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CONSCIOUSNESS AND HYPERSPACE with SAUL-PAUL SIRAG

JEFFREY MISHLOVE, Ph.D.: Welcome and good evening. Our topic tonight is multidimensions of reality, or what physicists call hyperspace. My guest, Saul-Paul Sirag, is a physicist from San Francisco who has developed theories about the age and size of the universe and the mathematical structure of subatomic particles. Saul-Paul, welcome to the program.

SAUL-PAUL SIRAG: It's good to be here.

MISHLOVE: It's a pleasure to have you here. You know, hyperspace is a very confusing concept. I remember when I was younger in college myself, maybe twenty years ago, people talked about maybe there were more than three dimensions, but then kind of laughed it off. And now, as I understand it, physicists take the notion of hyperspace, or multidimensions of reality, as being matter-of-fact.

SIRAG: Well, perhaps not quite matter-of-fact yet, but they're taking it very seriously, and from my point of view it's practically a matter of fact. But it's interesting that you mention that there's been a great deal of confusion over the years about hyperspace. Of course the modern idea of hyperspace really goes back to the nineteenth century mathematician Hilton, who talked about a four-dimensional space. That was kind of superseded by Einstein's idea of space-time; in other words, Einstein showed that space and time were connected together in a four-dimensional system, and so people kind of pooh-poohed the earlier ideas of a four-dimensional space, because they said, well, the fourth dimension really isn't space at all, it's time. But more recently, we have discovered in physics that what we were for a long time calling the internal spaces of the subatomic particles are really spaces as much as space-time is. In fact, the picture that's emerged now, which is very interesting, is that really there's a much higher dimensional system than just one extra dimension or two extra dimensions. There are many extra dimensions, and depending on how you count dimensions and how your theory works, you might have ten dimensions or twenty-six dimensions or many more dimensions than that.

MISHLOVE: These are considered literal, factual dimensions of space.

SIRAG: The physicists working on these theories consider them that way, yes. And the whole idea really is that space-time, the four-dimensional system of Einstein, is really just a subspace of this much higher dimensional space. And so the three-dimensional space that is the space of our ordinary experience is very much an illusion. It reminds me very much of Plato's idea of the shadow world inside the cave; this is his allegory; it's called the cave allegory. Plato said that the people chained in this cave in such a way that they could not move their heads or their limbs would identify their own consciousness, identify themselves, with the two-dimensional shadows. Of course obviously Plato was trying to say that we are more than three-dimensional beings, but we tend to identify ourselves with our three-dimensional shadows, namely our bodies. Of course geometry wasn't very highly developed then, it was just starting, and so he didn't have the language to talk about hyperspace the way we do today, but I think he intuitively had the idea.

MISHLOVE: We have a similar notion now of the Flatlanders, don't we?

SIRAG: Yes, well, the Flatlander notion was invented in the nineteenth century actually by a minister, Abbott, to try to make the notion of the spiritual realm more understandable, because one of the old ideas, of course, going back to Plato and even earlier, is that there's a spiritual realm which is a hyperspace realm in our modern terminology. A hyperspace realm -- certainly a realm in which the ordinary realm is only a partial view of reality, and the spiritual realm is a much greater realm, a much richer realm. And this realm depends on that realm for its very existence. This is very much the way unified field theory views the world today. So the different theories in unified field theory -- there are many different versions of unified field theory today -- each theory in a sense implies a different type of hyperspace.

MISHLOVE: Higher dimensional --

SIRAG: Different dimensions, different structures in that space.

MISHLOVE: So what they are disagreeing about is what is the nature of the higher dimensions of space, not whether or not higher dimensions exist.

SIRAG: Yes, and the way we test these theories, actually, is that each dimension actually corresponds, in the old way of thinking about things, actually to a different type of subatomic particle. So that's the way we would test these theories, is to find evidence for the existence of these subatomic particles. But these subatomic particles aren't like little BBs at all. They're very different from that, and so that's why they can really correspond to dimensions of hyperspace. To explain that would take us into maybe too mathematical a direction --

MISHLOVE: Well, we don't want to go into that. Let me throw another question at you. We look at human consciousness; it normally seems to have strange dimensions of time and space. We close our eyes and we have dreams, and we have fantasies, and mental imagery of various kinds. With the speed of thought we can go from Egypt, if I say Egypt, to Athens, to San Francisco. Is there some sense in which inner space, as we experience it, might be describable in the same language that you're referring to -- hyperspace?

