

#59S
Formal Talk
Lila Recordings
15-11-06 PM
1 Hr 34 min
[Recording 59](#)

B: Yes.

Y: It didn't work. We did it very carefully...

B: We shall do it once again, you know, tomorrow.

Y: ...and it's four orders of magnitude off.

B: But on computer it was right. And I have it saved so it is all right. The equation is good. Only something else...

Y: Something I did.

B: Yes. Something...

Y: Well, haven't found it yet.

B: We shall do it. We shall do it, maybe tonight or after the party or... (B sighs.)

Y: Did I copy the equation correctly?

B: Ah, the equation λ *ce* to K , e plus minus K ... Yes, yes. (Y acknowledges.) So it is checked. It is correct. The precision... I had the precision. But somewhere, maybe I unwillingly have changed or when it works with the degrees, it takes its own inner precision and it spoils...

Y: And says, "That's good enough." (All laugh.)

B: Yes, it says, "For him it's good enough." but not for the nonphysical Individuals. (B laughs.)

Y: It may be because Wheeler (B acknowledges.) only gives... Did it recognize that number as being the value for the electric charge in terms of centimeters? (B acknowledges.) If it recognized it, it might have just taken his value.

B: Aha! Even this is possible.

Y: For which I think is only – what was it, 5 places or something like that?

B: Aha! But how does it...he knows that we want. Maybe this is the number of...this is my check.

Y: Yes. You have to force it! (All laugh.)

B: Maybe this is money I have in bank. (All laugh.) How does he know it's the Coupling constant? (laughs)

Y: We can call him up and tell him...

B: It's not my money in the bank times 10 to the 23rd. (All laugh.)

Y: All right, before you take up what you've got... You can turn it on now.

Punita: It was on. I just...

Y: I'm still looking at this paragraph because after we finished the calculation, I wanted to say something. (B acknowledges.) But we didn't quite finish. Page 37 (B acknowledges.) Same paragraph D, says:

The formula for the Compton wavelength of the electron is the electric charge in terms of length times K times little n. (B acknowledges.) Now *that* can tell you something. It tells us something...that what the wavelength is in terms of the Lila Paradigm. (P and B acknowledge.) We know that N is circuit and K is the average number of crossovers per Individual in the circuit. And you multiply that product times the length of electric charge; (B acknowledges.) and this is the Compton wavelength. (B acknowledges.) That ought to tell you something about your wave interpretation. (B acknowledges.) **[Recording time 04:18]**

OK. And taking these formulas...I've given you several formulas here and there, about this thing and that thing. (B acknowledges.) That's a mixture of a measurement (B acknowledges.) along with either N or little n or K and they're responsible for almost everything except for the F numbers. (B acknowledges.) So, this would help you to understand *what* in the Lila Paradigm (B acknowledges.) represents that physical measurement—which is the (B acknowledges.) hardest thing of all to do in this understanding. (B acknowledges.) And one final thing on this is that I'm satisfied that you have it correctly if you just get the precision. (B acknowledges.) But how could that possibly be that 10 to the *e* to the pi and this formula here for N are the same? (B acknowledges.) It's not a matter of substituting numbers...

B: No.

Y: ...because there's no connection between pi and this formula other than in the Lila Paradigm.

B: Maybe later on I'll say something when you finish.

Y: Yes. I was just finished. I just was saying there's no connection.

B: There is connection. We should know more about how alpha is obtained because alpha is the Coupling constant. And alpha is actually the resultant of all the little forces around the circuit.

Y: That's right.

B: Yes. That is correct. This is Lila...

Y: ...due to the crossovers.

B: Yes. And it is because...since... we have introduced elementary unit of time, elementary unit of length, elementary unit of force; and these little forces are doing K.

Y: Yes. That is correct.

B: And that is correct. And this is where from pi comes in Lila. I understand you fully.

Y: It's actually Lila.

B: Yes, yes. And now, if we switch to alpha, but in alpha it is similar. In alpha it is also the strength which keeps particles together.

Y: That's right.

B: So we have also... So this is the connection with alpha.

Y: That's the connection with alpha. But that doesn't say what the connection pi and 10 to the e to the pi has to do with this formula...

B: I understand you fully, yes. But...

Y: ...except through the Lila Paradigm...

B: Yes. This is from Lila.

Y: ...we can say that that has to do with pi.

B: That has to do with pi and with K.

Y: But they don't know that.

B: Yes, but still it is similar, I believe, you know, because pi is included in circuit, in waves, in the way how circulating around (Y acknowledges.) takes place; and maybe also with distribution of... with some kind of distribution. I know alpha is a measured value. But it is attraction; it is still attraction. And this attraction could be visualized as the circuit.

Y: It's actually...alpha is the strength of the attraction.

B: The strength. Yes.

Y: ...or the strength of the attraction or the repulsion.

B: Or the repulsion. But it is somehow spherical. And sphere is connected with pi. It is still connected with pi.

Y: Yes, it is connected with pi, but only in terms of the Lila Paradigm.

B: But also in the terms of attraction and repulsion. Maybe I should know more about alpha but... Maybe I'm too much into Lila; and I visualize all the things in terms of Lila. (P laughs.)

Y: Ah, she's got a new paradigm! (All laugh.)

B: Yes. Thank you. Maybe this is the case. But, (laughs) you know, this is spherical somehow. It could be visualized. It couldn't be linear even in contemporary physics (laughs) which is stupid. I mean, maybe, even the physicist has realized that it... It couldn't be linear

because if it is linear, if the attraction or repulsion – in contemporary physics now I speak, not in terms of Lila...if it was linear, they will collide or they will go apart and never meet again. So it is... in order to have repulsion or attraction, we have always combination of the centrifugal force of the particles going around something – for instance, as the planets go over the sun. And in astrophysics, this is the gravitation of the sun. And in the subatomic particles, it is the attraction of the particles. So, it must be a sphere. It is never linear; even if it is repulsion.

Y: Yes, I agree. It is non-linear.

B: So the circling and the resultant of the force is a resultant of those particles who are subject to this Coupling, to this repulsion or attraction. They are torn between the centrifugal force and the attraction and the gravitation on the level of subatomic particles, torn between the gravitational and the centrifugal. And between them, just like Vishnu–Vishnu is the balance between Shiva and Brahma—between creation and destruction. Just the same, this is a balance between these. I speak solely in terms of physics, not Lila. It must be so; otherwise, it will be just linear. And they will particle collide or go apart never to meet again. So, it must be a resultant between centrifugal force which is pulling away and gravitational which is pulling in.

Y: But they don't say that in terms of pi – the astrophysicists.

B: But pi is in the circling around. (Y acknowledges.) I was thinking...

Y: But they don't say how 10 to the e to the pi...

B: Yes, yes. I fully agree. I was thinking the same thoughts before I came to this session; the same thoughts about where is the connection and where it comes from. And actually this is...
[Recording time 12:11]

Y: There is a connection, of course. (B acknowledges.) It's one in the same thing.

B: This is the Truth. The Truth is the connection, the truth about how things are.

Y: You're right. (All laugh.)

B: This is the greatest connection. So, it is a great support. I was really... I am impressed. I am impressed. And this is a great support. It should be stressed. I agree fully.

