



**BASARAB NICOLESCU**

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**in**

**CONVERSATION**

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**BASARAB NICOLESCU  
HAROLD TERRY LINDAHL**

**with  
Susannah Hays**

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The following exchange between Basarab Nicolescu, Harold Terry Lindahl and Susannah Hays took place in Paris on December 19, 2011. Founded in 1987, the *Centre International de Recherches et d'Etudes Transdisciplinaires* (CIRET) is a non-profit organization whose aim is to develop research with a new scientific and cultural approach—transdisciplinarity—which lays bare the nature and characteristics of the flow of information circulating between the various branches of knowledge. CIRET is a privileged meeting place for specialists from the different sciences and for those from other domains of activity, especially educators. The full aim of the organization is expressed in their moral project:  
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## INTRODUCTION

**SUSANNAH HAYS:** I am joined with *Artist and Architect* Harold Terry Lindahl and *Theoretical Physicist* Dr. Basarab Nicolescu, at Dr. Nicolescu's home in Paris. We are here to discuss the premise for their independent, Humanity centered non-profit organizations. In 1987, Dr. Nicolescu, founded the *Centre International de Recherches et d'Etudes Transdisciplinaires* (CIRET). In 2009, Mr. Lindahl founded the *Intropy=Entropy Institute* (I=E). With roots in Complexity Theory, both share an understanding of G.I. Gurdjieff's science and methods for verifiable, self-observation. They agree the evolution of consciousness is brought by a 'third-force' principle that is constantly present yet not engaged. If engaged, they speculate Transdisciplinarity would come into fruition, consciously evolving our humanistic potential. In their exchange they coalesce a scientific, process physics overview of the human condition, blending art and religion. Mr. Lindahl begins by expressing the limitation of *Mystical/Eschatological* or *Empirical/Mathematical Reasoning* and the necessity for the Humanities to open to the rationality of a *Cosmopomoral-Organic Reasoning*. In Dr. Nicolescu's response, he clarifies how Transdisciplinary logic—the included middle—is the hidden force necessary for a syncretic integration that catalyzes unity of understanding.

### DEFINING TERMS and THE PROBLEM OF LANGUAGE

**BASARAB NICOLESCU:** I already have a problem with the expression—"Eschatological Mysticism"—this doesn't exist.

**TERRY LINDAHL:** I'm indicating two categories: the historical format of religion and the modern format of science—the concerns of our **Mystical-Eschatological** emotionality and rational scientific thought. These disparate disciplines have in common an **Anthropocentric** point of view. I am suggesting a Transdisciplinary perspective of **Cosmopomoral Organic-Reasoning** is in emergence and will come from the resolution process of third-force principles. You include a moral force in Transdisciplinarity and it's interesting to note there are no Gödelian type exceptions in a process universe.

**B.N:** Of course, yes.

**T.L.:** So, by *Cosmopomoral* we mean, morality of the cosmos.

**B.N:** Sure, yes. That's right. But let me explain. There's already a question with the difference I make between Mysticism and Gnostic. For me, Mystical is a way of fusion with reality, divinity, whatever—higher-beings and so on. From the way I understand it, the Gnostic way is based on knowledge–effort and Mystical is grace. In that sense, I make a distinction. I don't use the word Mystical because of this difference. There is no other reason. Gnostic I can use. For example your favorite teacher and philosopher, Gurdjieff—in my opinion—was a Gnostic, not Mystical.

**T.L.:** Very much so. He was not Mystical—he was a Gnostic realist or something like that. All phenomena, even consciousness is material.

**B.N:** Yes. Gnostic, in the sense of effort, is the revolution of knowledge.

**S.H.:** Does the word **Sacred**, and its double meaning, function as an action, bringing this effort you are describing? Is Sacred a possible substitute for “Mystical”?

**B.N:** Yes.

**T.L.:** But we don't need another word, because we are basically in agreement that Mystical is what we need to get beyond. This is just what we are saying. Let's get beyond Mysticism. Let's get beyond, in the sense of Gödel's incompleteness theorems, to the real problem of completeness. We have to get beyond both mystical formulas and mathematical formulas. I think that is what we are trying to do.

**B.N:** Yes. You have the word Trans. Trans is Latin, which means at the same time: that which is in between, that which crosses and that which is beyond. So, it's three different meanings, at the same time.

**T.L.:** You use Trans in the sense of “beyond”, not necessarily in the sense of “across?”

**B.N:** Yes.



## TWO CURRENTS OF GREEK PHILOSOPHY

**T.L.:** Working with the Gurdjieff ideas, I'm not a mathematician, I'm not a physicist. I am an Architect—I build things. Speaking of first principles, which you know Gurdjieff speaks of, when the Autoegocratic Universe or World—whatever it was that transitioned—it re-arranged itself into the Trogoautocratic World. So, working with that, it dawned on me—and as a physicist you'll have ample opportunity to pin my ears back...

**B.N.:** You know I wrote a long paper on Gurdjieff called: *Gurdjieff and The Philosophy of Nature* [1984]. So, I recognize he is one of the big thinkers of the 20<sup>th</sup> Century and one of the few thinkers of the 20<sup>th</sup> Century who respected real science.

**T.L.:** Real science.

**B.N.:** Real science, not fake science. For him, real science meant something centered on Evolution. This is very important because, in fact, he went further to say—if he had to build a dictionary, the key word of the dictionary would be Evolution. In other words, all words must be defined through this simple word called Evolution. This is a point of view, which I think is very valuable and I adopted myself.

**T.L.:** Yes. It is the point of view we came to as well. This Universe is evolving—in all aspects. I like Lucretius—you've read Lucretius?—He says: Mankind is not a special development. And that was before Christianity. He was saying mankind was just another manifestation.

**B.N.:** Lucretius of course I read, and I respect, but I prefer Anaxagoras because Lucretius was what I will call anachronistic—he comes from anachronistic thinking. Anaxagoras was interested in the interactions of all things in Nature and the Universe.

**T.L.:** Lucretius was as well.

**B.N.:** Yes, but there are two currents at this moment in Greek Philosophy. One was towards separation and Anaxagoras was of course part of that. His was toward

separation and categorization and was one of the first to define Nature as being something independent of the human being. He is the first to define this information, which Einstein took much later to define with exactly the same words. And so there was a current there. And the different current was with people like Heraclitus, my favorite one, who described movement and change.

**T.L.:** And fire!

**B.N.:** Yes, the fire of change.

### **CONSCIOUSNESS IS THE ABSOLUTE CONSTANT**

**T.L.:** Well, to begin with, I wanted to suggest something I came to at a certain point in time that is challenging, but—Consciousness is the absolute constant, not light.

**B.N.:** Not light.

**T.L.:** Not light, not the speed of light.

**B.N.:** You want me to comment on that?

**T.L.:** Yes.

**B.N.:** Well, on a poetical and philosophical basis I would agree with you. The problem with consciousness was that it was a forbidden word in Science in the 20th Century. Only by the end of the 20th Century did it begin to appear again—WHY? Because consciousness was visualized by the scientific community as being something of a “magical” nature, which tries to organize everything. They did not find in the laboratory the magical factor, but now they have to come back to this.

**T.L.:** They have to, that’s right.

**B.N.:** And it is very interesting that this word is now coming back. And, I don’t mean words of clarification or presumption of something. I mean without scientific evidence the word was forbidden, literally forbidden. Now it comes back through a lot of discoveries, especially the work connected with Antonio Damasio. Damasio is one of



the main scientists who are bringing it back. To my surprise, I begin to see even in the Scientific Congress that it is called consciousness itself. But there is also a difference. And so perhaps we might discuss directly now, the heart of the matter. In general Scientists and Philosophers, modern scientist and modern philosophers speak of consciousness of something.