SIRAG: Well, that's really what I believe. I believe that from the full hyperspace, however many dimensions that is -- and in some sense it's probably infinite-dimensional
-- there are many projections, subprojections you might say, down from an infinite-dimensional space, say, to a 192-dimensional space, to an 96-dimensional space, to a 48-dimensional space, and then down to a twelve-dimensional space, and then down to a four-dimensional space-time. And each of these projections entails different things being left out, so to speak.

MISHLOVE: Is this string theory we're talking about now, or fiber bundle theory?

SIRAG: Well, fiber bundle theory is the mathematics behind this. String theory is a term being used in unified particle physics now, and certainly virtually everybody working on unified field theory today is essentially working on some version of a fiber bundle theory, mathematically speaking.

MISHLOVE: With these various dimensions stepping down, or projecting from one to the other, as you've just said.

SIRAG: Yes.

MISHLOVE: Now, one thing we've got to make clear for our viewers: what is unified field theory? Why is it so important?

SIRAG: Well, actually the whole history of physics has been really the pursuit of unifying forces of nature. Newton, for instance, unified what we call celestial gravity with terrestrial gravity; in other words, the force that makes the earth go around the sun, and the moon go around the earth -- we call that celestial gravity -- with the force that makes rocks fall. He unified those two forces into one beautiful scheme. That's Newtonian mechanics. And then later on, in the nineteenth century, James Clerk Maxwell unified electricity and magnetism and light into one single theory, so he was unifying three very different things --

MISHLOVE: Into what we call electromagnetism.

SIRAG: Electromagnetism. So light is an electromagnetic wave. And more recently, very recently, we've been able to unify electromagnetism with what we call the weak nuclear force, the force that controls, for instance, radioactive decay. So radioactive decay is just an aspect of the electro-weak force, we call it now. There's another nuclear force that we call the strong force, which actually holds the nucleus of the atom together against electrical repulsion, and we're attempting to unify that with the other forces. The biggest problem of all is of course unifying gravity with all these other forces, and also finding out whether there are any forces that we've left out of the picture, some new force lurking in the experimental data. For instance, I and other people have reason to believe that there is another force that sometimes is called the fifth force or the feeble force, and I have reason to believe that that's one that needs to be in there and unified with these forces. Now, the reason for doing this, of course, is always that we seek a more all-embracing, what we consider a simpler, view of reality. And the irony of it is that in order to achieve this simpler view of reality something has to give, and what gives is that the dimensionality of the system becomes very much more complicated in a sense, but very beautiful in a sense.

MISHLOVE: So the ultimate unified theory would be one in which consciousness also fits into the picture, wouldn't it?

SIRAG: Well, not only fits into the picture. What I really think is that consciousness in some sense, in some sort of cosmic sense really, that there really is only one consciousness, and that's really the whole thing. In other words, the hyperspace itself is consciousness acting on itself, and space-time is just kind of a studio space for it to act out various things in. And of course this is an old, old idea in many different spiritual traditions.

MISHLOVE: The one cosmic mind. But what you're saying is that using the tools of modern physics, you can come to that conclusion.

SIRAG: Yes. Well, essentially what we're in the process of doing, really, is describing that realm. You might say that we're describing the spiritual realm, if one takes this point of view. Now, most physicists obviously don't take this point of view yet, but I think they will in another couple of decades for sure.

MISHLOVE: I believe you were quoted in Newsweek saying something to the effect that physics obviously is describing consciousness, and physics is produced by the human mind.

SIRAG: Well, that's not exactly what I said. What I said is that what we discover in physics, actually what we must discover in physics, the structure that we discover in physics is actually the ultimate structure of our own minds. This is an idea that I didn't make up. I got this idea from other physicists such as Eddington, who had this idea very strongly. Eddington was sort of ridiculed for that actually, but it's an idea that makes much more sense in the context of what we're doing now in physics. Too bad that Eddington isn't around now to see what's going on, because he was very, very interested in unified field theory.

MISHLOVE: So coming back: unified field theory carries with it these notions of hyperspace, multiple dimensions, and somehow we're looking at the structure not only of the physical universe, but of the human mind itself.

SIRAG: Yes, but the human mind is just a part. Just as space-time is just a part of hyperspace, the human mind is just a small part of a much greater mind, which is cosmic mind, if you like. We don't have good words for it yet.

MISHLOVE: Well, there are many theorists who talk about superconsciousness and the collective unconscious, and so on. I gather that what you're suggesting, by looking at the physics and the mathematics of multidimensional spaces and the way in which we project down, as you say, from infinite dimensions to 192 maybe to 48, finally down to what we think of as our everyday reality, three dimensions of space, one of time, somehow you may have a mathematical description of the way in which our everyday consciousness or everyday mind is related to this higher mind.

