

Editor: As a physicist, interested in quantum physics and an author, why are you interested in lucid dreams?

Wolf: The main reason is because I have lucid dreams. Because I have lucid dreams, I'm naturally interested in their significance. It appears to me as a scientist, that a lucid dream is a new kind of human experience. One that needs to be explored as part of legitimate scientific inquiry. It's not a quirk or a weird thing. It seems to have certain

objective qualities which make it something that can be studied.

Editor: What do you mean it has objective qualities?

Wolf: Objective qualities are qualities a lucid dream would have that are common with what other people would say they have when dreaming lucidly. However, from my own experience and reading about what other people have said about them, the main quality is the ability to be awake when one knows one is dreaming. That is a very strange state of affairs to be in because it's a paradox. One shouldn't be awake and dreaming at the same time. So I take it that in a lucid dream one is not really asleep in the sense of our common overall accepted term for the word sleep, but rather is "really" in an awakened state. It's an altered state of awareness. It's a conscious state that the mind is in. So if it's a conscious state, the question is what is it conscious of? What is the object of this consciousness? What is really being viewed? That's where a physicist, like myself, gets more interested. I don't look at a lucid dream, or any dream in general, but a lucid dream in particular, and consider it subjective any more. When the observer and the observed can separate and say this is the observed and this is the observer, which is an effect one seems to be having when lucid, then I think it's questionable whether it should be considered subjective.

Editor: Along those lines let me share with you something that happened to me the other night. I've been having lucid dreams monthly for years, analyzing them in considerable detail. This experience I'm about to tell you is a phenomena that is happening more and more when I become lucid. When I become the observer, that is, the awareness is there while asleep, I lose what's observed. I'm having a very difficult time maintaining the "sensory" dream experience, although the consciousness remain. Whether my approach is the lucid dream is active or passive, I can't maintain the dream. It's not like I wake up. What happens is I'll get nebulous content such as grey clouds. I'm losing content not consciousness. It seems to be that this may represent a developmental process in lucidity experiences.

Wolf: As you become more strongly aware of yourself in the dream, the world that your dreaming begins to grey out on you.

Editor: Yes. Even if I'm trying to create something or make something happen on the one hand or saying to myself, "Okay, I'm going to be completely passive and I'm going to just let this dream happen," on the other hand. The content disappears.

Wolf: Then what happens.

Editor: The disappearance is distinct and is followed by a visual representation of it, grey clouding. After a bit of a let down in the dream, I wake up. What I'm trying to get at is the experience of the observer. These current lucid dreams of mine may be something

idiosyncratic, but they were preceded by years of very, very heavy observer action and interaction with the dream. Why don't you tell me about your lucid dream. It's one of the most remarkable, of the one's I've heard.

Wolf: This dream occurred when I was living in England. I had a visiting professorship at the University of Paris and I was an honorary research fellow at the University of London. I had just begun my inquiry into questions that bordered on metaphysics. Questions like this sort of thing we're talking about and it happened during an evening I had been out late and had gone to bed and was in a rather agitated state. I couldn't sleep right away. I got up because I was thinking about something having to do with physics. In fact, I would say my mind was totally occupied by equations and relationships and things that had grabbed my interest during the several months of research that I was doing when I was in England. I went to the dining room table and worked on these equations for a while and then I went back to sleep.

The person I was living with at the time was my partner and lover. She and I have always had a very special connection, a bond of a certain kind. It's very hard to describe, it's something that when we're in the presence of each other, we have this sort of awareness. Well, she was sleeping next to me at the time; and this may be the reason the dream was so powerful because of her presence.

I started following through what I call stages of deep sleep, and awakening from them, but every time I awakened, I awakened with the knowledge that I hadn't really awakened. It was like I'm awake but I'm not awake.

Editor: False awakenings.

Wolf: I would wake up, sit up in bed and say, "Well, I'm sitting up and I'm looking around, but I know I haven't done this yet." It was like that. Then I would lay down again and I would start to go into a spin. I would definitely feel a spin feeling.

Editor: Was it initiated by you or did it have the sense that it was happening to you?

Wolf: I don't exactly know how to describe it. Let's just say that there was a definite feeling of spinning. A feeling of stopping the spin and I'd be in a different universe. I'd look out and I'd see something that would be that way, I'd come back again and I'd spin again. It's like I would be waking up in different places.

Editor: How lovely.

