

Loving Dialogue

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Discussion with Gorbachev

GROWING up in a war turns you into someone completely different as opposed to a person who has not lived through such an experience. You just know; it **must not** go on like this. That is why I put all my energy into preventing war. I believe that if you have experienced war, nobody need try to tell you that war can be justified at times. No, there is never such a thing as a just war!

I wanted to write a book about what circumstances had led to such an escalating situation as the Cold War ending without bloodshed. It was clear to me that some sensible people had to have been involved, including Gorbachev himself. So I got in touch with him and told him I was planning to write this book and was interested in finding out how Gorbachev came to be Gorbachev. After all nobody expected the leader of the “bad guys” to be the one to end the conflict, right?

Subsequently, I had a long discussion with Gorbachev. After we had been talking for a while, he said “You know, I’m beginning to think I myself would like to write a book about nonviolent peace.” Then he suddenly exclaimed, “Oh, I don’t have to write it!,” and went to his bookshelf, picked up a book, and said, “I don’t need to do it, because, you see, I invited Daisaku Ikeda to the Kremlin and had a talk with him, and this is the book that emerged from that talk: A Dialogue between Ikeda and Gorbachev.”¹

Read it, it’s fantastic! Gorbachev and Ikeda are coming from completely different angles, but you can see how they begin to harmonize while holding this dialogue! This reminded me of my relationship with Heisenberg. I had such talks with him where we began to discuss things we did not quite understand. When you trade stories back and forth—not just rational statements—then your communication turns into communion, and you are able to say ‘I learned something from you and you

learned something from me, but the result is neither *me* nor *you*.’

Gorbachev picked up the book and said, “I spent the whole day talking with Ikeda.” This is excellent; it is not so easy to find common grounds. Gorbachev’s best friend was Chinghiz Aitmatov, a fantastic man. [Ikeda also held a dialogue with Aitmatov, a famous Kyrgyz author. This dialogue was published as a book²]. When I heard of the people with whom Daisaku Ikeda had spoken, I exclaimed, “Wait, I know him! And him as well!” When I visit Japan—and I am there every year—I’d like to visit Ikeda as well. It’s fantastic taking turns listening to one another, and not discarding the other because they are of a different opinion, but instead asking, “Where are you coming from?”

I wish I could go to Israel and to talk to them and ask, “Please tell me why we all have to go through this; maybe there is a good reason for it, but there are also good reasons why this is impossible. We are a billion people! There must be a way to work things out in a different way!”

You can find something in common with *anybody*, even with someone you do not like at all. So why not use that as a starting point? This is what I learned from Gorbachev. He told me great stories which I treasure to this day.

No Reason to Justify War

You might be wondering what I am doing here, giving this lecture. After all, I am a nuclear physicist, and this place represents something different altogether. It seems something must have gone wrong; they must have invited someone to talk about something that has nothing to do with his specialty. A nuclear physicist? That sounds scary! You might be thinking, “He’s one of those guys that helped build the atomic bomb! What does [nuclear physics] have to do with living beings, with what’s important to us, with living a vibrant life. What do we need these people for who went off in the opposite direction?” Well, this is not the case; even though I was a student of Edward Teller, I never worked on a bomb. But I grew up with people who focused their lives on building bombs. And that, for sure, must infuriate anyone who cares about life at all, leading them to say, “It just can’t go on like this!”

We urgently need to leave this path. We have to create a future without waging wars against each other. I find it most distressing that we have different cultures here on earth—all highly interesting—societies that have developed hand in hand with religion; yet somehow these societies developed the conception that they contradict each other. And not only that they contradict one another, but that only one person is

right and the others are not. And herein arises a justification to wage wars, so that only the—so to speak—“right ones” may survive. This is something that will particularly bother someone who may not work with weapons but did work with people who developed weapons. This is why I feel it is my duty to do something that has nothing to do with my regular work.

