: Back to the drawing board.

B: No. Ha ha! It is…this should be normalized somehow because we are not…you do it with this but…

Y: I think I might have/should have divided by *pi* over 2.

B: By…yes…

Y: *pi* over 2.

B: By *pi* over 2 because, yes. It should be normalized because it is all this (quchcer?). It goes through all of them; and it is spread out all over the circuit.
1:08:41
Y: So that's a degree of abstraction; and we agree on that.

B: Yes. What should…what else? It is spread out over. It should be over *pi* half.

Y: That might work. What did we get for Kn, 72 times minus 51?

B: This is the last result you have.

Y: It's wrong. 70…

Don: Kn cubed.

Y: Kn cubed is 7…5 times 72.

Don: Yes.

Y: 5 times 10^{72} and multiply that times LQ which is what times 10^{-51}?

B: LQ.

Y: What, what?

B: 4.54.

Y: Ok, that's close enough. Times 10^{-51}.

B: Yes.

Y: Now I get 2 times 10^{22}. Then I have to adjust that…be 19. Would be 19? It still comes out to be about here. Still to high. It's dropping. So instead if we divide that… Divide it by…multiply by 2…

B: Divide by 1.57.

Y: Divide by *pi*. Ah! This time we have 11 and one half. And that's going to work.

Don: So what did you do to get it?

Y: Divided by *pi* over 2.

B: Divided by *pi* over 2.

Don: Where? At what point? Just to get what kind of result?

B: Kn.

Y: Well, the formula is Kn cubed over 2 *pi*. Or that's 2 times Kn cubed; multiply that by 2; and divide by *pi* which is the same thing as dividing by *pi* over 2.

Don: So the total Kn cubed…

Y: I haven't figured it exactly. I was making a quick estimate.

Don: I understand.

Y: But it looks right to me now. See I am dealing with log-log paper here. So these spaces are not equal. This comes out to be about 5 or 15 right there. So it comes out to be about 13. So that might be right.

B: It should always be normalized because it is such large number. And some many combination coming to picture so that always you must have this essential thinking.

Y: Yes. To get…

B: One to one, one to two, one to three, one to four which leads us to *pi* over 2. And we always normalize by it.

Y: That's what it looks like. Now, how do we figure out the size of the universe at the time of the first circuit?

B: Expectation number for first circuit.

Y: For the time of the second circuit, or when the second crossover occurs. First, second crossover, and I have got…there should be about 52.

B: Divide by three, oh, no, find…

Y: So it would just be…

B: Cubed root…the third root. What we're doing now is we cube it. Aha! First…

Y: In terms of meters I can say what I would predict it to be. It's about.

B: First multiply the number by *pi* over 2; and then find the square. The third square root, third root.

Y: It's about 2 centimetres. Yes, around two centimetres would be the size of the universe under the illusion of two crossovers. So that's two crossovers? Is that what I want?

B: Yes. The end of the one-dimensional. So it is Kn over *pi* half multiplied by LQ.

Y: Kn, what's Kn thousand meters?

B: Kn over *pi*.

Y: Oh, Kn.

B: Kn over *pi* over 2 multiplied by LQ. Isn't it so? The end of the one-dimensional.

Y: The end or the beginning? We just did the end.

B: Now, I am talking about second crossover.

Y: Ah, the second crossover.

B: We are going...I believe this is what you are asking. The size of the universe for this?

Y: Up here.

B: For this?

Y: The size of the universe. Size of the current universe. I've got Kn cubed times 2n and it's…

B: Ah, second recursion as you call it.

Y: That's the second recursion. But I want the beginning of the first recursion or the second crossover point of the circuit.

B: Yes. Isn't it Kn over *pi* over 2?

Y: And I say, "That it is about 2 or 3 centimetres. Small universe."

B: Might be.

Y: That this expands very rapidly.

B: And it expands to 20.

Bret: Up hill both ways.

B: K is.

Y: I don't know what the formula is. I never wrote it down. And I didn't ever know. I just got it by drawing the curve between two points that I did know.

B: Interpolation.

