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B: F2 is the ratio between the imaginary length L I and the experiential length L quanta. And not only here, but in many other equations, it makes more sense to think of F 2 as the ratio from going from (N) individuals to the actually experienced length of space. Which of the cases one to four could actually be used for Lila is not clear to me, but one important fact is the dependence on square of (N) in all of them which is correct. This is the resemblance. He is not talking about.. He is disregarding this factor as not relevant. He is just thinking in terms of the square of N.

Y: (acknowledges)

B: Here could be one, could be pi. Could be something else. I believe this is what he thinks because said…

Y: It is what he thinks. I think he is wrong but… because he is only concerned with concepts not the actual numbers.

B: Yes.

Y: And I am trying to match measurements to six, seven, eight, nine, ten places.

B: But this is what he thinks. He says I have square of (N) and Michael has square of (N). And the factor before is not of relevance. Whether nor not the factor of pi or 2 must be included, seems like a secondary problem, you see.

Y: It is a secondary problem.

B: What I have said to you, it is written then. It is stated explicitly. So this is what he thinks. He says what is important is the dependency is square root of N. And whether we have here 2 or 5 doesn't unimportant.

Y: I understand. He is just trying to say that he is not making Michael wrong.

B: Yah, yes.

Y: He is saying, I am not arguing with him.

B: He is being polite.

Y: But I say, "It does make a difference when the numbers are long, at very precise measurements." And I have found that his is closer. Pi over 2, no 2 over, yah pi over 2 times (N) square root, comes closer to the actual measurement. So I just wondered if you saw his development was correct or maybe it's neither one are exactly correct, I am not sure.

B: So whenever you have P halved used in your radical theory, actually you are referring to this consideration and not to what I have said that it is the crossover spread over the… because I was trying to understand not having this read, not having this information. I was trying to figure out the meaning of your formula.

Y: I remember.

B: And I have done it. And maybe this is the connection between Baker's and this one. Maybe this is the connection because I represented my thinking to you and agreed and it is also correct. You know it was inconsistency, this first consideration of crossovers. One to one is one squared, one to two is two squared.

Y: Yes.

B: One to three is three squared is leading to P squared over 6 not to P halved. And then I have estimated this and I have seen these are similar.

Y: (acknowledges)

B: So this thinking is also correct. And it is a link also between Baker and this one. It is also a link so they are both correct. But which one is more accurate? So whenever you have P square it is not this line of thinking, but the random problem line thinking.

Y: So, I'm not satisfied with either one because neither one is discrete. If we take the actual circle, and we take it down to the molecular level, it becomes a polygon. We are talking about in the physical universe. Not in Platonic land. It is a polygon. You take it right down to atoms or quarks and leptons level, then you get this. Now the value of pi is going to be finite. Yes, there will be so many of these units. This was done by Pythagoras?

B: Yes, it will be a polygon, yes.

Y: Yes.

B: There won't be pi actually, not the value of pi will be finite.

Y: Well, it will be that ratio and this is how the distribution occurs in the Lila Paradigm. It's not continuous.

Bret: That is why I said that pi actually means something. It isn't the ratio in circumference to…

Y: It will be the ratio diameter to this radius, this circumference.

B: This is how pi is obtained. It is… you start with the simple triangle.

Y: Yes, I know that.

B: This then this.

Bret: That is a way to calculate the magnitude of pi given an ideal continuous piece wise smooth universe.

Y: But that is not the way our universe is because it is a Lila Paradigm universe and it is made out of these straight line segments in the ultimate. So just need a mathematical way to derive… We don't call it pi we call it pi prime or something like that.

Bret: Also consider…

Y: That number, that ratio, will be different. And that will give me a different result on a formula. And it will make it more accurate to the measurements that are done with instruments that can be very greatly refined like a gradient spectrograph can go to eleven or twelve places of precision. Whereas, you try to wrap a ruler around and measure this, you'll never get it accurate enough. So you see what I am driving at, a different pi. That is why I want to get over infinite mathematics because [i is a continuum. I'm trying to let you know how I see that the Lila Paradigm mathematics should be cast. So that it is discrete in every respect. And there is not a single element from mathematics that is continuous or infinite.

B: I understand you.

Y: But what to do about it, I don't know, I am stuck.

B: Because here in this rectangular, we have n length quanta (n small) and this is in the state of affairs when the total number of individuals is n. But it is not a fixed number.