Y: OK. I'm happy. (B laughs.) And that's all I wanted to take up except to finish the calculation (B acknowledges.) where they're complete.

B: You know something else? Maybe I'm wrong. When we look at this wave as being the charge which is elementary unit, I view it as an elementary unit which it is. And you do it the same. You introduced it. It's your creation. So it is N. It is multiplied by KN. But, you see, the circuit which we also take into consideration when looking for wavelengths of particles, it is not just N; but also K is included. (Y acknowledges.) And this morning when I mentioned is not just N... **[Recording time 13:32]** So, now I'm jumping to another question. For instance, when you are finding the speed of light and claiming that it is slower for a smaller circuit, (Y acknowledges.) in this consideration, not just N which is the number of – I don't say agents, I say relations. (Y acknowledges.) Since once we have seen the difference, it is now the relations; the relations n, small n – the extant circuit, multiplied by LX or the elementary unit of length over tp or over Planck time or how you find the speed of light. But

it's also the $K(s)$, the little forces which pull inside because we are always dealing with probabilities and distribution to a complex network. It is not N ; it is not a firm number. It is found due to distribution, even small n . And so, it is always like a loss of the signal, or of the information through this little network, little, so-to-say, *leakings* of energy through K . It is like distribution always. (Y acknowledges.)

And this is what enables us to take, when we are looking for tau or electron or **[Recording time 15:22]** whatever, either it is rest mass or wavelength. We are allowed due to this fact that we are dealing with distribution through the little, little forks which capture the circuit somehow. These little forks capture the circuit. Some of them lead nowhere to a known who is not a knower (laughs) to... **[Recording time 15:52]** And some of them are closed through the fork being who is eating its own tail, so-to-say; some of them are. So this going around the circuit, this moving around the circuit always has little loops (little reinforcements) and also a leak through the $K(s)$ or connections which are going somewhere, now taking always into account there is no background of space-time; these are just originations. (Y acknowledges.) So actually we are... this fact gives us right to deal with F of 3, F of 4 which are small distributions. This is not the number of forks of three. It is expected number of forks of three, (Y acknowledges.) and so, for these two in the rest mass because it is so, it is not just to say, "Oh ho! This going around circumference once, and then it comes twice and it is the end."

No, the picture is more complex. But still, this consideration gives us right to say, "When I am trying to find, for instance, the λ for tau particle, I equalize per one beat of time circulating of the illusionary information around the larger circuit and around the smaller circuit, taking into account that this is a complex network with leaking of energy and with little loops which are the opposite reinforcing of energy. So through this, we have the average number. While we are circulating around the smaller circuit and the bigger, we have both little loops which is reinforcement of energy and little forks which end outside to some Individuals outside the circuit which is leaking somehow. So we have both reinforcement and leaking of illusionary energy or information. And this gives us the average number. One point... **[Recording time 18:45]**

But Second point is: So it is legitimate for us to suppose that when I...that part of this F of 5, for instance, which I intend to use for tau particle, is partly, maybe partly is overlapped with the biggest circuit. OK, my point was this (Y acknowledges.) to stress these loops and this distribution to the network. **[Recording time 19:14]** But yes, this is a great insight. This is a great insight.

Y: OK, you had a list of things we should review and see...

B: Yes, if you agree we could...

Y: ...where we stand now.

B: If it is not too much of repeating. And maybe I'll miss something. First of all, this morning when you said after the session, "Why they do not accept Lila; is it too early for the world?"

You know? And you said, "Maybe it's too early for the world." But, you know, this is science and religion together. This is what Ken Wilber said, "I'm in quest for this quiet corner of the universe or the creation where the eternal battle between science and religion stops. I'm in search for this quiet corner." And you're in search for this quiet corner as well. And it is wonderful.

Y: He wrote a lot of nice big books (B acknowledges.) to help that.

B: Ah, yes. I have them. *Project Atman* and so on. My point was, you know, you are telling to people, “You are Gods.” What your basic idea, one of the basics, is, “You are God.” And you could not expect that this won’t shake the world somehow (laughs) because you are offering them ultimate freedom. You say to them, “You are the known and you are the knower. And you are even the knowledge itself. You are the lover and you are the beloved. You’re Li and you’re La. And you are in Lila which is the creation. You’re the actor of the game, but also the creator of the game. And you have responsibility. **[Recording time 21:28]** And it is not easy to say something like that, you know. Maybe you should be happy just not to be crucified. (P and B laugh.) And so it is like this. It is not easy to accept this amount of love or freedom. The capacity should be sufficient in order for the people to accept this.

It is like this monk who asks his master, “How could I get liberation?”

And the master said, “Who binds you?”

“Nobody binds me.”

“Then why seek liberation? You are already free. What you are searching for is already here.”

So it was another point besides the gratitude I feel for these sessions. And it was a great pleasure for me. And I enjoyed really every minute that I spent here.

And now the summary, what I have written here to remind us: First of all, of course, you do this in your article *Science and Religion* and their mutual quest for truth because they both, scientists and priests are in search for truth only in different ways. Science operates through models and measurements and simulations and modeling and so on. And religion has its own means. And as you mentioned this morning, also physicists are busy doing physics. And really scientists are busy doing science, and priests are busy doing prayer. And it is not easy for them to give up their quest for truth and to have truth. (B laughs.) They should lose their quest. So this is first actually which if we both write an article needs to be stressed. Then of course particle physics, too, because this is the strongest support.

Y: Any specific about particle physics you think we should include? Should we try to include it all or just some part of it?

B: First of all, all that you have done, it should be stressed. It should be more emphasized and supported with new, Both results obtained in terms of Lila not only and then compared with measurements, but also, what I was presenting this morning about this confinement about the...

Y: The color confinement?

B: The color confinement. Yes. It is beautiful...

Y: What about the vectors?

B: The vectors also. I have it here.

Y: OK.

B: It's just the beginning. It will require more, but still here also vectors could be used. When looking at your articles, it could be always observed as a vector. All of this could be observed as little vectors. (Y acknowledges.) And actually this is what they are because they are little forces, I mean, once we associate physics into picture. Otherwise, it is timeless and so on. But my idea was since in this confinement hadron, in this chromo dynamics, SU(3) symmetry is included. And since this symmetry is also included through matrices, and they are matrices of type 3 times 3 which is visible here in these pictures of quantum chromo dynamics (Y acknowledges.) because we have here, for instance, for the baryons, we have combinations of up, down and strange quarks. These are three quarks. And the symmetry includes 3 times 3 matrix, (Y acknowledges.) and so on. So... **[Recording time 26:33]**

Y: But what should we do with it?

B: First of all, deeply understand it. But it will take a lot of time, for instance, to associate with the matrices.

Y: Yes, I think so. But should we do anything before that, that doesn't require that much time and work?

B: The other directions of mutual work which is Monte Carlo method (Y acknowledges.) integrating the inflation curve which... (Y acknowledges.) But I must stress that it won't be straight forward because of the dimensionality. This will be the problem. It is not the problem that the curve is not explicitly defined. The integration still could be done with elementary pieces of surface under the curve. But dimensionality will be the problem, the dimensionality. And it should be done step by step, part of the curve and part of the curve, which is most, at least in my understanding, best defined is simulation with Monte Carlo method. (Y acknowledges.) It is well defined. We have the probabilities, accumulative probabilities should be found; then a GUT **[Recording time 28:06]** random number generators should be found. And now whenever you have simulation, you have always a question of validation of the model is included. But let us not worry about this now. But this is very well because you have already done it in your chart although the probabilities maybe should be changed or somehow. But it is done. And so it should be done now with computer. Only again, the dimensionality is a problem... the dimensionality... (Y acknowledges.) because we are dealing here with 10 to the e to the pi and this is the problem. Animation, for instance, for the beginning, we are not that ambitious.

