

THIS IS YOUR GRAND STRATEGY

I've learned many years ago that it is quite possible to think out loud and I find that it is quite an extraordinary habit but, that's how live meetings are. People will be at meetings at which I'm present and will take a piece of paper out of their pocket and start to read me a speech, and I'll say, "Let me have the paper, I can read it myself."

What I think really counts is the fact that we don't have the slightest idea what happens in our lives. This is something very mysterious and I'd rather look in everybody's eyes -- I'm not interested just in hearing myself -- and unload some ideas. I'm interested in the many meetings in my life, in how we mutually may be able to find out why we're here, what it is that we know about what is going on, and what we ought to be doing about it, if possible.

I have spent a great deal of my life unlearning. I'm the most unlearned man I know, because I've spent so much time at it. I've found that all the information that I have been given originally at school regarding our presence in the universe... misleading information to say the least.

The physicist in all his experimental work in the atom and the nucleus has discovered not at all what we were taught in school. Solids -- there are no solids. In fact there is not even a suggestion of something called a solid in the universe. There are no absolute continuums. There are no surfaces. There are no straight lines.

All those things that you are taught in school as obvious become less and less obvious as you begin studying what's going on in the universe.

We simply have milky-way constellations of energy-events and that's all you can say. They don't touch one another. They're utterly discontinuous. No solids.

Now in thinking that way I want you to realize the physicist has found no things; being no solids, there are no things. There are no nouns. There are no verbs. You find that 99% of your language is actually a processing of meaningless steams.

It's a perfectly good game if you want to play the game. If you want to say, "I'd rather pretend I'm not in the universe. I'd rather pretend that I'm on a static sphere with all the stars going around me," then you can play that game.

But it's a question of just how useful you'd be to yourself or anybody else just misinforming yourself.

I hear humanity talking about automation as if it were something new and something ominous. And discover that man always had automation, that the way you were born is completely automated, that parents don't know how to make babies -- they just push buttons and all the rest is automated.

You don't know what you're doing with your lunch right now. You have names for those foods that you put in there, but what you're going to do with all that -- how you're going to send off those energies, to which gland you're going to send it, how much you're going to use to make hair and how much you're going to use to make skin and how much you're going to use for emergency work when you get a scratch -- none of this do you know. So you're really 99.9% automated.

Man is very meagerly conscious in the total process. None of you knows how you went from seven pounds to seventy, and none of you knows why you did. I find that man has a kind of pride, a vanity, that makes him want to feel responsible for all the things that he is, but the more I explore, the more I find out how little he really knows.

To come back to our spaceship, Earth: what is it? This is a machine. It is an energy machine. You're not used to such a big machine. It is so big and you are so tiny that you don't really see it as a machine, but it is a machine in that it processes energy and in processing energy it does work.

What goes on here is that it is regenerating life. It has been regenerating life for a very long time. Every system, every machine, is entropic, that it loses energy, and so in order to regenerate life it has to gain energy someplace.

The way it gets it is primarily from the sun. It gets a little from the other stars but it gets it primarily from the sun. The main way it gets it is by radiation. It's a very extraordinary matter that: radiation from the sun we're flying company with could very easily burn us up. The Van Allen belts intercept that radiation and start refracting it, sending it off at angles, and it goes through all kinds of processing before it gets to us through the sieving of the atmosphere.

And if you went nakedly outside the Van Allen belts you would be killed by that radiation, so we have this beautiful design by which we can get the radiation to keep us going and not get burned up.

Now, here is this spaceship Earth where life is being generated, where, to my knowledge, human beings have been born for two million years; and they've been able to get on all right without even knowing they were on board a spaceship. I say this was very beautifully designed for them to be able to get on in their utter ignorance.

I'm really interested in the bigger pattern to see if we can find any clues to why we are here and what is going on.

Certainly we have a lot of experienced data to tell us quite a lot about the regeneration of life. You and I cannot expose our skin and get enough radiation through our skin to keep us going. It has been sieved, as I said. So nature -- the big design of this thing -- is to have enough vegetation, the green vegetation on the land and the algae in the sea impound the radiation by photosynthesis. And this is a very extraordinary fixation of the energies.

Then you and I can't eat the trees and very little of the grasses, so there is a relay system goes on, bugs that can and animals that can.