**T.L.:** Of something, right.

**B.N.:** To be conscious of a thing—of an object, something there, outside [making a gesture away from his body]. And now, suddenly there is no need of an Object to be conscious of—but just be conscious—full stop. And these two meanings, the second meaning is not yet officially in scientific framework, but it will come. It is in the sub-sciences, like psychoanalysis—especially in the direction of Jung and somewhat of Lacan, but generally in hard sciences, if you put Biology in the hard sciences, it is not.

**T.L.:** With Gurdjieff, we could ask: are third-force and Consciousness the same thing? Is Consciousness the finest possible binding of all positive and all negative forces?

**B.N.:** I think what I understand from Gurdjieff's philosophy, Consciousness is much higher than the third-force, in the sense that the forces, positive and negative postulating forces, are a mechanism for the evolution and the functioning of third-force. Consciousness is not part of the mechanism. It is something higher.

**T.L.:** I agree with that. But is it higher as a substance, a communicative binding between two forces?

**B.N.:** Of course. Consciousness is the science of everything connected, if I can play with the whole word of consciousness. Yes. [laughter]

**T.L.:** That's right. Now, for Gurdjieff to go from the Autoegocratic world to the Trogoautoegocratic world was a matter of the increased pressure of time.

**B.N.:** Yes.

**T.L.:** That forced him to make this re-arrangement. Now, in the Trogoautoegocratic world there is this reciprocity between—feeding, for example, the reciprocity, but in the world before, which we cannot really address, there was something and we've put the name Consciousness on it, right?

**B.N.:** Yes.

**T.L.:** But there was something that bound that world. Are we talking about a phase transition from some kind of homogeneous consciousness to a homeostatic consciousness?

### **COSMOLOGY OF GURDJIEFF IS A SYMBOLIC COSMOLOGY**

**B.N.:** Yes. I like very much this cosmology of Gurdjieff, which of course has not to be taken, I think, too much on the scientific level, because if it is taken on the scientific level, it would be easily destroyed in just a few minutes. And, in fact, this was done in books by different very hard thinkers who ask about these catastrophes, where are they in the geological sense? If you take literally what Gurdjieff says, it is nonsense.

**T.L.:** Nonsense from the scientific point of view?

**B.N.:** It is nonsense in the scientific context, but it has a very big sense if you take it in a symbolic meaning. For me, the cosmology of Gurdjieff is a symbolic cosmology. A symbol does not mean a sign. A symbol is like a cross, or a star, ceremony...

**T.L.:** It captures...

**B.N.:** Symbols capture an infinite number of aspects, which are not contradictory. They may seem contradictory, but they are unified by one and the same symbol. And in that sense it is a very interesting cosmology and in particular because, since you mention it, I was always puzzled by the role of *Time* in Gurdjieff's cosmology compared with the role of *Time* in science. I never understood, I must confess, perhaps

you understand, an assertion made by Gurdjieff who said in fact, *Time* does not exist. He said: Time is the highest subjective...

**T.L.:** The unique subjective...

**B.N.:** The unique subjective phenomenon. It depends, however, on how you understand this. The trick with Gurdjieff is that he uses terminology that is very Oriental in the sense of symbolic language. It is not our standard Western type of thinking, after the Renaissance. I mean it is nonsense in the context of scientific letters. Now, if you take the symbolic context it is very interesting because the symbol—*the subjective part*—is very important.

**T.L.:** Absolutely.

**B.N.:** After the Renaissance, the subjective is considered without value, because if something is subjective it has no reality, no haven—it is good just for entertaining, dancing, singing, and so on—but not truth. [all in laughter]

What is extraordinary is the shift in the scientific framework when at the beginning of 20<sup>th</sup> Century, when quantum mechanics suddenly appears. Exactly that moment, the relation between Subject and Object was very deeply questioned. And, we are still questioning it. The Subject looked more and more important in order to look and think about reality.

**T.L.:** Right. Piet Hut, do you know Piet Hut?

**B.N.:** No.

**T.L.:** Hut is an astrophysicist. Part of Stewart Kaufman and that group...

**B.N.:** Yes ...

**T.L.:** They're saying there is no such thing as an Object.

**B.N.:** That's nonsense I think; I am sorry to say. What they say is nonsense.

**T.L.:** No, no, I agree with you.

## **SUBJECTIVE/OBJECTIVE RETURNS US TO THIRD-FORCE**

**B.N.:** There is Subject, and there is Object ... [he says smacking parts of the chair he is sitting on—everyone laughs] there is both! That is the problem. To say there is no Object is against everything we know and experience. It's not true. There is Subject and there is also Object and they are connected—that is the point. Subject/Object means it's not true that Nature is something there outside, completely outside, which is independent of the Subject, if it exists or not, with the laws and so on.

**T.L.:** That's right.

**B.N.:** What is certainly building in the 1930's with quantum mechanics is an understanding of the continuous interaction between Subject and Object.

**T.L.:** Or Energy and Mass

**B.N.:** For example, and many other things. This is very big, because of Energy and Mass and other things, two scales are confronted. The big scale of the infinitely big and infinitely long, which is the scale of the Universe and the infinitely small, infinitely short of the quantum world. You put them together and the problem arises between putting the pressure on the relation between Subject and Object. And this means, we come back to the problem of third-force, that there must be a third to negate the interaction of the two.

**T.L.:** Exactly. And the third-force is a constant between both of them.

**B.N.:** Yes. Permanent.

**T.L.:** And it permits a movement of one into the other in the Gaussian sense, in Fourier transforms?

**B.N.:** Well, it is much higher than that, again. Much more general than that.

**T.L.:** Much more general.





**B.N.:** If we look at it just by Gaussian, it is just a mode of organization. The Subject/Object interaction is something extremely powerful. It means that when we see, for example, we try to see the quantum world. We are a macro-physical object. So, we have instruments to explore that, but instruments also—with what instrument is the other world? These are the worlds that interact. What we see are traces of that. So, it is a disconnection between the two scales. And these very subtle things, even today, it's very complicated to understand even for scientists who work on quantum fields. Even for Physicist. Why don't quantum mechanics and quantum physics understand each other? It's a very subtle story, this confrontation, in the sense that this confrontation brings a new reality.

**T.L.:** Yes.

#### **THE MOST IMPORTANT TASK OF OUR TIME IS A NEW MODEL OF REALITY**

**B.N.:** Alan T. Waterman is the first to mention that in the 1950's. He said the most important task of our time is a new model of reality. And there's no going back on this.

**T.L.:** Yes. And Penrose backs him up. And so did David Bohm.

**B.N.:** And many others, but they did not succeed. They are building models. No one has built a theory; no one has built a general explanation of that. No one publishes anything, which passes beyond quantum mechanics. So they tried. Prigogine tried, Penrose tried, David Bohm tried, other people tried. They failed. They failed because of a very complicated mathematical story.

**T.L.:** Mathematics. [chuckles] From a Gurdjieffian point of view it's not so ...

**B.N.:** From the point of *meaning* it is not complicated, but it is shocking.

**T.L.:** That's right.

**B.N.:** And I think the two are connected. I am happy you mentioned the name of Gödel. The 2 are connected. The mathematical difficulty, which probably will be

there forever. And, on the other side, the explanation, which is shocking, is the use of the discontinuity between levels of Reality. This discontinuity is very hard for people to understand what it means.