Y: And what would we animate?

B: We might animate the – a pity I don't have this program—for instance, the American Flag program (Y acknowledges,) for finding pi with throwing away little... **[Recording time 29:18]** is animated; there is animation.

Y: Well, you could animate various parts.

B: Yes. Various parts somehow although to make it... This is just like make-up, you know. It is not the essence; it is for the beauty of it. But it is still worth pursuing, I believe, to have some animations, to have something attractive.

Y: Say we had an N of 100. Then you could just have the nodes. And then (B acknowledges.) it would gradually add arrows. (B acknowledges.) And it could stop and say, "Look. This one has a curve." (B acknowledges.) And do another one. And keep adding (B

acknowledges.) And “Oh, now they’re crossing over!” (B acknowledges.) Show the evolution. (B acknowledges.) So, not only do the Monte Carlo program for precision purposes...

B: ...but visualize...

Y: ...but visualize so people can say, “Oh, I see what you’re... These aren’t just numbers!” (B acknowledges.)

B: One of the doctoral candidates, he has done this animation somehow, for metabolic processes in cells. And it is even more difficult to do because these cells have more than just two choices.

Y: It’s very complex.

B: Yes. And now he should just cut some of the properties and leave just essential properties of denials and non-denials. (laughs) (Y acknowledges.) Now I must think practically because...and not to burden them too much, you know, (Y acknowledges.) with something so much new and so much profound (Y acknowledges.) because this is profound; and they might get frightened. (All laugh.)

Y: Step by step.

B: Step by step. I should encourage them to say, “This is just the same as you have done only less difficult,” (laughs) so-to-say. It is more difficult; but it is profound.

Y: All right. That’s animations and PowerPoint.

B: Animations. Then in order to have a... PowerPoint presentations, (Y acknowledges.) yes, this was also my idea, maybe not to start with such ambitious plans, but first beautifully present all that had been said during these sessions. And you will check this and say, “This is not relevant, this is not relevant” because maybe I’ll include *Theory of Chaos*, *Gödel*, all my favorite subjects and connect them somehow; and they are connected. At least they are picture of the barriers in contemporary science. At least they should be included in order to say, "You see, the contemporary science has this limitation, then this limitation, then this limitation." *Theory of Chaos* shows us that slight changes in the initial conditions give us dramatic changes in the dynamics. Whenever you have recursions, you might have doubling of the periods and reaching edge of chaos, and so on and so on. (Y acknowledges.)

But it could be done beautifully. It could be done beautifully in order to have something, in order to have something as a result of these sessions. I mean, we will have, but to have it sooner (Y acknowledges.) as an encouragement...

Y: ...because it doesn’t need all the animations and everything for the first step.

B: Yes. ...for the first step to have something completed. And we could say for this hundred hours of Lila, we have done this and this and this. So, Monte Carlo...

Y: Next one.

B: ...logic, matrices. We have done several steps, defined.

Y: What might you do next on that?

B: Next...

Y: ...write an algorithm that will search for F numbers? F2, F3, F4, F5.

B: Yes, this is one thing although we have them, but OK yes, this. And then explore finding the Hamiltonian...

Y: Yes, but are they right? (B acknowledges.) They're probably right. (B acknowledges.) But that's not a simulation check. And I don't know if all the stuff that Michael Baker has done – like on when the first circuit shows up at point $9N$ ($.9N$). I don't know if that's right. I had Bret do some and he got point 8 ($.8$) something, something. So, something like that when you're doing the Monte Carlo...could check to see if that work is accurate (B acknowledges.) and/or was there an oversight? "Oh, we didn't think of this!" These things we're doing but interfering with each other somehow.

B: Yes. Interfering and doing patterns sooner than the expected number shows.

Y: Yes, or later.

B: Or later. (Both laugh.) I had in mind regarding matrices... The written for the Hamiltonian, we have; but it should be done. It is more to be done to find the largest Hamiltonian.

Y: Now, here's a practical question before I forget. If we have a simulation for something to find something – you write a program – is it possible to make a generalized program that you could then modify slightly and ask different questions? "How many arrows for this? (B acknowledges.) "How many Individuals for that?" (B acknowledges.) "Does N , the magnitude of N , make much difference or can we just do it for ten thousand or one thousand rather than a hundred thousand or a hundred million N ? (B acknowledges.) "Does it really matter how much it is; or can we get it pretty accurate without getting too high in N ?" So you can ask various... Can you have a general program that you can ask different questions of?

B: It is now... This is a jump into artificial intelligence. Up to this point, we were talking about informatics, informatics programming. But to have such program, as you require, it is a jump into artificial intelligence. It requires an expert system, knowledge based. Maybe this Fuzzy [Recording time 36:50] logic could help because in Fuzzy we have linguistic – somehow linguistic input. But this linguistic input should be associated with a set, with an input Fuzzy set. And this input should be connected with a knowledge base. But still, the program won't give us something which already is not entered into it. (Y acknowledges.) So you couldn't expect that he will come with some very smart conclusion. He will just redefine which is given to him. He will just give it maybe for a bigger number, and so on.

Y: Now you know I've mentioned to you the Santa Fe Institute on...they specialize in non-linear systems and artificial intelligence, artificial life, complexity, chaos theory. And it was started by Murray Gell-Mann. And he's still the advisor to them. (B acknowledges.) They have quite a staff now and quite a place in Santa Fe, New Mexico. And they've developed a program called Swarm [Recording time 38:15] (B acknowledges.) And it works in Java. (B acknowledges.) And they have a way of being able to ask different questions of it. (B acknowledges.) Or make small modifications instead of having to write the whole thing. (B acknowledges.) You make a small modification; and then you can get directed graphs instead of non-directed graphs, or vice versa. (B acknowledges.) So, I don't know if that might be

worth looking into. I mentioned it to Bret, but he always... When he saw a little bit about it on the web, he decided he wasn't ready to handle it.

B: It is certainly worth having a look. But how could we use it? I mean should we...

Punita: You can download the source-- the application.

B: Then it is great.

Punita: Yes, in fact I had sent you an e-mail with that; but I'll send it to you again. (B acknowledges.) And...

B: If it is possible, yes, by all means because we are dealing with this, actually, with complex networks with...

Y: It might save a lot of time and effort, (B acknowledges,) Also they may be interested in what you're doing in Macedonia.

B: Maybe. And once again, I want to correct myself when I mentioned *Theory of Chaos* just...

Y: Mentioned what?

B: *Theory of Chaos* – now. Previously, I have mentioned *Theory of Chaos* (Y acknowledges.) in terms of it is illustrating the barriers of contemporary science. But it is not just that. The *Theory of Chaos* is in many different ways connected, associated with Lila. If nothing else, for instance, when we are doing recursions for formula for expectation when we have F square this and this and this multiplied to e to the same F over R. (Y acknowledges.) So we have recursion. Whenever we have recursion, we are dealing with...maybe with possible chaotic behavior into the system and so on. And in many other regards *Theory of Chaos* might give us results because we are...