Wolf: So that went on for a period of time until finally it stopped and I found myself in this room. The first thing I noticed about the room was that it was a fairly big and really wide circular room, and the walls were vertical but in a semicircle like a stove top hat. Additionally, the walls had a different texture. One of the things I noticed in my lucid dreaming states is that I'm aware of texture: very, very much aware of texture. It's like

when I touch something and I know that this is leather and that's wood.

Editor: It's a tactile awareness, not just a visual one?

Wolf: Tactile awareness, as with my fingers. I was touching the wall, and I could feel the weave of it, it had kind of a basket weave feeling to it, or a carpet weave, I'm not sure. Then I noticed I was rising and floating off the floor from the dream.

Editor: Were you aware you were dreaming?

Wolf: Oh, yes. I was aware all the way.

Editor: Through all your spinning there was this, "Hey, what's happening? I'm asleep."

Wolf: Yes, I knew definitely I was dreaming. I never have any problem knowing I'm in that state. So, when I felt myself rising off the ground, I got very scared and began to feel myself coming down. It was at that moment that I realized that my emotional state had something to do with my physical state in the dream. If I relaxed and took a deep breath, I'd start to float again. As soon as I felt myself getting worried, I'd start to come down.

Editor: No kidding.

Wolf: So, I was literally going up and down. It was a metaphor of something to do with splitting our physiology and our psychology. I was beginning to experiment and float off the ground again when I had turned around in the room and noticed that there was another being present in the room with me. He took me by surprise.

I said, "Oh, excuse me, I'm new here." or something like that. I felt embarrassed floating off the ground while this guy is walking in the room. He said that he knew. He said that he's the caretaker and if I'd come down, he'd show me around. So I somehow came down. I don't remember how I came down but somehow I managed to come down and the next thing I knew I was walking with him out through the doorway in the room.

Editor: What was your impression of him physically?



Wolf: It was very vague. He seemed to be in a robe and grey haired. That's all I know. His name was John. That's about all I can remember about him. He took me out into this place which looked like a rolling green hilled cemetery. That was the impression I had of it. Although there were no graves or gravestones anywhere. It was a beautiful sunshiny day with a blue sky. We were walking on a very green carpeted, velvety grass. It felt really wonderful. It was a nice, warming experience. He took me to a group of people that were all seated in a circle on a wall which was approximately 3 feet off of the ground. They were seated around the wall in a circular group. I entered the circle and was just standing there when John said something and then seemed to disappear or leave. The next thing I knew, I was in this group, and I began thinking to myself, "What am I doing here?" These people were more or less ignoring me. Some people were talking to each other but most were staring off into space.

Editor: Throughout all of this you knew you were dreaming?

Wolf: Always.

Editor: Did you have any sense of having to balance that awareness with your dream activity?

Wolf: How do you mean? I don't know what you mean by balance?

Editor: I found that if I don't continually remind myself of the true nature of the dream as that of dream that I lose the awareness. You didn't have any of that.

Wolf: There was no effort to keep dreaming.

Editor: No, not to keep dreaming, that's easy. To keep the knowledge, the awareness of the true nature of the state.

Wolf: I wasn't thinking about it. I was just simply going through the experience of what was happening to me. I was living the experience as much as I was this experience. I don't know what's going to happen next right now.



Editor: Throughout, you knew it was a dream.

Wolf: Yes. I mean I knew it was a dream, but at the same time I wasn't thinking, "Oh, I know this is a dream. I know this is a dream. I know this is a dream." I wasn't constantly reminding myself this was a dream.

Editor: But you still had the sense that you knew it?

Wolf: I don't know what you mean by that. If you say to me, do I know I'm awake at this moment, I would say, "Of course, I'm awake at this moment."

Editor: But you're not always saying it.

Wolf: Am I always telling myself, "Am I awake? Am I awake? Am I awake?" No, of course I'm not.

Editor: Okay, let me explain it with a personal experience. When I know I'm dreaming, I remind myself I know I'm dreaming and I continue to do so. If at some point I lose that

awareness and I don't remind myself: I don't say, I'm awake or I'm dreaming or whatever, then the dream continues. I wake up later and think, "Ah, gee, I lost it!" My recollection of the part where I knew I was dreaming will be very distinct from the part where I didn't know I was dreaming. I know that I got caught up in the activities and I lost the awareness. Although, there are people who talk about the continuity of the awareness without, like you say, the reminding. What that literally means, say psychophysically, I don't know. That's one of the things that my colleagues at Maharishi International University talk about, the continuity of consciousness. In any case, please go on.