**T.L.:** Now, could I show you ... excuse me, please, go ahead.

**B.N.:** Sorry. Just to finish, Gurdjieff understood this.

**T.L.:** Totally.

**B.N.:** In 1916, with the groups he formed in Russia, it was written in *Fragments of an Unknown Teaching* [Ouspensky, 1949]. He spoke to the groups about quantum discoveries and discontinuities. It's very strange.

**T.L.:** Did he use the word Quantum?

**B.N.:** No, He used the term *New Physics*, which was the same at this period about this new discontinuity. It is clear he knew because somebody else did not inform him; Ouspensky informed him from a philosophical point of view, because he knew about this.

### **CARTESIAN CO-ORDINATES EXPLANATION**

**T.L.:** But now, I would like to present you with a model and see what a physicist would say. [Terry brings paper and pencil to the table].

**B.N.:** Yes please.

**T.L.:** [Terry begins to draw a graph] So, we take Cartesian coordinates, right?

**B.N.:** Yes.

**T.L.:** And on this one we put *Experience*. And on this side, we put *Existence*.

**B.N.:** Yes.

**T.L.:** So, as these interrelate, you end up with, the force of these two interrelating; [Terry starts pounding the pencil point to make a lot of dots on the paper] bringing the Gilbert field into more dots, begins to make a field. And, from the force they begin to collect along the power curve, right? So we call this *Life*.

**B.N.:** Okay.

**INTROPY of EXPERIENCE (ENERGY)**

STOCHASTIC  
COGNON FIELD

**BROWNIAN LIMITS OF SYSTEM-ENTROPY**

**P A L E O Z O I C**

**M E S O Z O I C**

**C E N O Z O I C P S Y O Z O I C**

**BROWNIAN LIMITS OF SYSTEM-INTROPY**

**BIOLOGICAL EXPERIENCE**

STOCHASTIC  
COGNON FIELD

**PRE-EXPERIENCE**  
 **$E \approx M$**

**ENTROPY of EXISTENCE (MASS)**

**T.L.:** *Mass/ Experienced* produces *Life*.

**B.N.:** Yes.

**T.L.:** Now, this goes to Schrödinger who says: Life feeds on a flow of negative entropy.

**B.N.:** Yes. Of course. That is obvious for us.

**T.L.:** Yes, absolutely. What is negative energy? Schrödinger did not know.

**B.N.:** Of course not, they were missing this sense of order. Negative-Entropy means increase of order. Positive-Entropy means decrease of order or chaos.

**T.L.:** Yes. And what I am trying to understand is increase of order depends, from our work—what we are trying—on increasing the order of our Being / consciousness. That's rather interesting isn't it?

**B.N.:** It is crucial, I would say. All the meaning of life is on the basis of that. [Everyone in laughter] Yes.

**T.L.:** So negative entropy, it is necessary for negative entropy to always be increasing, as mass increases.

**B.N.:** Yes.

**T.L.:** That is Evolution. I think we could call that Evolution.

**B.N.:** Biological Evolution. Yes. But *Biological Evolution* is not necessarily *evolution of consciousness*.

**T.L.:** Well, consciousness, if you consider the table of hydrogen's, or something like that, there is some really fine substance on this scale.

**B.N.:** Well, Gurdjieff wanted to make pleasure for Western thinkers, so he adopted this language, these tables of hydrogen's, just to attract people.

**T.L.:** [Terry laughing uncontrollably] Now Basarab...

**B.N.:** I have an opinion about his table of hydrogens. It was a good thing, a good support for what he was trying to get across. When you leave these things, however, you see that he's just again using symbolic thinking.

**T.L.:** Yes. But on the other hand, quantum mechanics rather agrees with this scale. We are looking for the *Higgs boson* now right?

**B.N.:** Yes, yes.

**T.L.:** [laughter] Is that hydrogen one?

**B.N.:** Well, certainly not.

**T.L.:** Now wait a minute. [Laughing]

**B.N.:** It's not God's folly. Let me tell you what is written about God's work in the book of Hans Bethe because Bethe is one of the people I know. A Nobel prize winner in Physics, he is a very honest man. So he wrote this book 10-15 years ago and you know—what to tell you about why he put the word God there—it's funny, I knew then that he is not a believer. He said the editing house put it in there to try and help sell the book! So, it has nothing to do with God. It is popular between models to give a special role, to give mass and all the other particles, which is an important role. But on a philosophical level, I'll say, is not a big thing. On the physics level, it is an important thing because it is a piece of the puzzle, which is missing, and it is this one. Which puzzle? The standard model.

**T.L.:** OK. Well, I'd like to bring this: If what you're talking about out here on a scale doesn't derive from first principles, ...

**B.N.:** What are the first principles?

**T.L.:** The first principles are that Mass suddenly precipitated into *Being* at Planck scale.

**B.N.:** But first principles, so far, please explain.

**T.L.:** Of reality.

**B.N.:** Yes, but —from your model? Or from somebody else's model?

**T.L.:** Gurdjieff's. I think we are looking for a way that all of this can be understood.

**B.N.:** Gurdjieff has no first principles, in fact, as I understand it, because this is the very precise meaning of the word fragments. I mean why did Ouspensky call it *Fragments of an Unknown Teaching* and not, "The Teaching?"

**T.L.:** Gurdjieff called it *All and Everything*.

**B.N.:** Oh yes, the *All* and *Everything*, is to cancel the *All* at once, by *Everything!* He was very clever...

**T.L.:** Yes, he was.

**B.N.:** It's an Oxymoron, but I'll come back. It's not Science. He has principles, yes. Only three. The Law of 3, the Law of 7 and the Law of 9. There are three Laws.

**T.L.:** I don't know about this law of 9. What is that?

**B.N.:** The Enneagram.

**T.L.:** Oh, the Enneagram. Okay.

**B.N.:** That is called the Law of 9. There are 3 Laws. Three (3), which connect to what you probably call first principles and what Christian's call 3, and different civilizations have different names.

**T.L.:** By the way, this is an Enneagram [opening the Ergodic cycle diagram.]

**B.N.:** Seven (7) is connected with time and manifestations of time of the processes. And with nine, (9) nine is the big thing that Gurdjieff did by putting them all together. So this is already in parts. If you add 3 to 7, you do not get 9. Let's make a side remark. You get 10. But a very clever thing Gurdjieff does here as a pure scientist or mathematician, I would say. You take one point from these invisible 3 forces, because you never see these negative and positive forces. Take one point from the Law of 7 and then make the junction, saying they are identical, topologically.  $3 + 7$  is 9. And that's because the 10<sup>th</sup> point is the center. Everyone forgets about the center. In the Enneagram, there is a center. The Zero. The Zero is part of the story, like in many other civilizations, and the Zero is the 10<sup>th</sup> point, the point, which we never see.

**T.L.:** Yes

## SYMBOLIC THINKING: SCIENCE HAS AXIOMS

**B.N.:** Yes. Now, I am describing first principles. But what we call first principles in Science is something different, of course. We call them *Axioms*. So we need Axioms. Axioms of what? Axioms of scientific methodology. And there again, by accident, they go by three. Galileo Galilei formulated this in the 17<sup>th</sup> Century. So **the first** big law is the fact that everything in Nature, everything that exists, has mathematical general laws. This means general laws, which are formulated in a language, which is universal. It is the same in different Stars and in different Galaxies and so on. In that sense, the language is Universal and yet artificial because it is not a natural language. **Second Axiom** of Galileo Galilei was that you can find these laws by experiments, proofs. The point is these proofs have to be reproduced the same in any place you are making the experiment—in New York, in Paris, or Berkeley. So, axiom is repetition in the sense that these scientific results have to be reproduced with extreme accuracy, allowed by the instrument, to be exactly the same. So, we understand now the huge difference between the initial laws of 3 of 7 and 9 of Gurdjieff, and initial laws of Science. Why can't they mix together? They cannot.