Y: Like *pi* over 2 times n cubed is LQ is the size of the universe at inflection. And that one comes out right.

B: Ah, yes, it's right.

Y: *pi* over 2 times n cubed is LQ is the size of the universe at inflection.

B: Yes. It's correct.

Y: The time is *pi* over 2n time quanta. So it comes out the same except that it is LQ instead of TQ at the point of inflection.

Don: That was?

Y: *pi* over 2 times n.

Don: Quantity cubed.

Y: No, K.

Don: Yeah, but then in parenthesis, then that quantity cubed?

Y: Yes.

Don: Ok.

Y: That's quantity cubed times LQ.

Don: Yes.

Y: And, of course, we know that the point of inflection in time was *pi* over 2 times n TQ. So obviously, I would try this one first. And it comes out just right. About 10^{10}.

B: Of course, we have same number of arrows.

Y: About 10^{10} LQ's. I'm starting to shuffle papers. That's trouble. I don't have my scales marked. Leaving for the airport. No, I am shuffling papers.

B: I have the…

Y: So anyway I think that value is right for both the time and size of the universe at the time of inflection. So do you want to write down the numbers?

Don: Ok, I have a formula for size.

Y: All right, I am going to take *pi* over 2. And I am going to multiply it times n and multiply that times TQ which is 4 something times 10^{-51}.

Don: 4.54.

Y: 4.54 times 10^{-51}.

B: This should take for n? Or no?

Y: Centimetres.

B: Or no.

Don: That's for small n.

B: It is small n here?

Y: Way to small.

B: Hum?

Don: It's small n?

B: Small n. This is the existing arrows at that time.

Y: What is wrong here? Is the LQ value off? Ok, we're going to have to stop. I am going to have to find my papers again. And I am…haven't got enough points checked out to be satisfied that...Oh, I didn't cube. Ahhaha! *pi* over 2 times n cubed times 4. What's for LQ?

B: 4.5426.

Y: 54 times 10^{-51}. Aha! 53 can't be cubed. It's way too much.

B: We shall do it in *Mathematica* if you want.

Don: What about the square?

Y: The squared might work.

Don: Because I am just looking at the formula for time.

Y: And it's squared.

Don: (acknowledges)

Y: Well, let's try again. *pi* over 2 times n squared times LQ 4.54 times 10^{-51}.

B: 10^{53}.

Y: I have got 53. That can't be right.

B: 10 to 53. You know for the inflection point, maybe, you shouldn't use the same formula because inflection point…

Y: Is *pi* over 2n.

B: Is not, but it is not due to the same thinking. It is due to a result, which comes from complex networks and practically it is empiric formula, and so you don't have recursion of the inflection point. You have recursions of others points but not of the inflection point.

Y: I am not sure that I pressed the right buttons. I think I forgot the minus sign.

B: I don't think you should cube it. No. Just…I don't…It is not the same logic involved here for infection point and the same logic when we were observing the spreading of the illusionary information through the neck. It is not same logic.

Y: I turned it off. I pressed all the buttons; and I turned it off.

B: Because this is very suspicious. This is…

Y: It's that time of day.

B: Yes.

Y: Very suspicious. Suspicious that…

B: There is empirical. When it is empirical, you couldn't either take it to the second degree or third degree because it is empirical. It is not logic behind it; it is experience, it is measurement.

Y: Yes, but I think the universe is going to be…I have a time for that. And the universe is going to be a certain size at that time. But you're questioning whether it…the crossover multiplies it.

B: Do you need this point because you could…?

Y: No I…

B: (Find all?) the recursions and neglect this recursion of the inflection point. It is…I don't see at least at this point the meaning…
1:25:43

Y: Yes, but how high…Now what size is the universe at this point? If it is down here, then this curve goes like this.

B: In the first inflection point, OK, I agree, the first inflection point. But cubed doesn't mean…It has not meaning. I mean it has, but not that meaning because you couldn't imply the same logic for the inflection point because this formula for the inflection point *pi* over 2n is found empirically from the complex network theory.

Y: I hear what you're saying; and maybe you're right. I have to think about it when I am clear-headed.