Wolf: I honestly hadn't thought that was a problem. It didn't occur to me, but I do remember carrying on a kind of conversation with myself, "Well, where am I? What am I doing here." Then I began to look at people's faces and that's when I began to experience a general awareness of where I was. When I looked at a person's face, I could see through the skin and I could see the musculature. I could see the stress and strain lines. I also could begin to see terrible pain in these people's faces. It was then that I suddenly had a flash of where I was. I was actually in my dream thinking thoughts that weren't being verbalized. I don't know if you've ever done that before. You know you're sitting here right now and you'll think a thought and you won't say it to yourself. You know what you thought, but you won't say it in words. You don't insert words in your thought.



Editor: I'd say I'm having impressions. I'm having feelings. I'm having visual images. That is how I would label non-verbalized thought.

Wolf: It's an intuitive clash of insight which you can later verbalize. But at the moment you know something that later on you'll write down in words.

Editor: Okay, okay. Yes, I've had that, it's a knowing. It's a knowing that doesn't have to be labeled. It can just be.

Wolf: Yes, it can be. I knew who those people were, where I was, and why they looked the way they did. I went to the "Ah, ha" experience. At that moment I said to myself, "I know what's going on here. I know where I'm at." At that same moment, a woman sitting on the wall opposite me seemed to take notice of me. She stood up and said, "Oh, you do, huh? Well, where are you?" I began to say something but I noticed she was approaching me and that kind of got me worried. I said, "Not only do I know where I'm at but I can leave this place any moment I want to, and go back to where I've come from." Like I'm visiting here, I'm not here permanently.

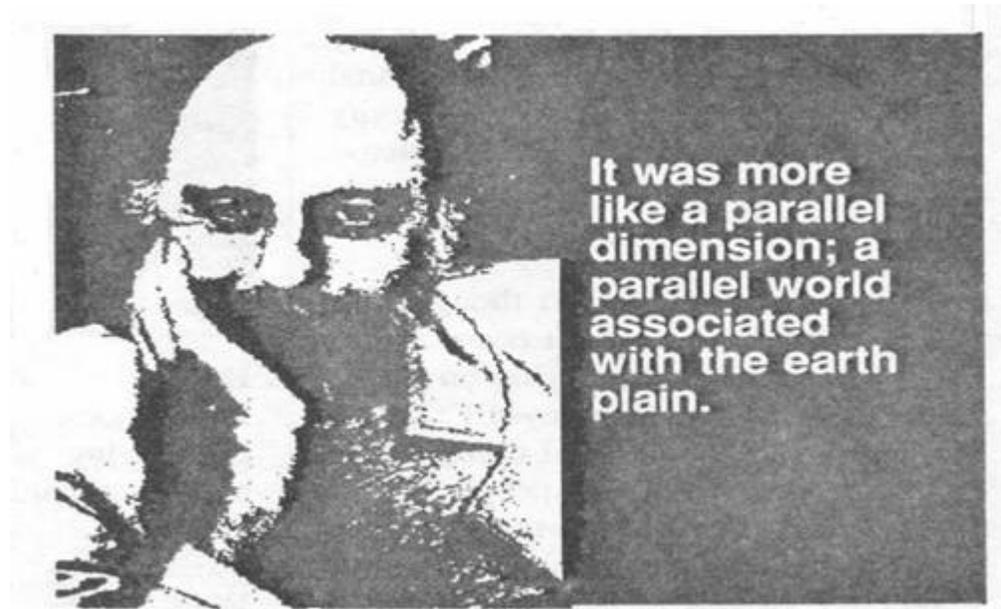
Editor: I've read about this dream so I know it's considerably longer but what conclusion do you draw from it?

Wolf: I was aware when I awakened that what I had done was visited a level that has been written about for centuries in the metaphysical and occult literature called an astral level.

Editor: That's how you perceived it? Really?

Wolf: Definitely. Not only that, but I perceived that the people I was talking with were people who had committed suicide and that was the reason for all the pain in their faces. I also perceived what they were doing there. I definitely had the feeling this was a level that was connected close to the earth. It was definitely an earth plain but not like another dimension. It was more like a parallel dimension; a parallel world associated with the earth plain. It's where suicides go when they commit suicide, because a suicide is an unwillingness to complete what you're originally scheduled for. It's sort of like quitting a job. When you quit a job, you are no longer attached to it. It indicates that you have made a decision to back off of a contract or commitment that you made with yourself. You have to review what it is you did, why you did it and why you are back here again. You also have to review something else, which may not be as palatable to accept, but something which I believe is very true. Suicides usually don't reincarnate alone. In other words, when a reincarnation experience takes and the person is going back into bodily form again, it's not just one soul for one body. There may be something like 10 or 20 or maybe as many as a thousand different entities which form a soul entity for that lifetime. These different soul forms have to work together to get a certain job done. It's an integration process. These suicides have to wait until they're acceptable to

the rest of the integration complex in order to be brought back together again; to allow themselves the integration experience. In other words, the other souls are saying, "Well, I'm not so sure we want to have this guy in here."