**T.L.:** Why? Aren't they describing the same thing?

**B.N.:** They are not describing the same thing. That is the point.

**T.L.:** Well I don't mean to say they are describing the same thing, but they describe...

## REPETITION OF PHENOMENA

**B.N.:** Mathematics, up until recently, for several centuries used the same methodology, which described repetition of phenomenon. Consciousness is singular. It's not repetition. That is the point.

**T.L.:** By singular do you mean since it is the only thing that can exist?

**B.N.:** Singular in the mathematical sense, sorry. If you take one and put X into zero, we have a singularity.

**T.L.:** That's Science. Gurdjieff says, hydrogen one is everything. It's everywhere, it's in everything.

**B.N.:** No, No. Not about consciousness. Consciousness is something that cannot be repeated. This "C" word, you have experiments...

**T.L.:** Consciousness is infinitely repeating.

**B.N.:** It's not repeating. From my experience, it is not infinitely repeating at all, fortunately. Fortunately.

### **CONSCIOUSNESS AND SELF-CONSCIOUSNESS**

**T.L.:** Do you mean higher Consciousness, or do you mean self-consciousness?

**B.N.:** I know only one consciousness.

**T.L.:** Exactly. Self-consciousness

**B.N.:** No, consciousness, full stop. Self-consciousness is something else, reduced.

**T.L.:** Reduced, I agree, but we call ourselves self-conscious.

**B.N.:** We can call it, but a machine can be self-consciousness. This is all the point of Gurdjieff saying man is a total machine—but not only.

**T.L.:** We invented self-consciousness to separate ourselves from animals that are conscious, but not self-conscious.

**B.N.:** I agree, on that point I agree. But I mean consciousness in the sense we were discussing about the laws and repetition, our starting point. Consciousness is something that cannot be repeated, simply because the instrument, which captures this everything, is too big, it is too limited.

**T.L.:** Exactly.

**B.N.:** So, it cannot be repeated.

**T.L.:** Now, let me say the only instrument that can repeat it is a human being.



**B.N.:** I don't think so, sorry to say. I am afraid we have a point of difference. It is the only law, how to say, in evolution *being*, which can approach that while it cannot host this consciousness, perhaps after that we can approach. Perhaps. I don't know, I didn't try.

**T.L.:** We can move on the scale.

**B.N.:** A human being can move on a scale. That is our advantage. But I mean if I am just self-conscious, what about my computer? My computer is self-conscious. Much more than me.

**T.L.:** Much more than you—much more reliably than you.

**B.N.:** Yes. It's more reliable than me. So it depends on what mechanism?

**T.L.:** Understood.

**B.N.:** So, Consciousness is about this non-mechanicalness. Consciousness is about non allegorical kinds of things, chance, etc.

**S.H.:** Are you saying that Self-consciousness is discerned from consciousness and gratefully, because it doesn't work from memory?

**B.N.:** Gratefully, yes. From memory and many other things. Now we are back to repetition. If I try to capture the consciousness, which is there everywhere, I become a man good for hospital—mental hospital. It cannot be. And it happens, for example, in genius, artistic or scientific—there are very often mad people—why? Because there is too much information coming in.

**S.H.:** With Gurdjieff, the difference between the *Reason of Knowing* and *Reason of Understanding* follows unique principles of self-organization.

**B.N.:** Understanding yes. Knowing is something different. So, it looks like we have a slight difference.

**T.L.:** We would both have to expect this, since we've "grown-up" apart, there are things that are going to have to be discerned through dialogue.

**B.N.:** Yes.

**S.H.:** Basarab has refined something on which we agree, however fundamentally consciousness is self-conscious.

**B.N.:** Yes, it is good, this point of contact between everything we are establishing.

### **INVERTING THE SUBCONSCIOUS**

**S.H.:** In this process, is the subconscious being inverted?

**B.N.:** Yes.

**S.H.:** From experience and digestion, if it is a true triad, it moves to the lower?

**B.N.:** We might discuss now a little bit about the Law of 7, a bit of a different direction, but I can follow you. This is a different story on the subconscious and so on. It is true, that on the practical level, Gurdjieff made an inversion saying that the subconscious becomes the main Object.

**T.L.:** He has brought a methodology for making this inversion.

**B.N.:** Yes, a methodology, a practice and a cosmology. The movements and the teaching and all these things. The problem is the word. It is very interesting, because in psychoanalysis they use a different word: *Unconsciousness* and *l'inconscient*, in French. The story is very interesting. In the beginning, Freud used the word subconscious. He already knows. Because already he found something. But again, it was too sloppy with the magical. So he used, like everybody now, unconscious. This means a kind of deposit for everything that has to be rejected, in some sense. While subconsciousness in Gurdjieff and some other scientists are defining the inversion as a source of information. Which is very interesting, because in our selves, there is a source, an incredible, infinite source of information there.

**S.H.:** Latent.

**B.N.:** It is alive, but it is like non-existent because we are blind, together.

**S.H.:** Do you know how I mean the word, latent—latent to develop?

**B.N.:** I know the word very well, but there is a small nuance between latent and real. For me, it is real. Latent is there all the time, but it is even worse than latent—just not existing, if you are blind. Sleeping. Sufi's say it this way and so does Gurdjieff.

**T.L.:** Does a worm have a subconscious? And a sheep...

**B.N.:** I think so. It is very difficult to discuss these kinds of things from a scientific point of view—it's impossible to discuss. We have no buzzwords for that. From a philosophical sense, I would say yes. I think we are corposant to ourselves, to our thinking, if really everything around derived from intelligence that is there. This intelligence is in everything. It is everywhere, in a plant, in a vase, in an animal in a worm, in a song. This everything means different levels of consciousness.

**T.L.:** Different levels of consciousness. I mean going back to entropy and negentropy—consciousness has to be whatever it has to be to offset entropy.

**B.N.:** Yes, I used to define, once I don't remember where in a talk or an article that consciousness being everything, which violates the laws of Nature, of conservation.

**T.L.:** All we have to do is turn that over and see that it binds everything.

**B.N.:** No, conservation. Physics is built on the laws of conservation of energy and of mass, quantum numbers, a lot of conservation laws.

**T.L.:** But you would agree with me that Physics and Math cannot explain the Universe?

**B.N.:** They explain the physical Universe.

**T.L.:** Up to a point.

## IDEOLOGY VS SCIENCE

**B.N.:** Up to a point, but that is obvious. For scientists, it is obvious. For non-scientist it is not obvious because everyone wants scientists to explain everything. I studied this period very seriously and it isn't scientists who said this. There is, in French *le scientiste*—which isn't scientific, but it means there is an Ideology that is based on essentially the 18<sup>th</sup> and the 19<sup>th</sup> Century, based on enlightenment philosophy, *philosophie des Lumières*, after the French Revolution, when man was the center of everything and so on. So, the idea that science would bring every explanation wasn't a scientific movement. It was an Ideological movement from people who evolved from a political point of view who tried to say that science would be the only truth. Why? Because they could get money for everything at that time.

**T.L.:** And they had to explain away God.

**B.N.:** Yes. God, and even Love! There are incredible writings in the 19<sup>th</sup> Century of some philosophers of science and some scientists who went in this direction to censor and explain everything, even love. When we find the mechanism of love, find the anachronisms, the circulation of substances, everything. It was delirium. Now we know it is not like that. And since the 20<sup>th</sup> Century, if it's big, it is because Science, by itself, arrived at the idea of its own limits. It's not Physics, it's not philosophers, not only people involved, but Scientist, the founders of quantum mechanics.