B: Maybe I am wrong, because there is logic behind it also.

Y: Yes. But maybe this logic is not to cube.

Bret: Sydney Harris has a cartoon, two fellows at the blackboard. And one of them is saying, "Creative, yes, imaginative. Logic, that's what's missing."

Y: Yes. I don't…Logic is good for some things if you are working step by step. But if it takes you 400,000 years to go through all the logic steps, and you can take four years wild speculation and come up with the answer, I'll take the four years.

B: You know because the inflection point is due to avalanche of circuits. All of the sudden, we have avalanche of circuits, circuits, circuits, circuits. But you couldn't do it twice you know, this avalanche. It happens once. You couldn't cube it.

Y: I think it can. That's my logic.

B: Ok, yes. Maybe.

Y: I'll be honest.

B: I was first actually to claim that it should be logic. And I tried to find it; and maybe…

Y: I want to read you something. I have a few minutes left, not much. All that exist are a large specific number of non-physical individuals each of whom originates itself into a separate non-physical state with regard to each other. That's slightly changed by Darshana. She also did this and the next sentence. Each non-physical individual with regard to each non-physical individual including itself originates itself into either a state of direct knowledge of that non-physical individual or into a state of no direct knowledge of that non-physical individual. Ah! He likes it.

Don: So far so good.

B: Yes, yes.

Y: At least the wording choices.

Darshana: I changed the next one.

Y: Then she added these originations are timeless. Then she adds which I hadn't said that. Then she adds this because she felt so what about what about this first part because she wants to know what it leads to which is not part of an assumption. It's a conclusion. These non-physical individuals' states of direct knowledge and no direct knowledge of one another are transitive with a pattern thus formed serving as the bases of the state of consciousness had by each non-physical individual of a physical world. So it is…I think she is right in saying what it does. But that is not an assumption. She says that you have to say that it transitive. Well…

Darshana: Well, you can say that. You can go into more detail.

Y: Or you could say *Samasta Bavati Adika Kachichi Ganidha Saala Kika.*

Darshana: (sings some Sanskrit phrase) It is not a poem; yet it's just words.

B: Is great!

Y: Ok, I just thought I would read that.

B: (says some Sanskrit words too.)

Darshana: Yeah, you know. (Breaks out into more verse.)

Y: I am going to use some of these quotes, some of which I haven't read out. I am making a slight revision. And we are going to put some quotes into the Lila Paradigm of Ultimate Reality. And this is going to go onto the website with all our changes and suggestions that we all have agreed on except for Bret. He hasn't agreed about anything. That's not quite true. I read this for you; but I didn't read it to them.

Niels Bohr said, "It must never be forgotten that we ourselves are both actors and spectators in the drama of existence."

John Bell says, "If the theory is to apply to anything but idealized laboratory operations are we not obliged to admit that more or less measurement like processes are going on more or less all of the time. More or less everywhere."

Which is exactly what the Lila Paradigm says, that there is no delay. When there is a relationship, it's instantaneous, there is no delay. And you don't have to wait for the cat in the box to look at himself. Or a human observer to open the lid of the box. It's that every individual that is represented in all the molecules of the cat and the box are all reducing everything all the time next to it. So everything is reduced always. So why…?

Darshana: That cat looking at himself.

Y: So that he would exist.

Darshana: I can see a cat doing that.

Y: That's because they have a delay in the collapse of the wave function. And that's the mistake. Then I say this is quoting John Wheeler.

"We have to move the imposing structure of science over onto the foundation of elementary acts of observer participancy."

So we don't move over to them. We move their edifice onto our assumptions. And then Wheeler also says,

"Are billions upon billions of acts of observer participancy the foundation of everything?"

Y: And I say the answer is…by us is Yes.

B: But a finite number.

Y: But a finite number, not just billions. Carl Sagan use to say.

Billions, billions, and he didn't even know this. And he finally one day commented. His wife kept watching him on TV and said, "Why do you say billions?"

B: He devoted his book to her.

Y: So if I can't add or subtract or find papers, I can tell stories. Ok, let's call it quits for today. It has been a big day for me. Now that I can re…