Y: Yes, it is not fixed. But all we have to do is measure alpha which is measured to twelve places of accuracy. Alpha tells us what little n is because we know what (K) is and we take E and (K) and alpha. And we can take (N) and subtract the number that are not in the circuit. And that gives us little n. So the value of alpha that we measure changes; then little n changes. But if we take whatever the current measurement is and that determines the value of n (little n). And so there are so many segments here. And it is a finite and absolute number.

Bret: I would like to make an observation about this.

Y: Yah.

Bret: We keep thinking about the physical world instead thinking about this as a Lila ring, a connection of individuals in a circuit.

Y: That is what we were doing. That is why we called it little n.

Bret: No, I said you are thinking about the physical world because I want to make this observation.

Y: OK.

Bret: Think about just the fact of a… and it isn't circular. It isn't any shape at all fine yet pi is dependent on it. Somehow out of the fact of a circuit, there is some relationship that is being expressed such that pi exists in just the fact that there is a circuit. That is why I say pi means something. And it doesn't have to do with circles. There has to be some kind of relationship.

Y: You are right. It doesn't have to do with the fact that it is connected.

Bret: You're right.

Y: In circularly, or circuit wise. That's why because you can mend this around because there is not space here at all.

B: Yes, yes. It shouldn't be circular at all.

Y: But that ratio has something to do with what we think of as pi. In this imagined Platonic space or the Platonic realm there is an idealized pi. But that is, it's assuming that there is an infinite number of segments or connections or arrows; and there is not. And so, therefore, we would have to put a correction on the value of what we have called pi and call it pi 2, or something pi prime.

B: It will be the diameter of the biggest spanning Hamiltonian of finite number of isomorphic Hamiltonian's.

Y: Yes. Correct.

B: Because this same arrangement in which indirectly A finishes with A, B finishes with B, C finishes with C, D finishes with D, this is a spanning Hamiltonian. And this spanning Hamiltonian could be represented in many, many, many but finite different ways.

Y: Doesn't matter.

B: This will be still this new pi whatever we call him or it. It will be the ratio of the circle (parents) and the diameter of the greatest spanning Hamiltonian. Not greatest… of the… one of the spanning Hamiltonians.

Y: That has the most arrows in it.

Bret: I don't agree. That maybe true, but I don't think that is a complete statement. I don't think that you have got it. And here is the reason. There is no distance across here. There is nothing to do with distance. There is just connectivity, Pi means something, but it does not mean this. We can fold it into this. We may even get a number; but consider there is no distance across. There is only the count of the number and that is…

Y: That count of the number determines what seems to be the magnitude.

Bret: I accept that true. But that doesn't…

Y: It's not special, I agree.

Bret: But it's not a circle and a diameter and we can't…

Y: Right.

Bret: But hang on, pi turns out to be something close to 3.14.

Y: Yes.

Bret: Well, come up with a slightly different value. But if only take the count around here; you end up with an integer and nothing to divide by. And, therefore, we do not understand what pi is yet.

Y: Yes, but we are about to figure it out.

Bret: We haven't got the concept. That is what I am saying. There is some concept that we need to get away from in the idea of the circles and diameters.

B: This concept for which you are searching.

Y: But pi as she has already worked out, has to do with the crossovers. So it's a ratio between the crossovers and the number in the circuit.

Bret: The crossovers? OK. That's not the diameter; that's the crossover.

B: I am saying the sum of the crossovers is related to what turns out to be the diameter.

Bret: Two, three minuets ago someone said diameter. So that is why I am speaking to this.

Y: So you're right.

Bret: Right, fine, crossovers, OK.

Y: I understood it. We have been trying to get it across to her.

B: The hypothetical concept you are searching for should have something to do with the fact that every individual in this rectangular or…

Y: Polygon.

B: Polygon, ends up with itself.

Y: Yes, it ends up with itself.

B: Because…

Y: In an average of (K) crossovers per individual.

B: If we introduce average, then the finite is over, our search for finite number.

Y: I think so.

B: This is the problem. This is where from pi arises.

Bret: The average is statistical.

Y: If we do this, we will solve our basic problem of how to approach the mathematics correctly. We will tear off the face of pi.

B: First of all.

Y: Dangerous stuff. But that will. What pi stands for here is God. It’s us and our relationships and that’s what is going on here. And if we can do this, and we are getting close to it because you have isolated that pi is related to the crossovers where E isn’t. Remember that.

B: Yes.

Y: Aha! So there is a combination of little n and (K) which is the average value. Those two have something to do with determining what would be the digital value of pi. So we can leave that and let it cook overnight and see what happens. Does that bother you for us to have that brain storming?