Now it impresses me very much the more I study what man has been able to find out about his physical universe, about the ninety-two regenerative chemical elements, the fantastic elegance of the inter-related generalized principles which are operative in the universe, the extraordinary gravitational behaviors, the fact that we would be flying in company with our moon and the moon pulsating to give us the tides, those tides even affecting woman's menstruating, and so forth, that we are so tied up with the whole big system. It is very impressive.

Now then I want to get in this fundamental frame of mind of how really little we know at the beginning and then try to explore to discover if we can, some of the big schemes operative and try to discover what is going on in our day.

And I find that starting from just today from just a little local information is very confusing and we make a great many mistakes. But we do fairly well if we take reference to these bigger patterns.

It may seem to you to be going very far out to talk the way I will, but this is methodical.

In 1927 I found myself excited into examining what would happen if we took the highest scientific potentials and the highest scientific capabilities, our best technology, and undertake to try to make man a success, instead of going along with the long-held working assumption that there would never be enough to go around.

This was a seemingly scientifically founded assumption coming out of a Thomas Malthus in 1810. He was a professor of political economics for the East India Company. He was the first economist ever to see the data from all around the Earth. Think of your history: Roman Empires, Genghis Khan, all the empires as we call them: they were all local domains in the world that went on to infinity. What we call the British Empire (actually erroneously) was the first empire when it was a sphere. Now you say what's the difference between the two? If you are assuming a world which goes to infinity as they did in all the empires before them, if it just goes on to infinity there are an infinite number of variables. Just mathematically speaking an infinite number of chances so that if you're not satisfied with what's going on that there's something over the horizon that'll take care of it.

Now when you get to a closed system it's an entirely different story.

So that once the world was closed and you have the economists getting all the vital statistics, Malthus found it pretty astonishing. He wrote his first book in 1810 and he said that apparently the people were reproducing themselves much more rapidly than they were producing the goods to support themselves.

Ten years later he verified his information and by this he thought that he had detected that the people were multiplying themselves geometrically and the produce to support themselves only at an arithmetical rate.

Very clearly the vast majority of humanity were bound to be a failure -- die far short of their potential years.

On top of Malthus, Darwin. Darwin was amongst the biologists and geologists being taken around the world to explore all resources and to get at the patterning in this closed system.

We recognize that Darwin could not possibly have developed any such theory in the Roman Empire because you would have had to include dragons to the Nth power. Darwin's information about the origin of species was explained by Darwin as accounted for by survival of the fittest.

I'm sure that the Great Pirates combined Darwin and Malthus and said there's nowhere near enough to go around, accounting only for somewhat less than 1% and survival only of the fittest. This was the challenge and it was hard and it was cruel. In the Roman Empire you might always have some god who could somehow rectify the situation, but in this closed system you could not have such hopes. This became then for these very powerful men the vital statistic.

Next situation: we have humanity struggling under those conditions and a very short time ago men were carrying a sword or a rapier, or, if they couldn't afford it, a bludgeon, anyway some kind of stick, and later a gun. Each one, his chance of survival being very low, each one up against the fact each individual had approximately everything to win and nothing to lose, coming to grips with whether you're going to survive while you're still young and vigorous.

We have Marx in England running into the Malthusian information and of course the Darwinian and saying, "Well, it's clear that the workers who know how to add value, who know how to take these things out of the ground and process them, they are fittest."

And inasmuch as there is not enough to go around, then you have the extreme of the Great Pirates saying that they're going to be utterly ruthless and just as sharp as they know how, just as the Marxian and the workers. All of the other political ideologies are somewhere in between, all of them assuming not enough to go around.

You have a number of people who just engage in farming and productivity and they must look out for the year's crops: they are very short-sighted because they must look just at what they are doing right now. Then you have the politicians to whom the people -- who are very busy -- leave larger affairs, and they have to look out for the next election, so they are very short-sighted.

I find then that society is very short-sighted this way, locally preoccupied with time and space, leaving it to their military to take care of the basic

working assumption that in due course you're coming to Armageddon, that you'd like to be as polite as you can to the other fellow -- in a game of musical chairs while you're all up and walking around you're polite to one another -- but the music's going to stop and there's only going to be one chair and you've got a hundred people.

That's the way the chances were at the time, so you're going to sit down and see who was going to live and that's pretty tough going. That would have been Armageddon.