Y: What?

B: The *Theory of Chaos*, I mean the *Theory of Complex Systems*, (Y acknowledges.) not chaos. When people hear chaos they have different idea. I know you have read a lot of it. You have books here. But it is... We are dealing with creative chaos, actually, with non-linear behavior of complex systems. (Y acknowledges.) And what we have in Lila is a subsystem. I mean, once we introduce physics apart from the philosophic and metaphysic...

Y: Does that tie in at all with self-reference?

B: What? Pardon me?

Y: Does that tie in with self-reference?

B: Yes, yes.

Y: Will you make the connection for me of complex systems...

B: I might...and self reference?

Y: ...and self-reference. **[Recording time 42:18]**

B: We have mapping...once always we put the output as an input...for instance, in Fractal Geometry when we get these beautiful pictures of fractals, we always...the output of the system put... For instance, for instance, how Mandelbrot set – which we have seen (Y acknowledges.) also in regard to Fibonacci numbers and so on...this is the Mandelbrot set which is a card weight. **[Recording time 43:00]** How is it obtained? It is obtained by a very simple formula which is dealing with complex numbers--which says the complex number Z squared is sum input. For instance, X squared – or because it is self-referent, z -prime squared is z squared plus C squared. Both z and C are complex numbers and C is a constant. (Y acknowledges.) So when we square a complex number, for instance, this is X plus iY squared. This will give us X squared minus Y squared because this part has (i) squared which is minus one (Y acknowledges.) This is the real part plus $2iXY$. So $2XY$ is the imaginary part of the number. And we start – in order to obtain the card weight (Y acknowledges.) – with a dot on the monitor with coordinates X and Y . This is the first iteration. For the second iteration into the same dot, not another dot of the monitor, but the same pixel – for the same pixel, we replace the new input with the previous output. For instance, for new X , we put X square minus Y square; and for the new Y , we put $2XY$. And so we got the second iteration. Then the third one, then the fourth, and after thousand iterations, here we have self-reference. This is self-reference (Y acknowledges.) because we put the output as an input, output as an input, output as an input and after thousand of such iterations, we check how distant the new obtained coordinates are from the initial ones. And we say, "If you are so and so – for instance, you are a thousand times bigger than the input, then put yellow. Then let this dot be yellow, if you are ten thousand, then red, if you are five thousand, then green," and so, obtain different colors. (Y acknowledges.) So for each and every dot or pixel of the monitor, we do, for instance, thousand iterations. And depending on the result, we color this pixel with yellow, red, green, blue, and so on. And we got all these different colors. So this is one point to introduce self-reference.

Y: Now to say... You're saying the self-reference because you refer to the same pixel a second time.

B: Yes, because the procedure is, you know... I have first for first iteration, I have X zero is X , my X , the coordinate of the pixel. (Y acknowledges.) And Y zero is Y , the other coordinate. Now I apply the formula for card weight, for Mandelbrot set, which is the new complex number squared is the previous one squared plus a constant. (Y acknowledges.) And now when I square the input which is a complex number, it is X plus our famous square of minus one iY . When I square this because the formula requires for Mandelbrot set, this I'll obtain. The first number squared is X square. The second squared is (i) squared which is minus one Y squared. So I got plus Y squared. So this is the new real part of the complex number. This is the new input. This output will be the new input.

Y: Now, my question and I'll reform it again because I've understood that. We'll go one more step. How does the second one know there was a first one?

B: Because this is X zero and this is Y zero. For the first one...

Y: Yes, that's the mathematics. But it's the mathematician that makes that specification.

B: Yes. The one who is doing the program sets initial...

Y: Well, I'm trying to see if we can get self-reference with or without a mathematician. I don't think you could.

B: You mean observer and observed?

Y: Well, it's this pixel dot here, (B acknowledges.) and if there's a formula that generates the second one ...

B: Not the second one, the same. We have...

Y: How does it know it's the same?

B: This is for me to decide. I say...

Y: Yes, that's my point. (B acknowledges.) So what's the self? The self is you.

B: The self is...

Y: ...the one who decides.

B: The self is... I got this yellow color which I obtain for the pixel is information actually; this is not just a picture or something beautiful.

Y: Yes, I understand.

B: It is a deep mathematical information and it is an information how far away I am from the initial point when I'm doing self-reference.

Y: So you're referring back to how you were?

B: Once again I understand you...

Y: I'm after the self in the self-reference process.

B: Yes. I'll tell you in other aspects. First of all, Gödel is the most obvious and the mathematics connected with Gödel which is another consideration. This is where self-reference is clearly recognized, but in chaos also. So, we have X-zero, Y-zero. Then we have X-one which is a function of this X-zero, Y-zero, then X-two which is a function of X-one, Y-one. This is all self-reference; it is all self-reference. (Y acknowledges.) Then we have X-three which is F of the previous one, X-two, Y-two. And so on and so on. And after thousand iterations I say, "If you are now so and so... If you are now, for instance, ten thousand units far away from the initial, then you will be yellow. If you are five thousand, then you will be red."

Y: I see that.

B: So the color is showing me the distance from the initial point.

Y: But I'm suspecting though, that there is a hidden assumption.

B: Yes. It is the formula. I...

Y: It's just like with one plus one equals two, there's a hidden assumption. (B acknowledges.) And here, there's a self-reference (B acknowledges.) that this one has knowledge of this one.

B: The F is the knowledge; F is that hidden... There's something else I have never come to

this point, and I planned to introduce it. Never in this sessions I had opportunity to present to you. But it is very important. **[Recording time 52:20]**

For the non-linear systems... For the linear systems, the solution is straight forward. But each and every non-linear system is different from the other. And this is why, for instance, **[Recording time 52:34]** James Gleick, in his book *Chaos: Making a New Science* says, "To say non-linear is the same as to say this animal is non-elephant animal." (laughs) This is not an information. To say 'not linear' is to say 'this is not elephant...non-elephant animal'. So it says nothing because each and every system is unique. Cat is a cat; dog is a dog, and so on, and just the same with the non-linear systems. (Y acknowledges.)

But – there is a 'but' – but Mitchell Feigenbaum, who is considered to be a genius actually, has found a hidden, as you say, a hidden knowledge, a hidden constant into these non-linear systems. For instance, we have been observing another type of self-reference, remember, which was Y is X. And we have this curve, (Y acknowledges.) and then we have the fix point to the curve, (Y acknowledges.) and so on, and we got... It is self-reference also; another type of self reference. And by doing this and by moving the maximum of this curve upper and upper, we got the logistic curve which is: we got this, then we have the doubling of the periods, then we have doubling of the doubling of the periods – which is all due to self-reference. Then we have eight-fork structure, then sixteen-fork structure and so on and so on until we reach the edge of chaos (Y acknowledges.) which is λc .

And now, Mitchell Feigenbaum, and before he does it, Robert May **[Recording time 54:40]** has found that this is like Fibonacci, but somewhat different. For instance, this distance to this distance – the ratio of the distance to the first bifurcation towards the distance to the second bifurcation is the same as the distance between the second bifurcation and the third bifurcation.