But there is more to the story: The desire to make known the fact that the same physics that produced the atomic bomb are totally different from what we learn in school. Physics is completely different! The revolution in physics actually occurred one hundred years ago. Why do we not know this fact? Well, in my personal development, I spent a lot of time thinking about what holds the world together at its innermost core. This is also a philosophical question, so I decided to become a physicist. Especially having experienced war firsthand, I was inclined to say, “I don’t trust people, they are lying to me. I want a job where I can see for myself what is right and what is wrong.” This is what guided me in the beginning. Well, things turned out a little bit different.

Through my connection to Werner Heisenberg I suddenly learned that physics arose from and led to the fact that matter does not exist at all. People invested fifty years of research into the quest to find the smallest particle of matter from which the whole universe is built, and all of a sudden they found out that this basic component does not even exist! Poor guys, fifty years searching for something that does not even exist... But it was not all bad as it led to the discovery that the foundation of physics was actually a completely different one.

We Experience More than We Understand

Regarding the title of today’s lecture, “Loving Dialogue,” I would like to say: It does have to do with love, in the sense of finding out what the relationship between science, culture and religion is. Are they really separate? We draw a line between matters of the body, the soul and the mind. We do not really know how they are connected. Anyway, it turns out that this revolution that came about in physics one hundred years ago gives us the answer that these three things are not separate at all, but only are skewed by our perception that they *appear* to be three separate things.

This is why I am interested in different religions. This is why, for instance, every year I travel to Kazakhstan, where people say, “What can we do in our country of nine million, with four different languages and six different religions. How can we move people to cooperate with each

other to come together—without anyone having to give in?” It is actually possible. All we need to do is not expect people to all become the same in order for things to work out. It is precisely the differences between us that make things work. And so, since I do not much care for the words “soul” or “mind” I say what actually connects us is what we might call “love”—we cannot really express in words what it actually is. I will go into this deeper later on.

Now I want to talk about how we understood physics until now, what the world looks like as perceived according to our school books. Here is an important statement you will all understand: “We living beings experience more than we understand.” Everyone says: “Well, of course!” Well, *why* of course? To say I experience more than I can understand means: “I’m not good enough yet. I need more universities telling me how to explain everything—then I will understand.” This is the perception we have: what we experience beyond our knowledge is nothing more than something yet unknown that we need to figure out. But it turns out this is not the case. Thus you do not have to be depressed, if you are experiencing something you cannot explain. It’s wonderful! Because if you do, there is something in your mind that you cannot understand. And this is a new world that is important for our development.

We experience more than we understand. There is something more that exists in between. And I can tell you that the language we use, contrary to e.g. Chinese or Japanese, is difficult. We use concepts to describe what we can grasp with our minds—but what about all that is in between? It is not even mentioned! OK, it is mentioned in the verbs, as you can see. Suppose a seventeen-year-old comes up to me and says, “Could you tell me what love is?” I say, “No, I can’t.” “But everyone is talking about it, and I’m still young, and I want to know what it is.”

I reply, “No, I can’t explain it to you, because love is something that has a relational structure, not a descriptive one.” “But I have to live in this world somehow.” “True, this is your life, but you won’t be asking this question in the future.” A year later I meet the young man again. He comes up to me and says, “Last week, I fell in love.” And I reply, “Wonderful! So tell me what that means when you say, ‘I fell in love.’” “I can’t say.”

This is an example of the fact that something very valuable to us exists in the background. The fact that I cannot explain it does not make me feel unhappy—on the contrary, it shows me that doors have opened up for me, making my life that much more vibrant. I would go so far as to say that things like this—of the sort that we can experience but

cannot explain—are what is called faith. A child will say, “Yes, I believe it,” not “I can explain it.” In our culture we say we have the ability to understand everything. And then we try to step into a circle of knowledge, where we try to somehow explain what we see so that we can understand it. And when we have a grip on it we can touch it, so to speak, so that ultimately we can change it, making us capable of doing something with it.