**T.L.:** Meanwhile, technology goes on and on, finer and finer.

**B.N.:** That's the practical level. That we can go over and over because its own explanation is on that level of reality. But you cannot make discoveries on that level of reality, for example, with the Gurdjieff cosmology. If you use Gurdjieff's cosmology in quantum physics, you will get just nothing, from a technical point of view, but understanding yes. To make a scientific discovery based on Gurdjieff philosophy is impossible, or Krishnamurti's or Christian teaching—any kind of specialty teaching. It is not made for that.



**T.L.:** An atom is where on the table of hydrogens? And a proton and an electron is where on the table of hydrogens? A gluon is where on the table of hydrogens? And a Higgs boson is where on the table of hydrogens. Is his scale...

**B.N.:** You can count them on the table there—I see some mutations there. OK.

## **DISCONTINUITIES AND GÖDEL'S THEOREM**

**T.L.:** I don't understand Bells inequalities, nor maybe do I fully understand Gödel's incompleteness theorem for that matter, but is this describing where they are getting to the point where they see that they really cannot go any further? I mean their method of exploration runs out of gas, or something like that.

**B.N.:** Well there are 2 theorems of Gödel and they are not generally valid. What I mean by that is Gödel theorems apply only to formalized systems. What is formalized is mathematical systems and equations. Do we have equations for the Gurdjieff teachings? Do we have equations for Christ teachings? There are no equations.

**T.L.:** The equation for the Gurdjieff work is the reciprocal of entropy.

**B.N.:** That is not an equation, you have to put = signs into the operation, multiply, divide, etc.

**T.L.:** There is an equation for entropy, one that describes entropy.

**B.N.:** Yes many, many equations. It depends on the theory.

**T.L.:** Well yes, and I come along and say consciousness is the reciprocal.

**B.N.:** Let's not leave that one point because this one is very important, and it can be useful for many things. Gödel's theorem applies only to formalized systems, like theoretical physics. Now, subtle Super Strings. Super Strings theory is a formalized mathematical theory and there, Gödel's theorem can be applied. If you try to apply Gödel's theorem to Social Science it is zero. It cannot because there are no laws, no equations. And so on.

But it remains very interesting, I studied Gödel's theorem and there are two. One of them is saying that whatever your number of axioms you use for particular systems, you arrive at double results. You cannot say if it is right or wrong. The second theorem says, if you close a system, you stop extending the essential ride, you cannot avoid arriving at the thing, at the conflict. That is, at the A and non-A contradiction, which is of course a huge problem. But you have to be conscious that it is only for formalized systems. In my books, I am very careful when I introduce Transdisciplinarity, based on this kind of epistemology, which I call Gödelian, not Gödel. A type of Gödel. This means, inspired by, but not derived from.

**T.L.:** I see.

**B.N.:** But incompleteness of laws is something different from Gödel. So, let's try to shift from these words so we bring in the consciousness. The point is the following: We have laws for Macro Physical Physics, Mechanical Physics, Classical Physics; Galilei, Newtonian. And, we have other laws for Quantum Physics. Between these two types of laws are these discontinuities. I can't go by them with continuity. But there is something else that is very interesting. At this level of Quantum Physics, Quantum Mechanics, we know (a fact known since the 1930's), which is that this leads to the incomplete description of the discrete physical systems. In the sense that not everything can be predicted. There are always unknown things in the natural systems. And also, because of this other thing we've evoked, which is that interruption between the Subject and the Object. And this is the precise point why Einstein refused the Quantum Mechanics laws. It is the precise point for religious reasons. Einstein wanted something complete. Gödel is complete. Right?

**T.L.:** Totally. He didn't want anything to leave the gap that couldn't be...

**B.N.:** Other people found there is a big novelty, not only for Physics and Science, but also for Philosophy. And, this explains why the big models of Reality were found to

be incompetent; scientist don't make them. They are made by Philosophers. That explains why I can speak for hours on this.

**T.L.:** [Laughter] Can we say that mathematics has done its work?

**B.N.:** No, we can't say that. We still have work.

**T.L.:** What more knowledge do we need? Mathematics has supplied how the Universe works.

**B.N.:** Yes.

**T.L.:** Now, Gurdjieff is describing something quite different.

**B.N.:** Not only Gurdjieff, Mme de Salzman, and Krishnamurti many other people. Everything, which is...

**T.L.:** Gurdjieff explains it in a way that none of them are able to touch.

**B.N.:** Maybe, but that's another discussion. We can go for this discussion later. For the moment, what I am trying to say is that saying mathematics is finished, physics is finished, everything is finished, God is dead, History is ending, Ideology is, It's out of fashion for our time..

**T.L.:** I am saying it has provided all the information we need to understand. If I say to understand, I am putting a special category, right? Mathematics has supplied us with all the information we need to understand that Evolution works from entropy relative to negentropy and adaptation, as things evolve—they evolve because they are adapting to the situation between entropy and negentropy that exists in, for instance, a planetary world, out of which a bacteria appeared somehow, Why?

**B.N.:** Yes.

**T.L.:** Why? How did that happen? I say it happened because Consciousness is behind the force of evolution.

**B.N.:** Yes. That is a philosophical point of view.



**T.L.:** Yes, exactly. And I am saying it's valid because Science can no longer come up with the answers that we need.

**B.N.:** Can I make a very friendly correction in an error you made in your phrase? It's one word. One single word is an error. We must be very careful about language. You use the word understand. Physics never pretended to understand things. Physics wanted to know things, which is very different. In other words, if understanding is connected with the *Being*, Science has absolutely nothing to do with the Being. Zero. From the beginning.

**T.L.:** Exactly.

**S.H.:** Or for answering why.

**B.N.:** Yes. Modern science. Old science yes, they wanted to find why, the answers. Alchemy for centuries was in the 14<sup>th</sup> century wanting to know why. But after the 16<sup>th</sup> century, when the old thinking was made, they put that out—OUT!—the *Being*. They wanted to know how the world functions—full stop.

## **AN OBSERVER AND THE DIGESTION OF IMPRESSIONS**

**T.L.:** What I meant by understanding was a method. We have enough information to experience the processes of the offsetting of entropy by conscious observation—by the observation process. And, let's not forget how important the digestion of impressions is in the Gurdjieff system.

**B.N.:** Of course, yes.

**T.L.:** That is an enormous process that gets us well beyond what mathematics can describe. Mathematics and Science, as you say, don't go there.

**B.N.:** It depends which mathematics again. There is a mathematics.

**T.L.:** Without getting too specific.

**B.N.:** Gurdjieff said that he was mathematical. Gurdjieff used the word mathematics, but in a different meaning. He spoke about geometry and laws.

**T.L.:** I agree. The doubling and halving of vibrations, for example.

**B.N.:** Let's come back to the story of ending of mathematics. Let's make a simple experiment, a psychological experiment. Shutting down the speaking for a moment and try now to go into the mind. We can go on forever discovering associations of all kinds. It is a huge laboratory there.

**T.L.:** Yes. Yes.

**B.N.:** The brain is fabulous source. Not of infinity, but a huge number of connections. So mathematics will never end, simply because the brain is there and the associations are there. You see the point? It is a very subtle point. So, mathematics, when is the miracle? The miracle happens when these associations were...

**T.L.:** Your talking about the description of the firing of dendrites and

**B.N.:** No, I just giving the example of a living experiment in which you can see the infinite minutes or hours, just turning around.