Editor: That's a nice characterization of the waking experience of an attempted suicide as well.

Wolf: So that's why they're in a waiting pattern.

Editor: Okay, so this was a suicide state, what do you draw from that? How is physics implicated in all of this?

Wolf: Well, I don't really know how to answer that as it takes some steps to go from what I perceive to what I can theorize about.

Editor: One of the things you once mentioned to me when we were talking about lucid dreams was that perhaps a lucid dream represents a parallel universe.

Wolf: The parallel world theory is a new theory in quantum physics and it's just now beginning to take on practical application because people are using the ideas from parallel world theory to come up with designs for new kinds of automatons used in computer elements. If the parallel world hypothesis is correct, it would be possible to do certain kinds of computations that are so quick that they will leave the present computers way behind in terms of speed. There will be certain kinds of predictions that could be made, like weather predictions and things of that sort. They'll be far more practical than we have right now. So there's a great deal of hope and expectation that we might be able to do things with parallel world computers, quantum automaton, that can't be done in the

real world that exists today. So we're on the verge of something very exciting.

This is all being taken very seriously. It's not a fluke. What it says is that there exists more than one universe. These universes are continually multiplying, or if you will dividing and recombining according to the actions that are taking place.

Editor: Within the universe?

Wolf: Within the universes. One might imagine that there's a certain number of them all stacked together, kind of like parallel plates or books that are all super imposed on each other, and each book is a slightly different version of the other one. But it's more dynamic than that static example.

Let me just describe a typical parallel world sequence. It's one in which an observer observes a particular state of a system. We're talking about quantum systems right now. Quantum systems have distinctive states that are well separated from each other. They have what's called a discrete spectrum of states. Whenever an observation of something discrete occurs, then the observing instrument or the memory of the observer of that state is altered or changed to accommodate the data of the discrete observation.

Let's say, for example, that we are looking at a quantum coin, that has heads and tails. It's an atomic size coin. This quantum coin exists without a distinctive side showing, we say in quantum physics that it has both sides present simultaneously. When an observation occurs, one says he sees either heads or tails. In the parallel world theory, we now say that the observer is also in one of these mixed states. So that one observer sees tails while one sees heads but it's the same observer. Now this observer could be one person and the coin being observed might be a neural firing pattern in the brain and the rest of the world won't be splitting at all it's just this neural firing pattern might be splitting and the person would then have a kind of an indecisive moment of whether to take action or not to take action. Or it could be a dream state which is occurring simultaneous with an awareness of dreaming, such as in a lucid dream. These might be examples of how the brain is working in this parallel world mode. It may have always worked that way, but we just didn't have the language to describe it before. This is where I think there is a connection.

One of the latest ideas in quantum physics is in a series of papers from a group of physicists from Israel and from the University of South Carolina. It is the notion that it's possible to build a computer memory element that will record a quantum state of a system, a physical system. A quantum state could be one of two possibilities and as a result it's memory would record, say heads or tails, assuming it's a quantum coin. It could also record that state which comes about by adding together the heads and tails state which could be something different than heads or tails alone. So by doing this it has a record both of what state it observed when it first looked at a system and it has a record of observing it's own self when the two states combine together. So it has two records. A record of what it's observing and a record of it's observing of itself. It's in the self observation that it can tie together the possibility of this state of a physical system that it had observed and the possibility of the existence of this other measurement that

could have been made because it would interfere and effect it's memory.

Editor: It sounds like you're talking about a lucid dream.

Wolf: That's just like a lucid dream.

Editor: Yes, where your observer is observing himself and in the observation process impact what's occurring.

Wolf: That's right. That's exactly right. This has now become what I think is a very important issue in this new physics viewpoint. The only theory which seems to make sense of this kind of an effect of a system observing an outside system and observing itself at the same time is parallel world theory, because the kind of measurement it makes of itself is very distinct from the kind of measurement it makes of physical systems outside of itself. In quantum physics, anytime you observe systems outside of themselves, anytime a measuring instrument observes something outside of itself, it's governed by the uncertainty principle. But when it undergoes a self observation as well as observing outside of itself the rules of this uncertainty principle don't have the same force so it's possible for a system which is observing itself to observe both what it observed when it observed the physical system and observe the effect of what it would have observed if it had observed the other state of the physical system as well as what it observed. So it can see the effect of the addition of those two states together.