Differences between Realness (*Wirklichkeit*) and Reality (*Realität*)

So, in order to describe the state of knowledge, we introduced the term “reality” (*Realität*). The title of this topic would be “The experience of ‘realness’” (*Wirklichkeit*). In German, we have the word *Wirklichkeit* (*realness*) and it is in fact different from the word *reality* (*Realität*). You can see it as follows: A *realness* is something that I experience, but cannot explain. That means that I, the subject, look at the object, but there is something in between that I do not want to take apart; this we can call “a-duality”: one cannot exist outside of it. Thus, subject and object are somehow connected; however this exceeds interaction; rather, it is an experience that in no way separates one from the other. However, from the perspective of a natural scientist, the scientist has to first of all learn to distance himself from that which he is observing, to separate himself from it. This gives him the ability to talk about what actually is, and not about how he feels about it, and so on.

Our culture is quite famous for having this capacity. The problem is, when I separate the object from the subject, the resulting description is still not quite right. One object is separated from another object: as if there was a heap of things separated from one another, yet somehow they build the world. This is the structure that characterizes the old physics. The separate object is a thing, and that thing expresses reality. That is where the term came from. But *realness* is something else entirely. *Realness* is something at work and continually changing. This is a completely different way of looking at things.

Our Western way of viewing things is that phenomena can be understood, then treated, then manipulated. This leads to power structures. First I isolate something, and then I say I understand it, and then this is mine and not yours because it is separate. This is an important point. This is something that has always moved me on my trips to the Far East. There it is clearly about *realness*.

Everything is Basically Alive

The old physics, which you learned in school, cannot understand what is alive, only what is dead. And that is why it claims that life is just a very complicated lifeless thing that just looks like it is alive. However, it is just the opposite! Everything is basically alive. When I mix living matter it starts looking like it is not alive anymore. This table here for instance, is alive, but you will disagree; this is because everything is mixed up together. That is the old physics that we learned; everything is separate, but somehow connected by interactions that we do not quite understand yet. We have to realize that when we speak of reality (*Realität*), we kill that which is alive, and then we need not be surprised if what is alive is not even part of our physics. The old physics says: In the beginning there was matter and substance, the building elements. They explain how it is all connected. In old physics there are laws one can deduce, that can be applied and used to predict what will happen.

The non-living—and this is a very important point—in comparison to the living is another story entirely. Non-living matter has the property of obeying the second law of thermodynamics, which means that in the future the probable will occur with greater probability. Fantastic, this new discovery that the probable will occur with greater probability. It is actually not as trivial as it sounds. You experience it every morning at your desk: completely orderly in the morning, by noon it's a mess, and in the evening it's chaos! It always goes from order to disorder, and it is no help imagining when you go to sleep everything will reversed! No, it never goes the other way. So that means that we can, from the old physics point of view—without referring to the new physics—establish that nothing living will ever come out of non-living matter. How can it be then that two and a half billion years ago we were this chemical soup, and now there is life all around?! How did we manage to do that? The amount of order increased rather than decreased! Was there a guiding hand somewhere? Where could it have come from? That is something we cannot explain. When you straighten up your desk, you need not only energy but you have to figure out where everything belongs to be able to make any order out of it.

Without Taking Things Apart—New World View and Religion

Now I will make a big leap to the beginning of the 20th century, when it was discovered that the old physics was no longer valid. No matter how hard one tried to deny this fact, it could not be ignored. We realized we

had come to the limits of our knowledge and that we could not keep doing things the old way. For a long time, the big question was how to manage using the old terminology and language of physics, but it could not be done. A new world view emerged, telling us that things were completely different than we had understood them to be—much more open—and suddenly it seemed that the new language that was required shared many similarities with what we call religion—not the established religions, but that which is actually behind them all, because you do not make religion understandable in the moment you explain it: There must be something essential which is beyond our understanding.

How do we deal with this fact? One has to simply leave it open, and that also means that not every question that we ask has an answer. There are questions that cannot be answered because they are not well formulated. For example, what color is a circle? Blue? Red? Green? No. Colorless? No! Color has no meaning for the circle! But wait! What if I tear a piece of paper, take my pen, and look! The circle is blue! But the color comes from the pen. And the fact that you can see the circle's thickness is due to the little ball on the ball point of the pen; it's as thick as the little ball and has nothing to do with the circle. Well then, how should I talk about this circle? Close your eyes and try to think the color away. That works. And now, think the thickness away. Nothing! That's because you are looking for the circle outside rather than within your self.