SIRAG: Yes. In philosophy there's something called the mind-body problem. The problem of course is that the physical world just seems so different, the world out there seems so different from the world we experience internally, that how do these two things have anything to do with each other? And so some people attempt to solve the problem by saying, well, the whole thing is mind; it's all mind. That's the idealist solution. And then there's the materialist solution, which is to say that it's all matter, and mental phenomena are essentially --

MISHLOVE: An epiphenomenon, a byproduct of matter.

SIRAG: An epiphenomenon, a byproduct of matter. This way of looking at things is a little bit different way of solving it than either one of those, in the sense that it may lean more toward an idealistic position, but actually one could also consider it a materialistic solution, because after all there's now developing a physics of this hyperspace, you see.

MISHLOVE: What you're saying is matter isn't what we used to think it was.

SIRAG: Right, right, that's right. Matter has for a long time been taking on more and more of the mindlike qualities anyway. On the other hand, people that have been studying the mind by way of the standard techniques of biology and neuroscience and neuropharmacology and so on, find more and more material kinds of explanations for what we would traditionally consider mental phenomena. So the two have sort of crossed over each other somehow at this point in history, and I think that the solution for the mind-body problem will be found in this hyperspace picture of things. In other words, the old spiritual idea that the mind is not in the body -- if the mind is in the body, then you definitely have a mind-body problem; but it's that the body is in the mind -- you see, the cosmic mind being this hyperspace. And so the body is just a shadow that is projected, so to speak, from hyperspace, and so there's then in a sense no problem, because our internal experience is not just connected to the hyperspace, it's an intimate piece of the hyperspace, in other words. Our own minds are projections from a much greater mind, and so on.

MISHLOVE: What might be some of the practical consequences of this view? How would it change my life to understand that?

SIRAG: Well, I mean, there might be ethical kinds of considerations. Like if I'm projected from a greater mind and so are you, and we're together in superspace --

MISHLOVE: These bodies may be like little puppets with the same pupper master, or something.

SIRAG: Yes. And of course people that have psychic experiences claim to experience this sort of thing directly -- a kind of mental link with another person. Of course in the dream realm possibly we also experience a different kind of oneness than we ordinarily experience.

MISHLOVE: And what you might be suggesting, then, is that this dream realm is part of this mathematical notion of hyperspace.

SIRAG: Well, the dream realm is definitely a mental realm, I would say.

MISHLOVE: It might even follow laws that you could outline.

SIRAG: Yes, definitely. See, physicists have never taken the dream world -- or worlds, there are many probably -- seriously. I mean, it's a state that's very much like a physical state, because to a certain extent things make sense in a dream world and to a certain extent they don't make sense. But suppose in the dream realm one were to do physics experiments, one would come up with a different physics, so to speak. So that would be a different projection, so to speak. It would be a different space-time projection, very different, as we experience it, because in the dream realm, for instance, your identity can change very quickly. Like I could have a dream in which you appear and suddenly I'm you and you're me, or somebody else; and that can change very quickly. Now, we don't experience reality that way, but that doesn't mean that that realm isn't real.

MISHLOVE: There are some cases in the literature of parapsychology like this. And we have multiple personalities, even now.

SIRAG: Yes, yes. So this sort of thing makes more sense if reality is truly a hyperspace and there are all sorts of projections going on. And perhaps even things like reincarnation could be reinterpreted in such a model, with suitable changes from more naive notions of it.

MISHLOVE: As I understand your theory, Saul-Paul, to jump a little bit here, the entire physical universe as we experience it is in some sense predicated upon the mathematics of the fine structure constant in physics, the number 137 -- that everything else sort of emerges from that. And other levels of hyperspace, other universes in a sense, parallel universes, or other dimensions, might be predicated on other mathematical constants the same way. Is that basically correct?

SIRAGE: Yes. We're very impressed by certain constants in physics that play a very fundamental role. Earlier when I was mentioning the unification of the forces, I could have said in that statement about unification of the forces, that what this means is that all the forces have the same strength at some hyperspace level. And the fine structure constant is a measure of the strength of the electrical force, and essentially our idea is that all the forces have that same strength, a unification strength, at the unification level, the hyperspace level. Now, if that strength were ever so slightly different, say one percent different, then a world totally different from ours, causally

different from ours, would occur. Now this may be precisely what dream worlds are like; they're simply a kind of physics with a different fine structure constant.

MISHLOVE: So using the mathematics that you've developed here, you could predict what other realities ought to look like, at least how the physical laws would operate.