Y: The ratio is the same.

B: The ratios are the same (Y acknowledges.) which is very similar to our recursions (Y acknowledges.) which are also Fibonacci because every new recursion includes all the previous ones. Every new includes all the previous one. (Y acknowledges.)

Now, it is not the point yet. This was... And further on and further on if you proceed, you have the same ratio. And this number is known. It is called *Feigenbaum number*. But it is not the point still because it was discovered by Robert May, for instance, in biology systems because this is a productive prey **[Recording time 56:00]** system. When we have oscillation – the wolves are eating the sheep, the sheep are eating grass, and so on and so on. When we have oscillations like this, we have always chaotic behavior at some point. So this was known it is not the point. The point is that this same...for instance, if this is X_N , this is X_N plus one, this is X_N plus two. We have a constant delta which is Feigenbaum number which is X_N plus one minus X_N over X_N plus two minus X_N plus one is a constant. This is Feigenbaum number.

But the point is more deeper – deeper yet. The point is that this same number delta could be found also in other non-linear system. For instance, this one was, if you remember, X_N plus one is αX_N one minus X_N . This is one non-linear system discrete. But the same delta which is Feigenbaum number could be found in quite different non-linear system. For instance, sine of X_N plus one is α sine of...of something – of $2X_N$ or sine X_N plus one is α sine of one over X_N which is also self-referent because we are always taking the previous output as an input for the new value. And this is quite different. This is polynomial **[Recording time 58:04]** X_N squared, and this is sine, this is vibration. They are totally

different. It is like non-elephant animal. What is a cat? The cat is a non-elephant animal. (Y acknowledges.) It is fully different, but the constant is the same. And just the same as you are doing with your calculator, Feigenbaum was famous by his calculator because he has done all this on calculator because... (Y acknowledges.) (B laughs.) when you are creating something, it is not the numbers. Anyone could do the numbers, but the idea. And the idea is what is ingenious; also in Lila. So you are finding your numbers by calculator because the idea is in the process...in the model. It is not in the numbers. The computer can do numbers; or any average mathematician with not such great brilliance could do the numbers. It is not the numbers, but the idea.

And so, there is something hidden into the non-linear systems. It is something hidden into these non-linear systems because they have a same constant. This is just like pi or like e – Mitchell Feigenbaum's number. (Y acknowledges.) So it is order in chaos. It is not just a story to say it is chaos out of order or order out of chaos. It takes time, really, to see this. It takes time. It should be seen really deeply. So there is something hidden which brings... which is connected with the self-reference. I'm sure in our systems, in our recursions, if it is done correctly, it could be found. This Mitchell Feigenbaum's number could be found into our recursions. (Y acknowledges.) And this is that hidden knowledge in the systems. It is like a constant.

Y: OK. That helps to understand what self-reference has to do with in those non-linear systems. OK. You were going down your list.

B: Now, next chapter, first matrices. Maybe merging of the circle, merging of the circuits, then topology to clearly distinguish between crossover and circuit because as we have seen even in the most introductory one – which is like a symbol for what we are doing for space, time and so on. Even here, if I take this out, what was crossover will become a circuit. And what was circuit, this too will become crossover. For instance, this is A, this is B, this is C, this is D. This is A, this is B, this is C...hmm, C to D.

Y: Right there, between those two.

B: C to D [**Recording time 1:01:46**] Aha. They go around C to D – yes, C, A. So somehow in matrices for instance, in matrices to recognize what is crossover, a clear definition should be given. This is D, this is A and I have A to C; A to C. So this and this is amorphic. (Y acknowledges.) Is amorphic graphs, A to C is [**Recording time 1:02:34**] this. So when I was doing these little examples with the matrices, for instance, small circuit of three arrows and origination from this baby universe to another small circuit. And this in matrices should be recognized and not lose the basic information which is which Individual knows what. Here once we have circuit. Each Individual has a pathway to another Individual or had the in overall [**Recording time 1:03:10**] reducing of the consciousness.

Y: I remember. What do you say should be done, a clear definition of what?

B: A clear definition, a definition of crossover.

Y: Well, is crossover in this case what makes a circuit or what makes a merging circuit?

B: I have a pathway here which closes here. My idea was...I have one...because in our new matrix theory, so-to-say, regarding Lila, we have our...the members of the matrices are not the agents but whole assembles. (Y acknowledges.) So this is a whole assemble which is G-one. And this other baby universe of three is another whole assemble which is G-two. And now I go a layer up and I say, "The baby universe G-one originates itself into a state of direct

knowledge of the baby universe G-two.” And I say also, “The baby universe G-two originates itself into a state of direct knowledge of the baby universe G-one with a crossover. And now everyone knows everyone else. But these two arrows which have been initially seen as crossovers might be just members of the circuits.” Although here, yes, initially they were crossovers, but now we have a circuit and the crossover, it’s another [Recording time 1:05:16] arrow. And we come here to the G-two and now the crossover is another arrow. This same arrangement of two baby universes now...

Y: I think you have to just... To answer that question, you have to back up one step. And it’s a bifurcation. (B acknowledges.) If you have a precise definition of a bifurcation, I think that will answer the question of what constitutes a crossover of a circuit. It will follow from an understanding of bifurcation.

B: Uh huh. Yes. We have one bifurcation here. (Y acknowledges.) And we have another bifurcation here.

Y: And the bifurcation is not going to change no matter how many more arrows you put in.

B: Let us see if it is just one bifurcation – just two of them here. We have one bifurcation here and we have another... Aha! It closes itself. It doesn’t go... It closes itself because the arrow is here.

And let us see here what happens. You go here and then you have bifurcation here at A to C. (Y acknowledges.) You go this way... You’re circling this way and now you have bifurcation here and here. It’s not... The bifurcation is here – C to D. So the bifurcation is D to A. We have bifurcation from A to C and B (Y acknowledges.) bifurcation from A to C...

Y: ...and to D.

B: And B; C and B primary.

Y: B, yes.

B: To C and to B, this is one, and the second one...

Y: There’s no second.

B: Here it is not? No.

Y: There’s only one bifurcation.

B: Here it is not a bifurcation. It is...

Y: That’s a circuit.

B: ...a circuit. A, C, D is a circuit. We have here a circuit – A, C, D. We have a circuit here A, C, D. (Y acknowledges.) D to A, D to A, D to A, A to C and C to D; circuit here

Y: All right, so that needs study (B acknowledges.) and definition (B acknowledges.) and deeper understanding (B acknowledges.) OK.

B: So this should be second step... I mean one of the directions to go. (Y acknowledges.)

Then I have written here, “Integrating the inflation curve size of the universe.” **[Recording time 1:09:09]**

Y: Yes. I’ll do a lot of that. (B acknowledges.) I’ll organize everything I have, (B acknowledges.) pass it along to you; and you see what you do with it. (B acknowledges.) Next one...

B: Networks – Complex networks, finding pathways, Hamiltonians, merging circuits, random number generating, dealing with dimensionality.

Y: Dealing with what?

B: Dimensionality.

Y: Dimensionality.

B: This will... maybe cutting the... when searching for the size of the universe, cutting the inflationary curve into pieces... (Y acknowledges.) ...then vectors and the Lila Field Theory... introducing Field Theory into Lila.