If one has had such an experience it is very important to realize that the many religions that we have today—if we go look back 4,000 years—are actually rather similar. Only the language used to talk about them differs. We listen to the language and say, "That's something different!" Yes, it is a different language, but that is like comparing French and English with German and saying that it is not the same. So, if we go back and ask ourselves how all these religions arose we will find out that in the moment you begin to write it down you say, "Yes, what I've written down is understandable, and so it must be true." No! It is just my way of approaching that which is essentially not graspable. This does not indicate stupidity on our part, only that which is not graspable is to blame and still I can say, *I've fallen in love*, and the other person can nod and say, *I understand what you mean*.

Today we find ourselves in the situation that we use modern physics, but we act as though it was still the old physics. That is quite schizophrenic. We are dealing with the bombs that modern language needs and say we want to shape the future. We are just hanging on—we being the western world because when I look to the East, I see that they

do not make things so simple. For them it is not so important that everything you do is put in writing. Their language expresses relationships. So, if we go by the old description, we start with the elementary building blocks and analyze them. The laws that govern them are all part of the old physics and so we put them all together. And some kind of result will be sure to come out of it, but it will not be unambiguous. To illustrate, let me show you this picture of a young girl. However, it is not just a young girl. If you take a closer look you can also see an old woman. It depends not on the physical laws of the structure, but on how I put the pieces together. So for some reason I choose to interpret the picture one way or the other. I still see the young girl in this picture, even though people tell me it is time I start seeing the old woman, I'm 83 after all, but it is hard, because I really think that youth is pretty interesting!



What does it mean if you use this other—let's call it—dimension. It means you have a different perspective: you do not take things apart, but instead observe them as you would observe a painting and say, "Isn't that pretty." And if I say it is pretty and someone asks me why—well as soon as I start questioning *why* it is pretty I start taking it apart again. And soon enough I will have forgotten why it is pretty, because I practically just tore it to pieces. We need to get into the habit of looking at the big picture, and not saying that the big picture is only valuable if I know all the details. The details are really my own construction anyway,

they do not really exist. The world is not a reality but a realness that is continually changing. We can never reach the point of understanding it; we can only use its changing nature as a navigation point.

What Exists is not Matter

The new physics says realness (*Wirklichkeit*) is not really a reality but a potentiality. *Realness* is the possibility of realizations—realnesses—because there is far more than one answer. And the funny thing is, if you get to the bottom of this world that we experience then you will see that what was there in the beginning is not matter—matter does not even exist! All that exists is what is in between, not what I can hold onto. That is quite amazing, that all that exists is what is in between, but not the things you can hold onto: visible points of invisible intersecting relationships. However my wife says that my day depends on all these things I can hold onto, and she is right. Even if you say matter does not exist, roughly speaking, a whole heap of the intangible put together can create something tangible; that which we call matter. And this is the world we orient ourselves in.

If I ask: “What exists?” there is no answer. All I can ask is: “What happens?” Everything is alive, so to speak. Instead of an atom—something that is only matter and does not have any other properties—we have something that is always changing. I call it a “*Wirks*.” People ask, “What’s a *Wirks*?” I reply, “If you do not understand, then you’ve understood it!” And if they say, “Tell me more,” then I reply “It has to be enough, because you have this possibility in the background and it is important for you and your development! This implies a completely different structure that bears the possibility of developing into a different direction, where the strict natural laws of cause and effect don’t apply.”

This is just a clue as to how physicists came to the conclusion that nothing tangible exists, only what is in between. Why is the idea of the atom as the smallest particle not true? They looked at the atom and said it looks like a ball and it looks like a system of nucleus and electrons orbiting around; kind of like the sun and the planets. But this just did not work. Electrons are not real, protons are not real, all these terms you have heard—people just use them because they want to understand. And this has consequences. I will not elaborate on this much more, I just wanted to explain how we got on this track that forced us to see things that are not tangible.