We have the intelligence groups of the different countries saying that the other science group is way out there, and there is an enormous step up acceleration of how far out we scientists can go. For this reason, then, we have only in the area of science getting-for-the-war long distance preoccupation, when everybody else is very short sighted in the scheme of how you are going to survive. This is the very big long scheme up to this very minute.

I'll point out something very fundamental here: that man thinking of himself as a dry land animal specialist, we have then 99.9% of humanity living the known days on space ship Earth on the dry land. Only one quarter of their surface is dry land and less than one half of that was immediately suitable and promised any survival for man. So that we have throughout all the known men-on-Earth period man living in less than 10% of the spaceship Earth and that 10% is broken up into very tiny little increments with men so far away from one another except in relatively small tribes.

They know about that tribe or possibly about the next tribe or two, but that's all. That's the great story right up to yesterday. And so we have, men not knowing about the greater Earth.

Then there is a very small number of human beings following up evolutionarily desiring rafts and dugouts, canoes, boats and so forth, gradually developing ways of going out and staying on the sea until they finally developed a deep bellied ribbed ship and they were able to stay on the sea for tactical periods.

Then there was a very small handful of men -- I don't suppose there were more than a half a dozen at any one time -- who had the physical power with the sword to command the total community to the extent that they could say, "You know how to make rope," and "You, you know how to weave," and so forth. "You know how make metal," and "Every one of you come over here and build a ship."

You had to know also why it was worthwhile doing all those things, and why you had just a handful of people at any one time who had the navigating ability, the mathematical ability, and travelled this way and that long enough to catch on to the fact that three quarters of the Earth is water, whereas land is limited, water goes on everywhere. Very small numbers of these men really go to sea but they are the world men.

I discovered in the Navy that there were these people. I call them the Great Pirates because no human beings on the dry land were ever able to enforce any laws out beyond their shores any distance at all. Therefore the people at sea were outside the law, they were inherently outlaws, they lived only with physical law, the laws of nature both as the behaviors of men or the behavior of the seas, and it was a very tough and a very hard life.

Now in this game of the sea many things are going to show up between the plan strategy of the world man on the sea and the more or less fearful defensive strategy of man on land. For instance, on land, there being very little to support a man, those who find a favorable place then try to guard it, and there is no time at all before there are people who are trying to displace them and you have battles. The ones who are guarding begin to build great stone walls having then the principle of the lever.

So this is one of great methods of defense, so that the men on the land thought of security in terms of wider walls, higher walls and bigger granaries. Sometimes the outs are in and the ins are out, but this is the idea of the great defense. We still have it very powerfully. We have such expressions used by life insurance companies... "As secure as the Rock of Gibraltar" idea. In your age "Rock of Gibraltar" suddenly doesn't have quite that meaning, but you can certainly make an extension to think what I'm saying.

The grand strategy on the land, then, is always more with more: bigger walls, more grain bins. On the sea it was a completely different situation.

This was not something that was published to the public, nor were there any books on it whatsoever. But the main point is that the man who went to sea didn't go there defensively and he didn't go in a stone boat 'cause it would have sunk. He went there offensively and a wooden ship would do. A ship that could make one round trip would make a vast fortune, so it could be a very temporary affair.

On land, then, people are thinking of security in terms of more and bigger walls; it's really more fundamental than that, if you have a big thing, lots of land, big everything, big anything, you're going to be secure. On the sea it was exactly the opposite.

Every time I speak with an architectural association I'll say, "Somebody tell me what this building weighs," and no architects put up their hands. And I'll say, "Just roughly, within 100,000 tons." Still no hands. "So just within a million tons." No hands. Men don't think about their buildings in terms of weight, and you ask the same audience if they know what the Queen Mary weighs, and yes and no, 85,000 tons. You ask what a Boeing 707 weighs and they know that. It's interesting, then, that nothing on land have we ever thought of in terms of weight, because really, the more it weighs the more you felt secure. Now then, this being so, you certainly have never ratioed

performance per pound. If you don't know what it weighs, you're obviously not measuring what you're getting out of your weight.

Everything taught in economics at any school or college is in terms of that thinking; just simply more with more.