B: No, no, I was just thinking when you introduce average, then it is not finite. And it is ( )

Bret: It is statistical.

Y: You re right. So it has to do with the actual number of individuals and how many crossovers each one of them has. So we have to allow for that.

B: It should be solved only in connection with this alpha you were mentioning because otherwise, it changes all the time. It changes.

Y: Well, alphas can’t theoretically change. But when you take a measurement, it is what it is at that instant.

B: And this is what I am saying because it should be connected with alpha, with some strict, with something firm, with something to rely on.

Bret: I would be surprised if alpha has been measured accurately enough that we can determine two states and then bracket it.

Y: It has been measured to twelve.

B: Yah, I don't think that would be accurate enough.

Y: Not nearly to get 23 places out of it.

Bret: So we are comparing to statistical measurements anyway.

Y: Well, that's true. But we would be developing a mathematics that would leave room for that to happen. And our thinking can be in that way, of a digital way, and a finite way. So you are right. It is tied to alpha. And alpha determines what the value of (K) is. But alpha is not fundamental. Alpha is an energy state and (K) is an arrow, number of states of knowledge which is more fundamental.

B: B average number of arrows.

Y: Yes, but it is the average number and that is what you measure, what you measure when you measure alpha. You are measuring samples of maybe ten billion electrons and how they repel each other. That's how they get the value of alpha, the strength of that repellence between two negative charges. They repel each other and they measure that for a whole lot of electrons. In principle, if they could measure it more accurately, they could get the actual value. Take each electron, compare it with each other. It would take the whole universe to do it.

Bret: Send notes to everybody to stand in particular positions.

B: Could we see now explicitly once again, the connection between alpha (K) and whatever we need in order to be able think overnight?

Y: Do you remember that formula? It's in *Radical* appendix.

B: I am glad we have seen this because this is very important. And I am glad it is all clear, this random walk problem.

Y: (acknowledges)

B: Maybe, tonight I will.

Y: You can integrate that.

B: This could be obtained by induction, by mathematical induction. By assuming… let us assume that this is correct for (K). If it is correct for K plus one, then it is correct for any number. It could be obtain by and this is clear all… you have this squared plus one squared. Instead of one, I have two and instead of two, I have three and instead of three, I have five and I have (?)t he same. Now to understand it physically really well, we need to.

Y: (K) is the square root of the inverse of alpha.

B: (acknowledges) So (K) squared.

Y: Plus one.

B: Ah ha, plus one.

Bret: Added outside the radical?

Y: Yes.

B: This, plus one, maybe that plus one, I was implying.

Don: That's the arrow in the circuit.

B: Ah! This is the one I have told you this morning if you remember.

Y: Yes, I remember.

B: I said it (was here if you can see?). I have (total five overnight)… don't have all this picture yet then. I'll show you I was thinking about. It may be two or three hours. This is the one, isn't it?

Y: Yes, that's the one.

B: That's the one because I was thinking and thinking and thinking. And so I was thinking if it is. Either we have this situation, we have individuals, individuals, individuals, and we have (K) here, (K) here, (K) here, (K) here, and this is clearly (N) multiplied by (K). Or we have a circuit also.

Y: Not also.

B: But obligatory.

Y: This is the square root of the inverse of alpha for D. That gives you this number. But it doesn't count this arrow.

B: Yes, and this arrow should be added. And if this arrow…

Y: No, no. (K) is the square root of the inverse of alpha plus one. K is equal to this.

Bret: So (K) minus one equals square root.

B: (K) OK. (K) Something different, but still the same because in (K) ( ) also this… you know… maybe I am wrong, but now I have a picture. Just I need time to explain it to you earlier because…

Y: Go ahead.

B: We have, you know… when we take into account what alpha is, and this is the strength, and this is clearly connected with (K), we have this here, this here, this here, this here. And this is clearly pulling something. It is either repelling or attracting. But this is a strength here.

Y: Yes, it is the strength of the coupling bond.

B: It is the strength, and then we have N… Once again what is that formula?

Y: Little n includes the arrow in the circuit.

Don: Little n is the number of arrows in the circuit.

Y: In the circuit.

B: I am searching for the formula once again. This one. So this is correct. (K) is one over alpha plus one which means that (K) minus one, minus this… (K) minus one.

Y: Instead of 12.7

B: What I was considered to be (K) are this, just this, without this one. So this one should be subjective. And this is the strength which is one over alpha if it is spread all over.

Y: Yes if it… yes.

B: So this squared… (K) minus one squared is one over alpha.