**T.L.:** Yes, but your experiment sets up an observer. I can go in and be part of the processes that go on in the mind automatically.

**B.N.:** I am just showing what is going on in our mind.

**T.L.:** It's just what is happening in our mind that is the present level of entropy.

**B.N.:** Yes, on that we agree totally. The point is how we agree and not to put negative statements or words on science. That's my point. That is a very big danger. We can criticize science, but not the ideology part of science. I make this distinction between the Ideology of science and Science.

**T.L.:** Of course. I see your point. Scientists love Physics.

**B.N.:** Experiments, experimental proofs—there's this huge laboratory in Geneva that's not for small things. [Everyone in laughter].

## PLANTING A SEED

**S.H.:** It seems you are both planting a seed. Basarab you're bringing Transdisciplinarity's logic, which defines an included middle, as expressed by Stéphane Lupasco, and the law of three forces, as expressed by Gurdjieff. And then we have Terry's equation of Intropy=Entropy as expressed by Schrödinger (negentropy). On either side, phenomenological awareness is raised that assists humanity. However, confusion is due to formulations of understanding that can only be approached through experiential perceptions of reality. So, my question to you Basarab: Will Transdisciplinarity come to fruition if natural mis-perceptions, rooted in our primary 3 brain systems, are not an aspect of Transdisciplinarity's unifying model? Engaging our 3 centered biological functioning, our phylogenetic ancestral inheritance, is the only verification or proof of third-force. Transdisciplinary logic has to move into embodied sensation..

**B.N.:** Transdisciplinarity is not a Science. So, not being a Science, it takes that into account. There is this confusion because I myself am a Scientist, but people think from these writings that Transdisciplinarity is a science. But no, it is something much larger than science. It is why I propose a methodology of Transdisciplinarity, which is completely different from methodological science.

**S.H.:** Gurdjieff provides an alchemical base for the flow of third-force. He reminds me that I am made of these materials.

**B.N.:** That's his problem, not my problem [laughter]. I mean it's his problem because there are some parts of Gurdjieff that are outdated as language.

**T.L.:** Very much so.

**B.N.:** Because he adopted language from the meaning of traditions. So, in that sense I say it is his problem because he has adopted some language which is different. Myself, I prefer the ideas of Gurdjieff and not the language of Gurdjieff. Do you understand what I am saying?

**S.H.:** If we subtract alchemical language, we can still ascertain there is complexity in our evolutionary, biological structure. If humans comprehend we evolved from and in relation to an open system, a cosmological perspective is obtainable by making intentional contact with our higher neocortical functioning.

**B.N.:** Yes.

**S.H.:** If the Universe itself is the unique closed system, how would a Cosmopomoral view aid humans in understanding that Transdisciplinarity is an open systems model, which carries the capacity to transform the conventions of our present and past educational system? In the end, the model of Transdisciplinarity asks humans to physiologically overcome something, without individuals recognizing what that something is.

## **POLARITIES**

**B.N.:** It is very simple to understand because His Endlessness was so kind. He made a human being able to connect things with words. [All in Laughter] I am very grateful to be exercised. However you call him or her. By the way, what is the sex of the Gurdjieff teaching? Is it a woman or is it a Man? I am serious. It's a question. I am very serious.

**T.L.:** He addresses it in Purgatory.

**B.N.:** It's very serious this question, because polarity is very important to be kept.

**T.L.:** Exactly, but this polarity cannot be not kept. This polarity is bound by consciousness.

**B.N.:** This polarity is bound by a third-force and all the three are connected with consciousness. Now coming back to your question about the 3 partitions of the human being, and it is connected with your question about impressions, in order to go beyond in Transdisciplinarity, we are very attentive to what we call Transdisciplinary education. Education, what I mean by that is the fact in the last 3 centuries all of education was based on the mental things, until incredible success

like mathematical formalizations, abstraction and so on. Now, the first step in education reform is to say that there are two other things. Two other parts of the human being: the emotional part and the instinctual part.

OK three. But it is not sufficient. You have to bind them together. What will bind them? You can bind in two ways. You can unify them and so the result is just zero. Or, put them in equilibrium like Mr. Gurdjieff says. This means what in simple words? It means that in education you create matter of teaching, interactions of professors in which you create this equilibrium between mental things, instinctual things, intellectual things, and feelings (not emotions). When you create this equilibrium, a fourth force can appear. This is the key story. What is this fourth force? It is something which does not belong to the three parts. It is information coming from consciousness.

**T.L.:** Information coming from Consciousness.

**B.N.:** This is what brings a new intelligence. I speak about a lot in my work a lot about this new intelligence. This new intelligence is not my intelligence or your intelligence, but something that is caused because we are interacting.

**S.H.:** It comes from outside, as a newly arriving impression?

**B.N.:** It is also inside. This option of an inside/outside is because of binary thinking.

**T.L.:** Would you agree, in the Gurdjieffian sense, that this new intelligence has to come from the vibrations of the head that receives a reminder, that energy then takes a conscious assistance, which is what our work is, to allow the affinity of vibrations

**B.N.:** To be aligned. In some sense, this is right.

**T.L.:** Yes, to be aligned and then move into the sacrum. Then, when these two are in vibratory agreement, this third, you are saying quite the way I say it too, it is not emotion then, it is feeling.

**B.N.:** Yes. It is feelings.

**T.L.:** Is that work then what brings the relationship between feeling of emotion? And the digestion of emotion—the energy spent on emotions is then taken-up by feeling, which goes on up to the Vagus nerve –the enervation of the Vagus nerve.

**B.N.:** I totally agree. On that point I totally agree.

**T.L.:** This new information that you speak of comes out of this process.

**B.N.:** What is beautiful in the way you say it and it's confirmed by hard science is in the work of Damasio, especially in his book on Spinoza. He makes a distinction between emotions and feelings. Not philosophical, but on experiential data. Because now we have means to visualize all parts of our brain. So, we can visualize what is going on with emotion and what is going on with feelings. And he uses the beautiful term of levels. There are two different levels. Emotions are more mechanized than we think.

**T.L.:** Well I absolutely dismiss Damasio because he doesn't know anything about the digestion of emotions.

**B.N.:** How do you know?

**T.L.:** Maybe I did not read exactly what you are saying. We need Gurdjieff.

**B.N.:** I think we need both.

**T.L.:** Well, OK I am generous too. [laughter]

**B.N.:** It isn't a question of generosity. I think many things happened after Gurdjieff died, which he did not know. Things that are completely new. So, I am not of the monotheistic tradition of one tradition. The beautiful thing about Gurdjieff is that he is situated in what I think is fair to say the Alchemical tradition. This means, a tradition that can be changed. It is not fixed. A tradition, which is filled by history of time.

**T.L.:** But it also provides a line of **Absolute truth**

**B.N.:** Of course, a line. Absolute truth, I don't know what it is.

**T.L.:** By absolute truth I mean, how does this Universe keep itself going?

**B.N.:** We of course agree about that. But you can't just say that we take only that and then we then know everything. It's not true.

**T.L.:** As long as what you take provides material for the conscious digestion.

**B.N.:** Let me tell you everything feeds that. Even Gurdjieff feeds that. You know, Gurdjieff said something that marked me very much. He said, I am the small one, between big people. It is incredible words. It means he was in contact with people much higher than himself. And that is to be understood on a historical level.

**T.L.:** And of course, there is only one place where he's a big man.

**B.N.:** Of course, in California. [Terry rolls in laughter]. I am joking. He's a big man in many ways, but he refused the absolute truth. Why he never used the word God?