I'll give you a very sharp kind of awareness: doing more with less doesn't mean trying to thin out any known piece of design. It does an alternate piece of design that gets the same result. We have today, for instance, one communications satellite weighing one quarter of a ton out-performing the trans-oceanic communications capability of one hundred and seventy-five thousand tons of copper cable.

Therefore I said that in 1927 it could be that Malthus was wrong. We could be able to do so much more with so much less that we could make possibly enough to go around, and I began to make studies in 1927 to see whether that was even possible. Sure enough, the more I calculated the more it seemed probable that it really could be done.

And so in 1927 I launched into a life-time program. I tried to get people I thought would be very powerful and effective to pay some attention to what I'm saying and to do something about it, and found that they were simply too busy with the same old program; man going to make a profit this year.

And I saw that all my contemporaries had to make a living. The first thing they had to do was earn a living and hope that they could earn it at something pleasant. You had to go out and prove that you had the right to live: assumption was that you're supposed to die and had to prove the right to be an exception and live.

Between 1900 and today, two thirds of a century, we have gone from less than 1% of humanity to pretty close to 41% of humanity enjoying a standard of living unknown or undreamt of by any monarch before the 20th Century. During that time the amount of metals -- all reserves and all metals we have mined -- summed totally per each world man has been decreasing.

It is those metals with which you build your machinery with which you do your more-with-lessing. Now because the resources have been continually decreasing you can only explain that we have forty-fold the number enjoying an unbelievably up to this century standard of living by doing more with less, because you didn't have more resources, you had less resources.

At the present moment all the resources we have in machinery and building and structure employed at their most efficient have only a total capacity of taking care of 44% of humanity. Under the present conditions of design use of our resources, 56% of humanity are doomed to early demise having gone through a great deal of pain along the way.

What has fascinated me is that that curve, if you don't increase it any more, goes to taking care of 100% of humanity by 2000 A. D.; but I find that

the way we are getting there is by great nations scaring themselves to death and undertaking new technologies that they haven't taken before.

These are the facts as I find them. Man in his vanity, and the various ideologies of the various governments are saying, "Yes, we are responsible for things getting better," and no one is really assessing how this thing is coming about, so that there's a great deal of confusion about it.

I can say to you the following and you can see exactly what happens: I hear a great many people apprehensive about technology (and I know the technology could be very much better); people are very apprehensive. So I say, "Let's remove technology." I don't want anybody with any political system to say it was the Wright Brothers or some Edison or some Marconi who suddenly changed things overnight. So I say take away all the machinery, and the pipes and the wires, take every bit of machinery away and throw it in the ocean. You'll find that what the consequence is is that within six months two billion people would die of starvation.

So that isn't such a good idea. So we leave all the technology where it is, and we leave everybody who knows how to run it at their jobs.

And we're going to take away from all the countries around the world all politicians and we send all the politicians for a trip around the sun. You find everybody who's been eating keeps right on eating and with the political borders down you'll stop flying across the borders and we will be well on the way to taking care of everybody in a hurry.

I would like to talk to you about what I see going on in Vietnam right now.

I will point out to you that the scientist kept building more and more powerful hitting power. I would like you to think about a duel. You have men who purposely duelled and they stood there and they had their seconds and somebody dropped a handkerchief and whoever fired first, if he aimed accurately, killed. The other bullet didn't get away, and the other man didn't have time to fire his bullet. There was actually no simultaneity there, one got there before the other fellow could fire. If he hadn't aimed accurately then the other fellow might have had a chance to hit, therefore he might have duelled a little slower. We have the Western story, which is in all of the moving pictures we have. The good man and the bad man, the good man minds his business, and the bad man puts his hands on his gun, and the good man is always faster and gets his hands on his gun and he gets the bullet off.

Now then, what has happened with the development of rocketry and the atomic warheads and so forth is that you're at the point where you have this enormous hitting power and you could send it a great distance away.

You could send it from 5,000 miles away. Now it travels at 15,000 miles an hour, therefore at 5,000 miles away it's going to take 20 minutes to get there. You also have at the same time radar eyes and your radar eyes see at

700,000,000 miles an hour, instead of 15,000 miles an hour, so you see it leave.

You see it at a split second leaving, so now you have a duel where one man puts up his bullet and it's going to take 20 minutes to get there, so the other man sees the bullet coming and of course he gets his gun and fires his very accurately.