SIRAG: Well, in principle one could try to do that, but we're talking about a very long-term program here. We're really talking about what physics is going to look like in the twenty-first century. You see, Maxwell's equations were written down in the nineteenth century, actually early in 1865, and yet all of these marvelous electrical phenomena that are our high technology today really grew out of one set of equations. And so the twentieth century has mainly been, technologically speaking, the exploration of that beautiful unification of forces.

MISHLOVE: That took place over a hundred years ago.

SIRAG: Yes. Now, what I'm saying is that in the next century probably a vastly different technology, a much more detailed technology than electromagnetism technology even is, will evolve, and consciousness will be very, very intimately involved with those technological developments, I believe, due to the unification of all the forces, such as we know them today. And it will be a very, very exciting thing. In other words, I'm not saying physics is coming to any kind of end by this unification. It's more like a true beginning, in a sense, and a true beginning to a new technology, even.

MISHLOVE: What are some of the things you would envision?

SIRAG: Well, I can guess some things, but let me remind you that one of the last things in the world that Maxwell would have predicted would have been television coming out of his equations. You see, from Maxwell's equations one found out that besides visible light there had to be invisible light. But how vast that invisible light was nobody really knew, and then radio waves were discovered as one kind and X-rays as another kind, for instance, and Maxwell didn't predict any of these things specifically. So it's very hard to predict, if you're just a physicist writing down a few equations. But the main thing that I've already predicted is that we would have -- well, what I've said earlier is that from the hyperspace we project space-time. So I think that what we might be learning how to do technologically is to actually work in the hyperspace realm. In other words, we're living in a 3-D movie now, OK? So what we're going to learn is how to make our own movies, so to speak, rather than just acting in somebody else's movie. We're going to play a higher role in the production of the movies that we then act in. So basically that's just a way of saying that we're going to play the whole game more consciously.

MISHLOVE: It sounds like what you're saying is we will become like gods, or like we imagine gods to be today. This notion of creating life through genetic engineering is hardly a drop in the bucket compared to what might be possible if we were to master the technology of hyperspace.

SIRAGE: Of course this will just be a minute step up into the hyperspace, and there will be many dimensions beyond us, and we would perhaps talk about godlike beings beyond us then, who are higher in the hierarchy of consciousness, and so on. And a whole new vocabulary would evolve that would be very much more precise. The thing is that the mathematics for thinking about this is already developed, as far as I'm concerned. Mathematicians are way ahead of this in the sense that they don't have to test their things by experiments. The only test of a mathematicaltheorem is a logical proof, and so it goes very, very fast. New ideas in mathematics go very fast. And fiber bundle theory started to be worked out in the thirties, and developed very rapidly in the fifties, and we're only now really beginning to apply it in a big way in physics. So the mathematicians are there ahead of us; we get our cues from the mathematicians, I believe, those of us that do new things.

MISHLOVE: Well, it's interesting. When I was a child I was told that there were going to be twelve people on the planet who really understood Einstein, because it takes a while for new, brilliant ideas to filter down to the masses of society. Now I suspect there are more than twelve people who do understand Einstein. And you're talking about what seem to be the leading-edge theories. I wouldn't be surprised if there may be only twelve people on the planet today who understand your work.

SIRAG: Well, that's not really true. What I have found, so far as understanding goes, is that the mathematicians I talk to generally understand it very well, especially if they know an area of mathematics called group theory, and if they know fiber bundle theory then they really understand it. Of course both of these are very, very big areas in mathematics. And physicists generally find it more difficult to follow. For instance, I presented this theory to a special colloquium session at Georgetown University, of the physics department and the math department, and the physicists by and large were just out of it, so far as understanding it. The mathematicians followed very well.

MISHLOVE: But it's the physicists who you're trying to address, and ultimately I should imagine a larger --

SIRAG: Of course, of course. But I understand very well why the mathematicians can follow it.

MISHLOVE: But if physicists are now having a hard time following your work, it may take, as you say, a hundred years before it will really affect the masses of people.

SIRAG: Well, no, no, no, not a hundred years. Things move a little bit faster than they did in Maxwell's days, and technology moves much faster now than it used to also. The hyperspace idea will appeal definitely to the younger generation of physicists, and they will get into it right away, I think. And they are; they get into this superstring theory and stuff right away and right now.

MISHLOVE: Well, Saul-Paul, sometimes I have the feeling listening to you -- and I could be wrong, of course -- that I'm in the presence of a future Einstein. And if your theories are what you claim that they are, and if they become recognized at that level, it would seem to me undoubtedly you would be eligible for a Nobel Prize, or the highest kind of award that they would give to physicists. So I feel like it's

been an honor for me to have you on the program, and I think our listeners, our viewers, would feel the same way. Thank you very much for being with us tonight.

SIRAG: Thank you. It was fun.

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