For instance, what I have not mentioned when I was presenting vectors was in electromagnetic fields and in the electromagnetic theory by Maxwell – and in Maxwell equations somehow... You have vectors, for instance. And once they are for the electric part of the wave and the normal one, normal to this one are part for the magnetic. And there are mathematical apparatus. There is defined, for instance, divergence of the en router **[Recording time 1:10:39]**. This is like integration over vectors. This is a whole Field Theory. And I don’t want, as Don mentioned, in these mathematical considerations we should not have a gap between this and the basics of Lila which is reduction of the comparison between the substates and consciousness, and the rising and overall state of consciousness in the Individual... **[Recording time 1:11:21]**

Y: So different reductions will reduce different vectors. So that it is a part of the third level – in Lila.

B: It really is. It is third level. And it will require time and people who are dealing with electromagnetic field, electromagnetic theory and so on.

And then all these considerations we had for a better understanding for the sake of the reader to be user friendly, to build a user friendly presentation, to use spheres, cylinders for different substates. For instance, when we are presenting movement...what is... for instance, time and space, let us say are easy to understand. But then movement requires comparison of the substates...(Y acknowledges.)...first, comparison of the direct knowledge and the consciousness of the particle which constitutes an overall state of consciousness for the referent Individual, and then all the substates, and then to present these substates in different levels of a cylinder where the surface of the cylinder will be present time.

Y: I think we can also take these different substates and have them each be a section of the matrix...of the matrices, (B acknowledges.) the substates and then how they associate with each other. And some associations you’ll get in motion. You’ll identify what constitutes motions as these two particles are moving with respect to each other as I was drawing yesterday. And these will be the quarks. These will be the leptons. (B acknowledges.) This will be neutrino. And you’ll see those patterns show up in your matrix. But you have to know what patterns they are. (B acknowledges.) You’ll have to find that out. **[Recording Time**

1:14:09]

B: Yes, yes. And then find out the 27 bosons (All laugh.) which are to be expected.

Y: There's so much work to do. We'll have to do some prioritizing of what comes first, what comes second, not only for the purposes of other people but for the purposes of our own interests because you work best on something that you are interested in doing. You say, "I want to see what happens with this." So part of the prioritizing can be taken care of that way. Or if you say you need to have something from me, then I'll put that higher on the list because you're asking for it and vice versa. (B acknowledges.)

B: Uh huh, OK. Thank you, thank you.

Y: Anything else on your list?

B: Ah...topology.

Y: Topology.

B: And also I have written here, "Path of self realization. Stress that this is part of our path of self realization and this which"... I have written also philosophy.

Ah, boullion [**Recording time 1:15:54**] functions. There are boullion functions which should be introduced. Then maybe make comparison with....model of quantum dynamics of the brain...

Y: What about connections to quantum theory?

B: Yes, it comes first, this. And Gödel, Gödel is my favorite. (laughs)

Y: Yes, I gathered. (B laughs.)

B: Connected... present maybe in this article. As you say, priorities. First write a bigger article in which we shall introduce first what we know, and then for the years to come, start all these...

Y: ...projects.

B: ...projects because they are huge and always [**Recording time 1:16:54**] will be required.

Y: OK. For our last subject I want to talk for a while about all things. I'm going to talk about self-reference. (B acknowledges.)

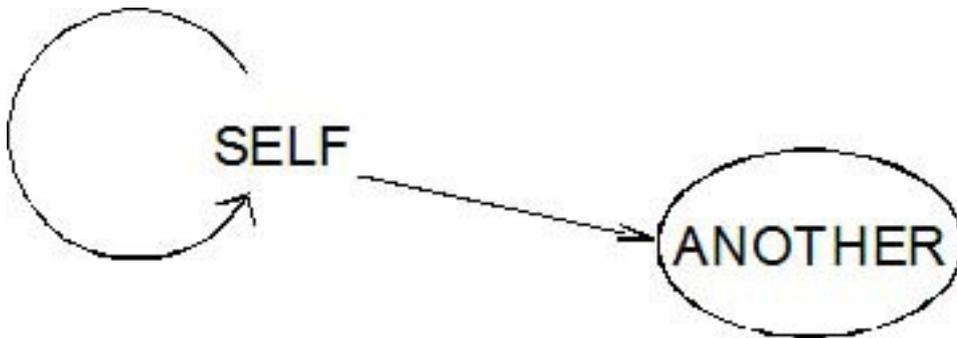
Self-Reference and Accepting More Others

Y: For the last subject, I want to talk for awhile about self-reference and its importance not only to the [Lila Theory](#) but also to [Enlightenment Intensives](#) – to people's personal evolution and growth.

We have the Self and then we have the self-reference. [[Charles writes 'Self' and draws a circular arrow from that 'Self' to itself.](#)]



Then we have an action from the Self to another Individual. [Draws a straight arrow from the 'Self' to an oval labelled 'Another']



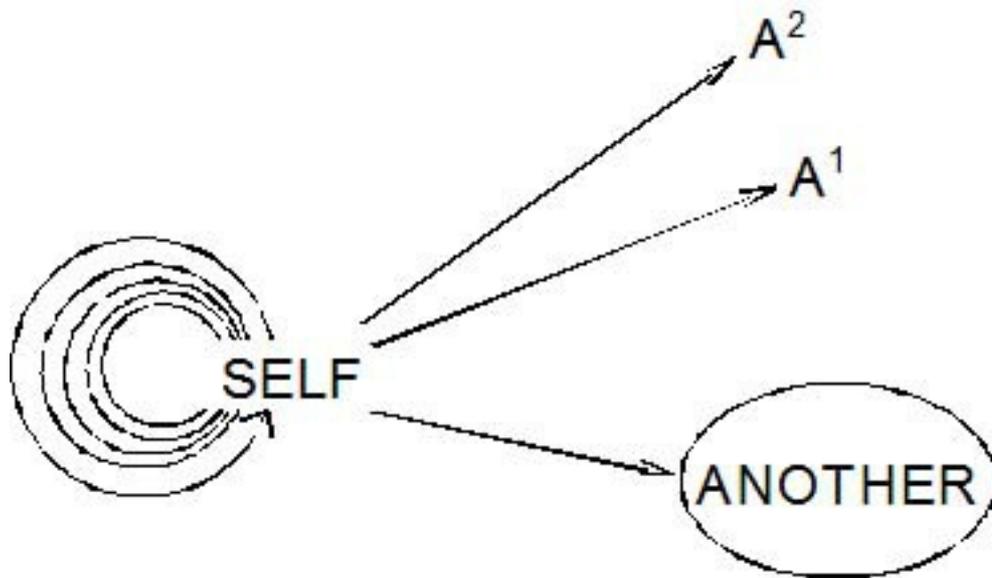
That is *not* self-reference. There is a whole study that can be made about self-reference situations; and I'll make some comments about that. Then there are all the non self-reference activities. But both are important.