They have 19 minutes left so by the time the 20 minutes is over everybody has everything in the air. If you ever got this kind of duel going... I've not talked much about the utterly devastating biological warfare and the chemical warfare, both of which have been brought to the point where any of these three can completely wipe out humanity.

I would like to give you a little idea of where I think we're going from here. Quite clearly a design revolution is all that's changed things, and all the young people of today very properly and intuitively feel for the first time that war is really unnecessary, and you don't have the statistics to tell you why it is. You've intuited it, and you're right, 'cause the intuitions are very powerful, and your subconscious does begin to calculate things way ahead of your brain, so that your intuitions have been good, that you shouldn't have war and don't want war.

From my viewpoint there has never been anything called peace. Man hasn't the slightest idea what peace is. There has been what I call official war and unofficial war. In the unofficial war you're in great pain and during the official war there's some cooperation and goodwill, and during the unofficial war there's none. What has been called peace is when one side has gotten ahead and from the moment it got ahead it said, "Now I've got my peace, and this is peace, and everybody must enjoy my peace." But very few people enjoyed their peace. The head man was never even peaceful himself. So I don't want any nonsense words to myself about what is going on here.

Now, see what is going on in Vietnam, you have the major nations of the Earth assuming Armageddon, not enough to go around, and you can't use your big tools because both sides lose. So how do you win the war using other than the big tools? This was a brand new challenge. So what goes on in Vietnam is an experimental warfare between Russia and the United States that has nothing to do with the Vietnamese or the Viet Cong. It is absolutely experimental, just as the Spanish War was experimental just before World War II. Both sides hoping to learn enough about it, both sides saying, "We hope it isn't Armageddon, but we can't wait for Armageddon to find out how to carry it on." Therefore if you can't use the biggest tools you probably go in exactly the opposite direction. You go into all sorts of subtleties of psychological warfare and so forth. Both of them joined the war deliberately the furthest away. It's a world game here, so they joined it on a world basis deliberately the furthest away from both of them.

Now it takes twenty-two years, average, for the science phase going through the weaponry to fall out into everyday life, upping the standard of living of man. We could eliminate that completely if we were not operating just completely out of fear and leaving it to the other man. I hear people talking to me in apprehension all the time, everywhere. And I find, I say, this need not be. They at least ought to know what the stakes are, and these are the stakes: you can have a design revolution and you could have all of humanity taken care of by 1980, and this would eliminate all the basis of war altogether.

I'll give you a little idea of the way I think things are going to come out. I point out, then, that we have developed the ability to prevent ourselves from blowing ourselves up. Apparently evolution was the intent that man would keep on, therefore an antibody appeared. The antibody is the computer.

The computer is taking over all the specialization 'cause it can stay up all night picking out pink from the blue faster than you can and under conditions of heat where you can't possibly operate. It's taking over all the specialization. It's going to force man back into comprehensivity where he was born and meant to be. So if all of us begin to be concerned about the whole and with computerization we're going to be able to get enough information about the whole.

The computer is not any monster, and it is not going to run us. What it is going to do, however, is find the basic information for us that we haven't been able to cope with ourselves. Therefore I see the computer suddenly saving man, coming back and going to save him in another way, a very important way. At Southern Illinois University we are well on our way to the development of what we call the world game -- how to make the world work. A computered game for which the State of Illinois is now appropriating four and a half million, and twelve million total is going into it and I can tell you, I am now in a position to know, we will get the rest of it and we will be under way. And this game will be played with all those resources and human trends and needs, the kind of of data we have on the World Trends Inventory in which the game is to see how do you employ the world's resources in such a way as to make all of humanity a physical and economic success.

The computer, however, does something you haven't had happening in other games because somebody comes along and says, "I'm sure you left this information out," and it goes into the computer, and so we can continually keep memory of the order. We can remember every play that's ever been made -- be able to say if you made that move this is probably what's going to happen, of course there have been some other moves have been made since, so it may come out a little differently this week.

It's going to show the United States is wrong, Russia is wrong, everybody's wrong, the computer shows it can come out this way, and this is abso-

lutely contradictory to the present statecraft of these nations. In the transmission of electricity from the great energy centers our industrialization then depended on these energy networks which were very limited. The eastern seaboard couldn't in any way affect the midwest, let alone across time zones. Immediately we go to 1,500 miles, we can do so. Now as you generate electricity in any one center you commit so much energy to this thing and you have to take care of the peak loads that different industries are going to want, and inasmuch as new things are coming in all the time you can't really predict very much so you have to produce always a little more than is being used. What is not used has been generated and is lost.