Y: Right.

Don: (acknowledges)

B: To every (K) minus one, we have another (K) minus one. And why is this? Something to do with the…this square fine by… in this paper. Maybe not. (K) minus one could be observed as (K), as (K) (freemer) you know, not to be bothered with this one. (K) minus one, if this minus one is due to the one connected this. This is just one, once this is established this is considered as one arrow. So the circle no matter how many of ingredients we have into it, it is just one arrow. So we have one arrow. And this one arrow could be subjective from K, and we have just (K) plus. So (K) plus is actually the… (K) plus is what is giving the potential difference… the strength.

Y: The strength to the coupling constant. Is alpha, so whatever alpha is equal to here. Is equal to one over this.

B: Yes, alpha is one over this. Why is it squared? Just this is. Why is it square?

Y: Because…

B: Because it is something to something, because they are plus and minus, or maybe not.

Y: Because alpha is an energy measurement.

B: And this is length to length in a way.

Y: Yes, that's why it is squared.

B: Ok. This is L P. This is L P; and this is energy of H bar.

Y: Yes.

B: This is distance, and this is distance as you have written. And this is energy and this is (only or all in?) circuit. So (K) is considered a length somehow which it is.

Y: Yes. What you got Bret? What you been working on?

Bret: Several things. The real exciting one, the computer crashed. And I had the thought just before the class started. So it blew up in my mind in class; and then I started writing it up out there, and the computer crashed. I have rewritten some of it and I'll get it back when I can put my attention on it. But I can tell you.

Y: What is the subject matter?

Bret: I have a couple of things. The subject matter, the exciting one is, what motion is. I had an insight about it. It looks pretty interesting. The other thing that I thought about is what I mentioned to you this morning which is a bit relevant now and I what to say it first. I was thinking there is a Lila universe of individuals. And then there is the physical universe that proceeds in the consciousness of some individual as a result of the Lila universe.

Y: Yes.

Bret: In the Lila universe, we have individuals. We have choices to connect to. We have attributes. We have sameness of attributes and states of consciousness and an individual based on that. None of that is dependent on the physical. Rather it is the other way around. The physical proceeds out of this, but this is completely described in self consistent just within itself. And so I had the thought that Lila mathematics that we develop would be the Lila side of it which would be complete and consistent. And then there would be either a transform as if we were going with a Li space into the physical. Or there would just be an aggregate of rules of how to interpret such that you could describe the physical off of the Lila.

Y: Yes. That is what she was suggesting. Rules.

Bret: Yes. I have done a lot of computer simulations. And none of them have really required me to differentiate between particular geometries; so far I haven't been asked a question that asks that. The closest was the first one which just asked how many of any type of connectivity involving six arrows are there. And how many of any type of formations are there with just five arrows? I got enormous numbers out of very few. I didn't really have to get as far, for instance, your matrix technique of calculating three forks, four forks. Haven't had to do that yet although I have thought about it a bit. But the… and so the mathematics that I have done so far in computers hasn't really involved distinguishing between those. But it has been completely deterministic so far. So I thought about that with regards to the mathematic solely on the Lila side first. That can be completely stated and described and completely self consistent by itself. And then it's a separate step. I am willing to look at the physical world in order to get clues about this. But still that was one thought this morning. And I would start by listing all the constructs and conceptual objects involved and then start representing them and look at the relationships between them and then find ways to represent those. But the one that got me excited was a little while ago. I won't be able to say it anywhere near as I could before because lost it; and now my attention isn't on it. I'll get it back. I started listing just like I typically do to write a computer program what do I know essentially. It started with motion is a change of position associated with a change in time. If I experience motion, it is because I think that something is in a different position and it took time to do it. It's like OK that's motion. Change of position is a change in relative distance. If there's no reference point and even in a relativistic Einstein universe this one, there's no reference point, motion is just the relativistic change is distances between some things. Like you changed this way according to that one and this way according to that one, and the distance has changed

Y: And that's all.

Bret: And that's it. And I rewrote something. And it won't be right yet. It won't have all of the punch yet, all the ideas. A correspondence of sub-states of distance of sub-states of time is motion. So on the Lila side distance is a sub-state. You get this fork and there is a distance between two particles similar constructs for larger and more complicated situations. That's how distance is created, appears on the Lila side. There are sub-states that are time too. But it is actually a static net. It is like it does not change during the consideration of seeing motion within it. There is no change in the conductivity at all.

Y: But you get the illusion of time.