When one attempts to be conscious of one's Self, usually what happens is that the Individual is *not* conscious of one's Self but is conscious of something he believes, thinks, or has been told that he is. One man, a businessman, came on to an Enlightenment Intensive, and after about an hour, he pulled out his wallet and opened it. "That's me, my driver's license; that's my picture. See! My name right there." It takes a long time to de-identify before they are *actually* doing self-reference. They get the 'who' enlightenment and then they get the 'what' enlightenment; and there are many layers of that. When they get a deep enough self enlightenment, maybe two or three steps of self enlightenment on 'what' they are – not on any other question, just 'Who am I?', 'What am I?' – and they get the what, the what, the what, maybe two or three levels of that. [Draws several circles from the 'Self' to itself]

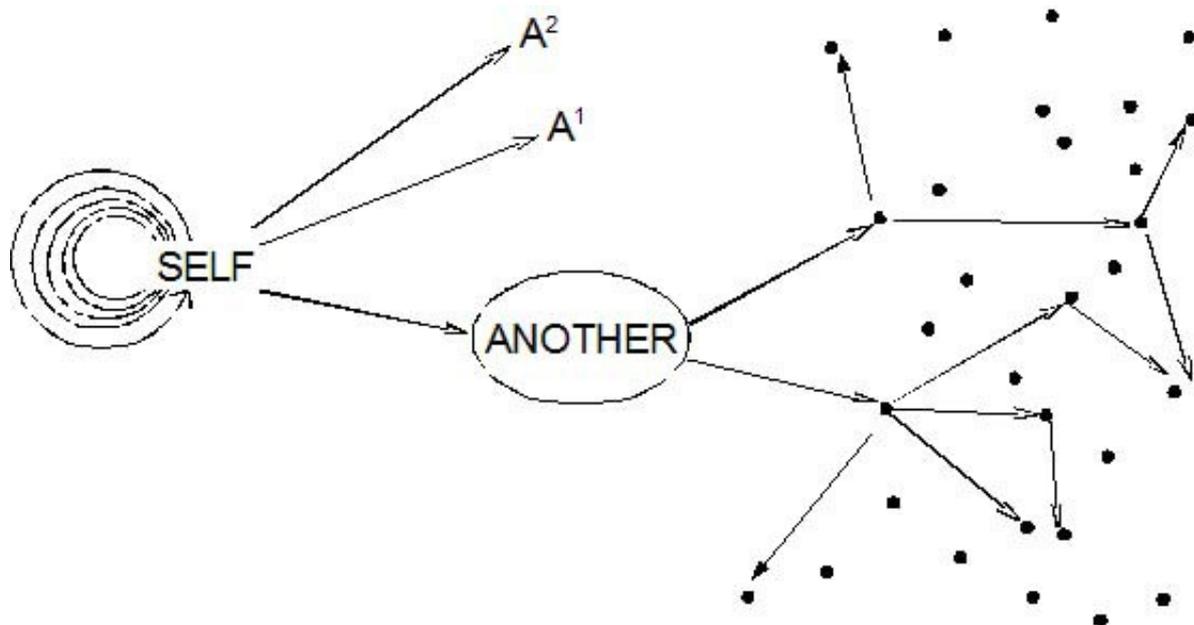


For practical purposes that is enough because another factor starts to cut in. What starts to happen is that the kundalini starts to awaken. The kundalini is the evolutionary force. It is prana and apana combined together. Or you could say, it's shakti, the divine power. And in its beginning form, it is experienced as sexuality, the sexual urge. They may say, "Well, I just want to be loved, or I want to be petted, or I want something." But underneath that in its beginning form is the kundalini. The kundalini is the sexual urge. To try to do more self-reference work at that point is not very valuable. You have to do more of the non self-

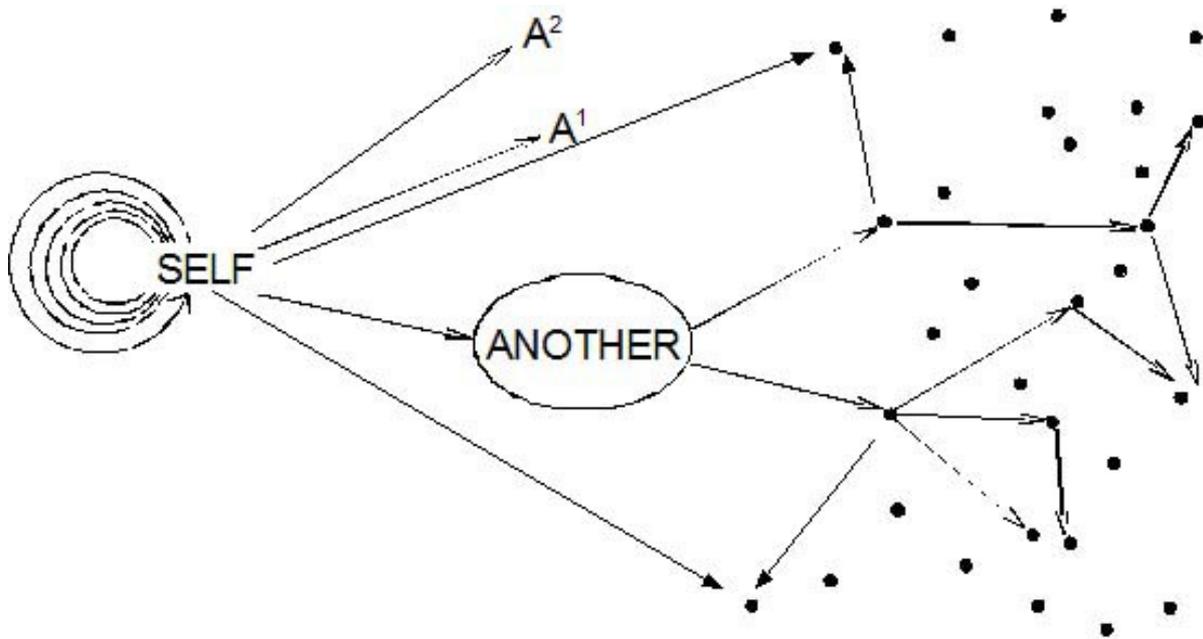
reference which has to do with referring to, or accepting, Individuals A1 and A2, [Draws straight arrows from the 'Self' to 'A1' and 'A2'] and more, and more Individuals.



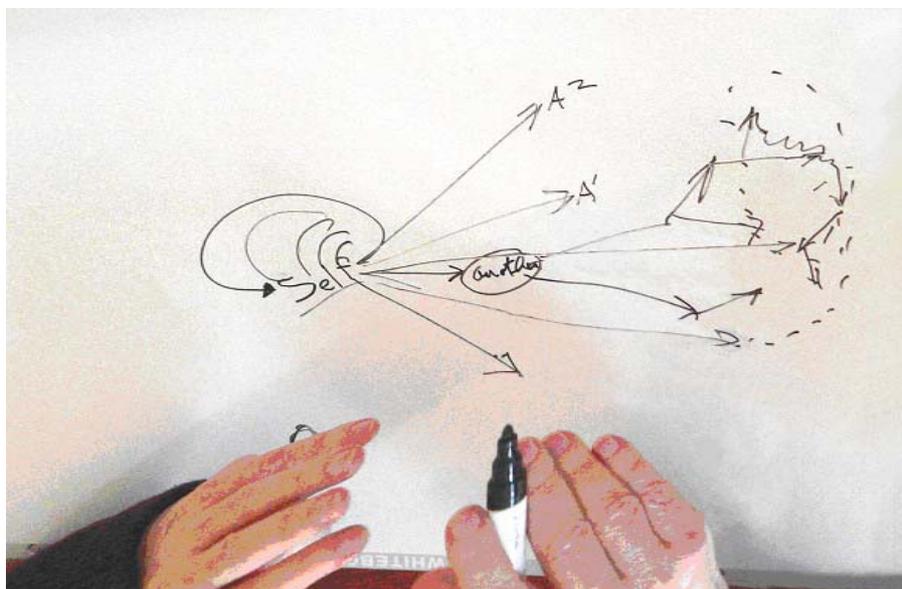
Yes, it's true that if the Self accepts just one of these others and is in a state of knowledge of that One, [indicates the arrow from the 'Self' to 'Another'] and that One is connected to somebody, [Draws two arrows going from 'Another' to two dots representing two other Individuals] and they are all connected like this. [Draws more arrows from those two dots to other dots and so on]