Therefore if you can integrate networks so you go over to the next town then you find that peaks and valleys of the two towns are never the same, therefore your rates are very much less and the profits go up to the generating companies. When you can cross a time zone you suddenly get the peaks and valleys completely balancing each other and extremely efficiently and down go the costs and up go the profits.

We are underway with this system which is going to mean extraordinary integration of the power capability of the North American continent. The same thing is going to go into the computers of Russia and the United States and they are going to learn that they are going to have to integrate those networks because they'll be going from the night side to the day side and you couldn't get higher efficiency.

This means there is going to be a power network going right across the Bering Strait, and just immediately north within full connecting capability with China, and China's industrialization is completely dependent upon this power. Power is the absolute key to this industrialization. The computer is going to show China and China's leaders that they just have to go into that network because they will complete their promises to their people that much more rapidly.

In the meantime let us come back to the not-well-informed humans and their crossbreeding and the things going on in Vietnam where I see that it is simply that Armageddon thing at work. There is absolutely no stopping it except by committing yourself to the design revolution which the computer is going to show and make it very clear to you that you can arrive at the elimination of it by 1980. If the computer begins to tell you way ahead that this is the way it going to come out, you might get politicians of both sides to really yield. This is your grand strategy.

ESTA ES SU GRAN ESTRATEGIA

Hace muchos años, aprendí que es verdaderamente posible pensar en voz alta y pienso que es un hábito extraordinario; así son los encuentros reales. Habrá personas que en una reunión extraen un papel de su bolsa y empiezan a leerme un discurso y yo les digo: "Deme Ud. el papel, yo mismo lo puedo leer."

Creo que lo que realmente vale es el hecho de que no tenemos la menor idea de lo que pasa en nuestras vidas. Esto es algo muy misterioso y prefiero mirar en los ojos de todos no sólo me interesa escucharme a mí mismo y descargar algunas ideas. Estoy interesado en los muchos encuentros de mi vida, en cómo podemos averiguar mutuamente el porqué estamos aquí, qué sabemos de lo que está aconteciendo y lo que deberíamos estar haciendo respecto a todo ésto; si fuese posible.

He pasado gran parte de mi vida desaprendiendo. Soy el hombre más desaprendido que conozco porque le he dedicado tanto tiempo. He descubierto que toda la información que recibí originalmente en la escuela con respecto a nuestra presencia en el Universo, por no decir más, ha sido información engañosa.

En su trabajo experimental con el átomo y su núcleo, el físico ha descubierto no lo que se enseña en la escuela. Sólidos?... no hay sólidos. Más aún, no hay ni siquiera la insinuación de algo llamado sólido en el universo. No hay continuos absolutos, no hay superficies, no hay líneas rectas.

Todas las cosas que se enseñan como obvias en la escuela se vuelven menos obvias cuando se empieza a estudiar lo que acontece en el universo. Simplemente, tenemos constelaciones tales como la Vía Láctea, eventos generadores de energía y éso es todo lo que se puede decir. No se tocan; son totalmente discontinuas; no hay sólidos.

Ahora bien, al pensar así, quiero que se comprenda que el físico no ha encontrado cosas ya que al no haber sólidos no puede haber cosas. No hay sustantivos, no hay verbos. Se da una cuenta de que el 99% del lenguaje es la elaboración de humos sin sentido.

Es un juego perfectamente legítimo si se quiere decir: "Prefiero simular que no estoy en el universo sino en una esfera estática alrededor de la cual giran todas las estrellas," entonces se puede jugar este juego. Pero habrían que ver la utilidad que sería para uno mismo o para los demás el estar mal informado.

Escucho a la humanidad hablar de automatización como si fuera algo nuevo y siniestro. Descubro que el hombre siempre ha conocido la automatización, ya que la manera en que se hace está totalmente automatizada. Los padres no saben hacer niños... sólo empujan ciertos botones y todo lo demás está automatizado. Nadie sabe cómo aprovecha el organismo los alimentos. Se