This is a very funny business, but it's the kind of thing which exists in quantum mechanics all the time. We're constantly dealing with what is called complimentary variables; the notion that, for example, if you measure say the spin of a particle, it's possible to measure its spin up or spin down with respect to a certain direction in space. Well, it's also true that you can measure spin up or spin down with respect to a direction perpendicular to the direction in which you measure. But in quantum mechanics, the mathematics which describes that say the following. Let's say that x is one direction and z is a direction perpendicular to it, if I measure, say, spin up in a z direction then it's possible to show that that is equal to the super position of the possibility of measuring spin up and spin down in the x direction. In other words, a spin up in one direction is a combination of opposite spins in another perpendicular direction. So if you have an observing system, like the system we're talking about, and it measures the spin of a particle to be in the up z direction, in a parallel world it's other version of itself would measure the spin of the particle in the opposite direction, in the down z direction. Now, suppose that the system takes a measurement of itself and what it just measured and sees the interference between those two states. In other words, when it measures itself, it measures say a spin in the x direction, which is a combination of the up and down z, then it would say to itself, "Ah, look I've just measured z as up, but I've proven that I've also measured z down. Even though I'm not aware in the z up state that I've measured z down, I know it has to exist.



So, if you compare that to a lucid dream state, here you are dreaming and you're having a lucid dream, you're definitely in a z up state, but you're aware that the z down state exists. You're aware of the other level, even though it is not entering into the level you're in.

Editor: That's similar to the idea of the continuation of consciousness, even though there may not be a verbal manifestation of it. Can we take that a step further? The parallel universe theory may act as a physical model for the lucid experience. How then, within the physical model, or perhaps metaphor, does this process of observation or awareness impact what is observed? That is, the physical reality of what is observed. Can it?

Wolf: Yes, it can. The problem we have right now is that the theory is so undefined that it can do anything. We don't have enough limits to know what it can't do. There are a number of possible directions of research that one could take to find metaphorical models for how the observer impacts the dream state, for example.

Editor: I was thinking more of how the observer might impact the body in the dream. As in healing the body.

Wolf: Yes, well again, I don't see any reason why it can't. There's nothing I see against that. If one is dreaming of a well body and has measured that state in a lucid dream and one is in a sick body, it seems that there will be an interference between those two states which should have some benefit. The body won't be either well or sick, but it certainly won't be only sick or as sick either.

Editor: So the observer is observing an experience in a lucid dream of the body, and saying, "Okay, now I'm going to effect the immunological system. I'm going to decrease the incidence of killer cells." So the observer is saying that about this imaginary

body. Do you think that, from the perspective of quantum physics and parallel worlds such a "real body" effect is possible?

Wolf: I can imagine it, but I don't see how right now. I don't have a model for it at this moment. As I said, the problem at this point is not so much, can the model explain this: the model, right now is so broad it can explain too much. What we want to do now is to find its limits. The parallel world model, right now, is still very, very new. These kinds of observations I'm talking about, where you're aware of one state in a present moment, and aware of another state in a future moment, with the future moment having an impact on present moment is brand new stuff. It also has to do with this whole idea of parallel worlds, and self observation, and we're just beginning to get our hands on what that can mean and what its application can be.

Editor: Let's pursue the idea of the future impacting the present. Then a precognitive dream might simply be a receipt of the future.

Wolf: The parallel world hypothesis also allows one to deal in an objective way with the effects of future observations on the present. That's another aspect of this game. There are two basic aspects of it. One is the automaton observing a system and observing itself observing a system, which produces distinctive results. Then there's the so called two time effects, where the state of a system between two measurements has unique properties which it wouldn't have if the final measurement had been carried out. In other words, it's like the future affecting what's happening between two measurements. We're for practical applications of that kind of a thing where certain systems are measured initially and then finally and then something weird happens in between. If we're clever, we can carry out very funny kinds of measurements in between, which shows the effect of the future propagating back into those measurements. You have to be clever to do it.

Editor: To say the least.

Wolf: But there are ways to do it. However, you can always argue from the old theory that says, well, it really wasn't the future propagating back into the present, it was the continuation of the present, because the concept of time as linear is such a prevailing argument.