The Self will have a big sweeping involvement indirectly. But that does not take care of the kundalini evolutionary-force power level. It will not advance. It will go in a circle and will not progress as long as he is not adding more arrows directly to all these billions of Individuals out here, to all these others that he is indirectly connected to through billions of pathways of billions of arrows length of all kinds of patterns and structures. [Draws arrows from the 'Self' directly to dots that the Self is already indirectly connected to]



So what he has to do is to choose to be in a state of knowledge of more and more of them. And each time he increases the number by a factor of five, he hits a crisis. 'I don't know if I want to go on'; 'I don't know if I'm suited'; 'I don't know if I'm fit for it'; 'I don't know if it's any good'. At that point, then he should do a little bit more self-referencing – 'self inspection' is what the yogis call it—because what he needs now is a deeper realization. So when he hits a crisis here, he should be encouraged to do more self inspection. [\[Draws more circles from the 'Self to itself\]](#) When he's got another deeper realization, two more steps of what it is that he is that he is – it gets more and more accurate – then he can start accepting more Others again.



There are many spiritual and religious practices that deal with self-reference. There are some that deal with his relationship to others in general – service to the community, karma, being kind to people, being helpful. And all those are necessary. But they are only as effective as his power level. His power level is how many others he is accepting directly, and that's how rapidly the kundalini will advance. Now with some Enlightenment Intensive masters, whether they be Zen Masters or whether they be spiritual advisors in the Anglican Church, or priests/advisors in the Catholic Church, or heads of monasteries in Buddhism, when this

kundalini awakens and the sexual drive comes on, what happens is they get caught up in this morass. [Indicates the network of the 'Self's' indirect connections] And they mix the spiritual endeavor of evolution with sexual involvement. The mixture of those two makes you go in a circle with kundalini and you do not progress. The kundalini has to go up the sushumna and gain stability. Self-reference is not sufficient. You have to get the power level. You have to know what creates this power level. How can you get more and more? You get more and more according to what level the sexual energy is purified and elevated, both – purified and elevated, higher and higher, and more and more of it. But then, it ceases to be experienced as sexuality per se and becomes purified. It becomes like Divine Love, and selfless love, and helpfulness, and relaxation, and serenity. But when you mix in the sexual feelings in the lower part with spiritual endeavors, as in modern Tantra, or have a party connected with an Enlightenment Intensive and indulge in sexual activities that are a carryover of an Enlightenment Intensive, it's wrong. When the attendants go home, then the Intensive is over. Then if people want to engage in sexual activity for pleasure, that's their business. But sex shouldn't be mixed in as part of an Enlightenment Intensive. It should not be mixed in any form, not just in Enlightenment Intensives—priests having sex with each other, for example. But their error is understandable because this has awakened due to their spiritual endeavors. But when they mix it up with their spiritual endeavors, it just goes back around again. And you just have the Wheel of Life rather than liberation. You discipline yourself, and then you indulge yourself; you discipline yourself, and then you indulge yourself. Sexual indulgence is the basic one. It underlies eating and all the other indulgences. They're even called indulgences. You pay the priest so much money and he gives you an indulgence that says you won't go to hell for what you've done. But you have to pay your money first.

Self-reference is good, [Taps the 'Self' with its circles] but it doesn't go far enough. Each of these, [Indicates the arrows from the 'Self' directly to 'A1', 'A2', various dots, and 'Another'] makes a new stage of knowledge. When you get enough of these, your knowledge and power increase to such a degree that you become a *siddha*, a master. And you can do without a body; *but* this is still not the end. By directly accepting more and more others, you are bypassing your dependence on all the intervening Individuals and you are getting free, more and more free, and more and more power. But these are still states of knowledge, and *you* are *not* a state of knowledge. Even though, by accepting yourself, you have a state of true knowledge of yourself, and even though you also have a conscious experience of yourself that gets reasonably accurate after fifteen, twenty, thirty or 200 experiences of yourself, that's still not you! That's a state of knowledge and a state of consciousness of yourself. When you give up dependence on consciousness by doing this, [Draws more arrows from the 'Self', each going directly to a dot that was previously not directly connected-to from the Self until all dots are directly connected-to from the Self] then you realize what has happened and give up knowledge itself and self-reference itself. And everything is just exactly what it is and you are completely and stably liberated. I wanted to share that with you.

B: Thank you so much. Beautiful!

Y: This is an evolution that could liberate mankind. Any questions, comments?

B: My gratitude's great.

Y: That's a summary description of what I've learned in this life. Now, I asked you to come here and I would teach you about the Lila Paradigm. And I am happy.

B: I'm happy too and I'm so much grateful.

Y: It's gone better than I thought it would. And it's largely due to your efforts.

B: Thank you so much. I have received so much. **[Recording time 1:31:26]**

Y: So, we'll carry on.

B: You're going to set up an e-mail address for me of some kind.

Punita: Yep.



Charles Berner and Biljana Perčinkova

Y: And then you will pass on things. (P acknowledges.) That way you will get a look at it and then pass it on to Perth during the coming... Well, I'll be here about three weeks. (B acknowledges.) And then I go to Perth for a month and then I'll probably come home not long after that. (B acknowledges.) But in any case, you just keep sending it to Don. And I'll be in e-mail contact with him. If nothing else, we even have a telephone in Perth. (P laughs) But you notice it doesn't ring here. No telephone rings.

B: Yes...which is part of the beauty of being here, (All laugh.) the sounds of the birds. (laughs)

Y: So thank you for coming.

B: Thank you. Thank you.

Y: In the next day and a half before you leave, if you come up with anything – any questions or anything – feel free. I'll be around. Not all the time, I will be meditating more than I have been. But then I'll be out after awhile, and we can talk informally.

B: Yes. Thank you so much.

Y: Until you go.

B: I'm so grateful. I don't know if I have expressed it enough, but it was really a great pleasure for me and a great honor to be with you. And really every minute was so fulfilling. I really have no words.

Y: Yes. We learned a lot of things and discovered some things to. And as soon as we finish a few more calculations, we'll have it from all the angles. (B acknowledges.) I think, though the numbers are secondary. It's the concepts. It's the ideas that are important. The numbers is just a way to have doubters say, "Well, maybe there is something to this after all."

And then they'll say, "But you're just doing numerology." (All laugh.) That's been said to me before because a lot of people do do numerology. There is that. But you have to check it and then as Reagan said, "And then verify." (laughs) That's a bad joke. (All laugh.) OK. Then we'll end it here, of the formal sessions, right here.

END