The Future is Open, so we can be Creative

I think this is a good thing, because as long as we are bound to strict laws of nature, it is like being in a prison. If I say I am creative the answer will be, “No, you just think you are. You *have* to do it: it was already decided at the time of the Big Bang that 17 billion years later you would be giving this lecture here. Everything is included, all your stammering, you don’t even have to apologize for any of it.”

What matters is not matter, the single particle, but how it is all connected. You think you are sitting on that chair and are independent from the rest of the world. But no—we are in fact something that is not localized! We are all connected; there is no separation in this world. Everything is connected, but not all ties are equally strong. This is what makes it possible to coexist in this world, without an intellectual understanding of each other. All we need is sensibility for each other.

First of all; what makes the difference is the way things are connected. Based on this realization the second point is that there is actually only one creation which is interconnected and inseparable. The separations are built in at the bottom and grow in different ways. This means that how it grows is not the way our logic would have it and that when I study something it has to be one way or another. It is a different kind of logic. There is endless variability, and that is the reason why we can all be creative if we act accordingly. And that brings me to the third point: the consequences are that the future is open, there are no laws. If this is our starting point, it is infinitely open, but not randomly open. I don’t want to elaborate, but it means that each of us can, in principle, be creative. And being creative does not mean that everyone in the world goes off to a different direction, but that I have other dimensions, so this world is comprised of more and more dimensions, not only three dimensions or six dimensions but an infinite number of dimensions. Every creative aspect leads to the growth of even more creative space, so I do not step on someone else’s feet in the process of being creative, but in fact open up a new configuration.

That is why I do not believe in the Big Bang theory that you hear about in classical physics. It is not even interesting! They say, 17 billion years ago there was this Big Bang and then it all started and just went downhill from there and in the end it is all over. No, it is not like that. If there was a Big Bang, then it was something altogether different. It bangs and bangs and bangs and keeps on banging, and that is each and every one of us! We all take part in the creation of the future. Is that not uplifting, that we do not just have to watch but can actually do

something to change our direction?

Cooperation is the Foundation on which the Cosmos is Constructed

Why is what I have been telling you important to us? Does this really matter to the world, which is ten to the n th times bigger than what we were looking at in our experiments? Do we need some means of magnification, something to billow it out? The answer is: no. I brought this instrument along to demonstrate something. This is a pendulum, you can easily calculate its movements; it's something you learn to do in school. See how it wobbles back and forth, now you see it's getting tired because of friction, it's losing energy, the amplitude is decreasing and it slows to a stop. This is very predictable, just like old physics. Well, this is not very interesting.

But can we really calculate it all? The answer is: no, we cannot. When it [the pendulum] is in this position all the way up here, then you cannot predict what direction it will swing over to. If you swing the pendulum as hard as you can it stands still up there and then it falls down, to one side or the other. Not even a physics professor can predict which side it will fall over to. I always use an old trick and say, I am a physics professor, so I know which side it will swing to; and then I stand on one side of it and predict it will fall down toward me. And it does! The only reason it does is that I also exert a force of gravity on the pendulum. Wherever I am standing, I am not alone in this world. If I am standing on this side, I will pull it this way, and if I am standing on the other side, I will pull it the other way. That means that this position here is an *instable equilibrium*. But this point of instability also means it is the point of highest *sensitivity*.

You often hear about how a butterfly's wings can cause a typhoon. Everybody says that cannot be true. In this case too, a point of instability makes it possible for such a small cause to have such a large effect. The point is that there is a situation in the background, a potentiality, no longer a reality, but rather a multitude of connections, a world of interconnections. At the point at which water changes from its gaseous to its liquid state, if there is a minor disturbance, then—whoosh—the pendulum falls in one direction. So, instability means sensitivity.