Bret: And so I have the illusion of time by considering sub-states and comparing them to each other and to the whole. And I have an illusion of distance by considering sub-states and comparison to each other. And so that provides the opportunity for changes in distance and changes in time. And if I have a construction that gives me a correspondence between the two, it's like I am thinking that's motion. But then I… I'll get the sequence back probably when I think about it, but it's out of sequence here. I realized we don't need to explain ideal motion; we only need to explain real motion in this world. Ideal motion the Platonic one has stillness in it. Things that don't move, that are at a point as opposed to things that are moving, but this universe does not. There is nothing, no thing in this universe that isn't moving. There is quantum uncertainty about position. There's the energy of heat. But probably the quantum is more fundamental of the two. I haven't thought it through. But there is nothing in this universe that we have to explain as being still.

Y: I am not sure that…

Bret: That is the thought but it is out of sequence so I don't have other things that I have thought of first. But what I was thinking.

Y: I was with you up until that point. I was agreeing that was one of the things I was trying to show when I was drawing this morning, that you have various sub-states that deal with both time and distance between particle points. Where to go from there, I'm not sure.

Bret: Well, I am not done. Do you want to hear it or?

Y: I don't know if I do or not because we've split on there is no motion, everything is in motion.

Bret: Well you haven't heard the… It's out of sequence like I said. And therefore, I don't have it completely. It's not completely defensible. I could tell you other pieces of it. A thought that I had…

Y: Not yet.

Bret: OK.

Y: Punita, you had some thoughts on motion.

Don: Well, I haven't elaborated on it. It is something along the same lines as you were thinking. I have a similar concerned about nothing being fixed. I mean to me in consciousness, I am a referent.

Y: Yes.

Don: And so all the motion for me is in reference to that.

Y: Yes.

Don: So that's the fixed point.

Y: Einstein would agree with you.

Don: Yes, that's the fixed point, consciousness. And in an absolute sense, there is no fixed point. So but if we are looking in terms of consciousness to me, it's in relation.

Y: Yes, we are looking at the illusion of motion.

Don: Yes, then it is relation to that point.

Y: What arrangement of individuals and arrows will produce that, that's the question.

Don: Well, one thing I mentioned to you earlier is that attention is involved. When you put attention on something, that is establishing a state of knowledge to a particular pattern. And I though of this in something in relation to what you were talking about in terms of the negative.

B: The positive state.

Don: And the negative state. And so (they?) putting attention on in the degree you establish the negative state, but not totally unless you are totally involved with something and not conscious of something else. But then you have that negative pattern. It's a reality for you in your consciousness. So somehow in looking at the patterns when selecting one out, just consider attention.

Bret: Would you elaborate putting your attention on something?

Don: Putting attention.

Y: We'll have to discuss that, I thought tomorrow morning. We'll discuss what moving your attention around means. And why you get only… when you look at the glass that is clear, but this is all foggy out here. It maybe optically clear, but mentally it is just background. So you had something.

B: I had something about this pi being finite in connection to this, but I need to think. Yes.

Y: Yes we are brainstorming; this is a brain storming session.

B: I had an idea. Ah ha! this is the idea. Once the circuit has been established, then we have, because in the consciousness of A, a perception of itself has been formed. Although with all this limitations, it is that acknowledged, but with am I or am I not and so on. Still we have circling, circling, circling. I have a direct knowledge of myself but through all this in the (itels?) which blurs it. But still there is a circuit and this circuit repeats and repeats and repeats and repeats. And this is a wave. And once we have wave, we have pi into picture. And now when having a finite numbers whether this pi will disappear, I am thinking. Whether this pi will… It is unavoidable once I repeat the movement over a circuit because this sine and cosine, they are always smaller than one and this means fraction.

Y: Well, but these are continua. What if you take the continuousness out of there? What are we looking at, what is it?

B: I am thinking if this was your original idea because these are finite. These are finite.

Y: Yes.

B: And somehow this wave, once pi is finite, everything that occurs out of pi is finite.

Bret: Quantum sine, cosine.

B: Even a wave.

Y: Even a wave can be finite.

B: Yes.

Y: And your mathematics dealing with that, you (can, Can’t?) use sine and cosine.

B: Yes, it will be something else.

Y: Yes.

B: This was the idea that I thought.

Y: (acknowledges)

B: Prior to we establish connections with the physical world, once we do this, finished with being finite.

Y: That’s right because this appears to be continuous in many ways.

(End formal session)

Y: Well, I think we can end the formal part here and you can talk with her about whatever you want to for the next ten minutes. And we can finish up the odds and ends on the computers.