**T.L.:** You'll see, that in this book, where's that book? [Susannah reaches for it]. The Karnak, yes. You'll see there is a kind of redaction of Gurdjieff that shows exactly what he is teaching.

**B.N.:** Yes. I see.

**T.L.:** [Basarab rises from his chair] How are we doing?

**B.N.:** Perhaps we make a small break for drinking something? We have something to celebrate! It's your birthday.

**T.L.:** How nice.

**B.N.:** (from the kitchen) You see the physics here?

**T.L.:** What?

**B.N.:** The physics [Basarab enters the living room with a champagne bottle and 3 glasses] You see you have to put it at 45° degrees like this [demonstrating].

**T.L.:** Is that right? 45° degrees. For equilibrium?

**B.N.:** The surface then is bigger, so the spread is less.

**T.L.:** Chuckles.

**B.N.:** We're in France. [Everyone laughing]

**S.H.:** We're in France—!

*We take a short break and toast Terry's 80<sup>th</sup> birthday!*

## GURDJIEFF'S COSMOPOMORAL and ANTHROPOMORPHIC ADDRESS

**T.L.:** We have Gurdjieff's, what I call Gurdjieff's **Cosmopomoral Address** and then we also have his anthropomorphic address. So I see these as the big picture and then the local picture, but how do they interact?

**S.H.:** They are actually here, in Gurdjieff's words, quoted from *All and Everything* in our earlier interview with Art Historian, Peter Selz.

**T.L.:** Yes, right. Let me read his Cosmopomorphc address aloud.<sup>1</sup>

“. . . it was very definitely proved that there exists in the world, without any doubt, a law of the 'reciprocal-maintenance-of everything-that-exists' and that for this reciprocal maintenance certain chemical substances also serve, with the help of which the processes of the spiritualization of beings, that is to say 'Life' is carried out, and these chemical substances serve for the maintenance of all that exists only after the given life ceases, that is when the being dies.”

Now that is really interesting, isn't it? It means that everything—if you don't increase the finest of that chemistry, then you die for nothing.

**B.N.:** Like a dog. [All in laughter]

**T.L.:** Like Ouspensky.

**B.N.:** Now, now. So you have the parallel of an honorable death. Yes. Yes.

**T.L.:** But more than that, I am not sure exactly, but if you take these crude categories of man number 4, 5 and 6...

**B.N.:** Yes.

**T.L.:** Man number 6, when he dies, he contributes more of the fine vibrations that are needed by the Universe than man number 5.

1 Cosmopomorphc Address, page 1095 **All and Everything** — G.I. Gurdjieff



**B.N.:** Yes.

**T.L.:** Now, so anyway, let me read Gurdjieff's **Anthropomorphic Address**:<sup>2</sup>

“ . . . three-brained beings... by becoming capable in the presence of all cosmic factors not depending on them and arising round about them—both the personally favorable as well as the unfavorable—of pondering on the sense of existence, acquire data for the elucidation and reconciliation in themselves of [those conditions], what is called, ‘individual collision’ which often arises, in general, in three-brained beings from the contradiction between the concrete results flowing from the processes of all the cosmic laws and the results presupposed and even quite surely expected by their what is called ‘sane-logic’; and thus, correctly evaluating the essential significance of their own presence, they become capable of becoming aware of the genuine corresponding place for themselves in these common-cosmic actualizations.”

So, you see, he's outlining, putting brackets around all the philosophical questions that have ever been asked.

**B.N.:** All right. So Yes. Yes. Yes. So what is for debate? With this reciprocal feeling, we call it a bootstrap arrangement in Physics, which of course there isn't the spiritual dimension. But, there was a revolution towards it 1962 in Berkeley made by Steven Chu, Director of the Lawrence Berkeley Laboratory with whom I had the honor to collaborate in the early 1976. At this moment Chu was like a Pope in the community of Physics when he was saying essentially, every particle is what it is. In other words, philosophers were very violent toward him. Especially people from materialists, Judaic tradition, all saying bootstrap will kill Western thinking. Put in other building blocks, interactions, reciprocity—bootstrap—what does it mean bootstrap in Irish? Just closing

<sup>2</sup> Anthropomorphic Address, page 755 **All and Everything**—G.I. Gurdjieff

your shoelaces like Baron Munchausen just going in there, just by pushing his hair. [Terry chuckling away]. Replacing everything in movement, with interactions, really fabulous, until the moment in which quarks appear. Quarks in some sense killed the bootstrap. Not because bootstrap was wrong, but it was too difficult mathematically to build all these in equations So with bootstrap, (sorry, we've talked about only quantum mechanics until now) Super String has its origin in the bootstrap. That's a historic point and what I want to connect to this reciprocity theory.

**T.L.:** I read Lee Smolin's book on string theory.

**B.N.:** Landscape and sky and all that. It's a big fast model.

**T.L.:** Please correct me, but what I gather from Prigogine, String theory is too simple to be actually right, but as the equations approach infinitely small, they approach zero. And Zero destroys any equation—any equation. You can't have zero in it! So, String theorist said, well we have to deal with zero, so we'll make zero into a loop.

**B.N.:** Not zero but would be final dimensions.

**T.L.:** But they had to bounce off the fact they were approaching zero.

**B.N.:** But as a lover of Gurdjieff, you have to love Super Strings—why? Because Super Strings say everything is vibration working. And more, all vibration comes from one single vibration—Gurdjieff was crazy. But, the problem with Super Strings they lead to experimental bodies and there are no experimental bodies. It's not at all simple. It's very complicated.

**T.L.:** They lead nowhere. It is very complicated

**B.N.:** Edward Witten [theoretical physicist at the Institute for Advanced Study, Princeton University] who has experience in this field and won a Nobel prize, not for Physics but Mathematics.

**T.L.:** To make the equations work

**B.N.:** What equations? They have just brains...

**T.L.:** Brains, did you say? Oh, like membranes. But they have to have these multiple dimensions to make them work.

**B.N.:** 9 +1

**T.L.:** 9 +1 . I heard it was 11.

**B.N.:** This is called the second revolution.

**T.L.:** The Cabal—yal, what is it?

**B.N.:** Ahh, you know even that!

**T.L.:** What we would like, I think, is to bring—if put into precise Academic terms—the Transdisciplinarian perspective into a relationship with the Gurdjieff system that would begin to inform our educational system. How would his perspective inform our educational system?

**B.N.:** Yes, I think there is a very big connection.

**T.L.:** I would say so myself.

**B.N.:** There's a connection—with one basic idea that people forget because people mumble about mystical complicated things from Gurdjieff, but one simple thing he said, which amounts to the level of everything—we are 3 competent machines. The mental, the instinctual and the feeling. But, we work only with the mental associations.

**T.L.:** Which is driven by our emotional requirements.

**B.N.:** Of course. This is very big for education. So, I think people mis-discovered Gurdjieff. In Mexico they quote Gurdjieff for disciplinary thinking. They are not ashamed. They understand it very well, because they are working on it. Mexico is different. I'm speaking about Mexico City.

**T.L.:** I was in South America, not Mexico. What Susannah mentioned earlier—we have a small team in San Francisco working on the question: What does an expectant



mother need to know? We need to start before College curriculums—in a way it's too late. Do you know Harold Morowitz? Origins of life authority on thermodynamics?

**B.N.:** No.

**T.L.:** He's a biophysicist. He's researched the cellular origins of life. *Energy Flow in Biology*—entropy for biologists. He's an authority on thermodynamics.