If the pendulum could talk it would say, "What a great feeling this is—nobody knows what I am going to do, except me." But it cannot talk, because it drops down, and that means that it dies and it has no more strength to tell anyone. It would be nice if this had a little bit of variety

to it, so let us introduce some variety here to make things more lively. I have a single pendulum here and I have inserted two needles which I can barely take out again; this has now become a tri-pendulum [a pendulum on a pendulum on a pendulum]. When I set this tri-pendulum in motion, this unstable situation occurs more than once: again and again it scans the subsurface, so to speak. If you let your computer calculate what happens next, it will calculate wildly and then stop and tell you, "Error, this does not exist."

And it does not, because this point is not calculable. Suddenly, the world becomes open—isn't that great? Every time I do this I get a different result. Then I say, "This is not enough." From the beginning, through the experience, until death, is just a matter of minutes. Pretty short—I'd like to live a bit longer? How can I do that? I have to fixate (it in) an unstable situation. I cannot manage this with just one pendulum, I would need many. It is like standing on one leg: if I lift one leg and the other leg does the same I would tip over, which is not a good strategy for survival. But can we do anything about this? For instance, when you [one leg] begin to tip over, then you move forward, and when you [the other leg] begin to tip, you go forward, and now ... you're walking! Each time I fall, the other leg does not do the same thing, but rather the exact opposite. That implies you should not do just as I do and then everything will be fine; no, to the contrary, it would be a doubly wrong!

With more of this instability joined together with others that are different, one can create new situations which in the end are so precious and—after two and a half billion years—have led us to this result. So, instead of the opposing force becoming an enemy, we say, "Thank God you are here, because you pick me up when I cannot go on any more." This interplay of diversity, a cooperative interaction eventually leads to the existence of very complex things that we can recognize in the visible manifestations of life. But the point is: even though we can explain it in this way, the question remains: how do we get to the point of cooperating? With people, it does not happen so easily. If they are different they say, "Ha ha ha, if I do that, then you will stumble, and then it will be my turn."

Then what could be a reason for them to cooperate? It has to do with the fact that from the very beginning they are not coexisting independently. Rather, it can be likened to an organism in which the different living parts cannot say, "I'm going to make the other parts stumble," because it would get them in trouble. That means that the precondition is that cooperation is not a superimposed behavior, but rather the foundation, the way the entire cosmos is constructed—it's made that way.

The Universe Demands that We live a Vibrant Life

If we are creative, then we are co-workers, not separated from others. Here we need dialogue as well. I need to speak with the other in order to do something for them in an atmosphere which is symbiotic. When two come together they can join forces in a win-win situation, and not like in a game of Monopoly. Monopoly could never lead to the fact that we have 500 million different species out there without having to have a big meeting every year about how to arrange things with one another. Everything is connected with each other, and that is why we have progressive development which is ever more vibrant. If we think about what *sustainability* actually means, the *ability to sustain*, it is not sufficient if we fail to include vibrant life itself.

If I do not mean the living, but instead cultivate the ability to stay the same, it is really easy; all I have to do is just lie down and die, and then I am done, I have nothing more to do. There is no young person who says, "Oh, that is just what I want to do. I want to just lie down and then I'll have fulfilled my mission!" No, because life is living and vibrant! You have to maintain the liveliness, which means you can do things in the same way or do something different. And that is why we have a universe, a cosmos, which is growing and growing, and not even happening in three dimensional space.

And this is perhaps a good point at which to end my lecture.

Notes

¹ Michail Gorbatschow/Daisaku Ikeda, *Unsere Wege treffen sich am Horizont* (München: Btb, 1998); Mikhail Gorbachev/Daisaku Ikeda, *Moral Lessons of the Twentieth Century: Gorbachev and Ikeda on Buddhism and Communism* (London and New York: I.B. Tauris, 2005)

² Tschingis Aitmatow/Daisaku Ikeda, *Begegnung am Fudschijama. Ein Dialog* (Zürich: Unionsverlag, 1999); Chingiz Aitmatov/Daisaku Ikeda, *Ode to the Grand Spirit, A Dialogue* (London and New York: I.B. Tauris, 2009)