**B.N.:** But what is the idea?

**T.L.:** He's written a book about the emergence of everything.

**B.N.:** [Chuckling] He makes a connection with Gurdjieff there.

**T.L.:** [Chuckles]. A little bit, but he's Chardanian. He looked at this diagram [Einstein, Darwin Gurdjieff]. What I told him was, you start with minerals—or you have to start from where we are (Terry points to Darwin). Physicists study from here 14 billion years back; Biologists study from here, 4 billions year back; and Gurdjieffians study from here forward.

**B.N.:** Yes. You put that together.

**T.L.:** Well, they are together—we just have to realize in ourselves.

**B.N.:** Yes, sure. I mean—acknowledge.

**T.L.:** Morowitz said, you've proven to me that I have to take this seriously. But then he said he was too busy studying 4 billion years ago. We're getting ready to get in touch with him again.

**S.H.:** In a sense, this is what you mean that math has brought sufficient information about history. The **Einstein, Darwin, Gurdjieff** diagram backs up the necessity for a forward moving line. As education lacks, and the earth's resources run out, our way of failure makes people ask questions. But an owners-manual for the human situation—our biological functioning can be taught. If the origin of our naturally conflicted system of survival instincts and mammalian diabolical reactionary nature

was clarified our perceptions would resist less or include more. As it is, self-observation, a teachable skill, is not taught. Our neo cortex cannot reconcile the lower brains without self-observation. Without right information, we naturally devolve. Transdisciplinarity, with its vertical logic, stays horizontal unless an axis for Being—is able to *Become*.

**B.N.:** Why do you say horizontal?

**S.H.:** Why do I say stays horizontal?

**B.N.:** That's an assumption that is wrong.

**S.H.:** But transmutation—unifying of our 3 centers comes from inside.

**T.L.:** Susannah is saying, we distinguish Transformation from Transfermentation.

**S.H.:** I've read your Manifesto. The section where you discuss your concerns for how wrong turns can go...

**B.N.:** Yes, the wrong turns.

**T.L.:** The deflections.

**S.H.:** I'm saying we may lose what Transdisciplinarity set out to do. The responsibility in Transdisciplinary logic requires learning how to unify our 3 centers. The mental is disembodied. The Vagus regulates this potential. Theory can't be passed over—but Transdisciplinary action—methods for humanity to engage this physical subtle field of attention requires safe environments for an embodied sensation of the concepts.

I'm presently an adjunct lecturer at the San Francisco Art Institute. It's a culturally rich place to experiment with bringing both theory and discipline together. I am able to give young artists the space to be bold in their creative processes. Agency towards experiencing edges is what all education should be about, but educational practices as a whole has yet to nurture the dynamics of fractals. My students—in fact most everyone I know—are not aware of the Vagus Nerve, much less how it

functions, which is to say how it regulates what we think, feel and put into words. This is the gap we must address, otherwise dialectical response patterns repeat from memory—automatically.

**B.N.:** Transdisciplinarity is about the Fractal structure of reality.

**S.H.:** Yes—.

**B.N.:** The same general laws remain.

**S.H.:** Biological feedback loops are Evolution in process. As you mentioned, Gurdjieff indicated, the dictionary for a real education begins and ends with this single word.

## **AFTERWARDS**

In June 2018, Susannah returned to Europe to participate in the Transdisciplinary-Transnational-Transcultural (T3) International ATLAS Conference held at the Babeş-Bolyai University, Cluj-Napoca, Romania. The conference theme: “Being Transdisciplinary” presented the opportunity for her to introduce *Nature’s Discourse: Transdisciplinarity and Vagus Nerve Functioning* a bio-physiological Systems View of our 3 centered (mental, physical, emotional) autonomic functioning, which is necessary for Homo Sapiens to learn how to engage, so that higher normative levels of intelligence implicit in Transdisciplinary logic may adapt and evolve.

## BIOGRAPHIES

**BASARAB NICOLESCU** PhD is a major advocate of the transdisciplinary reconciliation between science and the humanities. An honorary theoretical physicist at the *Centre National de la Recherche Scientifique* (CNRS), Laboratoire de Physique Nucléaire et de Hautes Énergies, Université Pierre et Marie Curie, Paris, he is a Professor at Babeş-Bolyai University, Cluj-Napoca, Romania and Docteurès-Sciences Physiques (PhD), 1972, Université Pierre et Marie Curie, Paris. He was appointed Professor Extraordinary at Stellenbosch University, South Africa from 2011 to 2016 and was elected as Stellenbosch Institute for Advanced Study (STIAS) Fellow in 2011. He is the president and founder of the *International Center for Transdisciplinary Research and Studies* (CIRET), a non-profit organization with 167 members from 30 countries. In addition, he is the co-founder, with René Berger, of the Study Group on Transdisciplinarity at UNESCO (1992) and the founder and Director of the “Transdisciplinarity” Series, Rocher Editions, Monaco and of the “Romanians of Paris”, Piktos/Oxus Editions, Paris. He is also a specialist in the theory of elementary particles. Nicolescu is the author of more than one hundred thirty articles in leading international scientific journals and has made numerous contributions to science anthologies and participated in several dozen French radio and multimedia documentaries on science. He has published many articles on the role of science in contemporary culture in journals in France, Romania, Italy, United Kingdom, Brazil, Mexico, Argentina, Japan and USA. His books include: *From Modernity to Cosmodernity: Science, Culture, and Spirituality* State University of New York (SUNY) Press, New York, 2014, *Manifesto of Transdisciplinarity* (SUNY) Press, New York, 2002; *Nous, la particule et le monde*, Rocher, Monaco, 2002 (2nd edition); *Science, Meaning and Evolution: The Cosmology of Jacob Boehme*, Parabola Books, New York, 1991.

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**HAROLD TERRY LINDAHL** was in his day, a modernist Architect, in the Frank Lloyd Wright tradition of Organic Architecture. Having studied the geometric base of art and architecture at the University of Oklahoma in the 1950s with Bruce Goff, he pursued his “Light-Color-Space-Form” watercolor studies in 2008 and developed **The Gestation, History, and Potential of Humanity** exhibition in 2019 that contains drawings, watercolor paintings and sculpture. Fascinated with geometric order and metamorphic form-generation through systematic variations and modulations, his black and white studies led to color-filled triptychs influenced by the cosmology of George Ivanovitch Gurdjieff, a Greek-Armenian philosopher and his teacher Lord John Sinclair Pentland, in New York and San Francisco from the late 1960s to the 1980s. He is the author of *The Harmonics of Unity: Endogenous Semiotics of the Vagus-Pineal Gyre* [www.haroldterrylindahl.com](http://www.haroldterrylindahl.com)

**SUSANNAH HAYS** MFA, PhD lives and works in Santa Fe, New Mexico. Former faculty of the San Francisco Art Institute (2002-2012) she is an internationally known fine art photographer and educator whose philosophical approach to image-making contributes to her understanding of the human predicament. As an Independent Researcher and Consultant, she is presently providing educational and exhibition outreach for the Intropy=Entropy Institute in San Francisco and CETRANS in São Paulo, Brazil. By way of her doctoral dissertation: *Nature’s Discourse: A Co-Evolutionary Systems Approach to Art and Environmental Design* (U. C. BERKELEY, 2016) and *Nature’s Discourse: Transdisciplinarity and Vagus Nerve Functioning* (ATLAS, 2018), her work advocates the biological and moral imperative for Humanity programs to instill the necessary curricula to responsibly transform our somatically pressured autonomic nervous system so that our higher, more recently evolved neo-cortical psychic energies may refine and adapt our latent (largely dormant) human potential. [www.susannahays.com](http://www.susannahays.com)

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