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MENTAL MODELS IN SLEEP: WHY DO WE FEEL MORE CONSCIOUS IN LUCID DREAMS?

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Why do I seem to be more conscious in a lucid dream? I mean, that's what happens, isn't it? There you are dreaming away, ridiculous and quite unaware that it is a dream and suddenly you seem to be there. It's as though you've woken up in the middle of a dream, only of course the body hasn't. What has changed?

I realize that I can't come to grips with what this question means. To ask, "why am I more conscious in a lucid dream?", begs a whole load of questions about consciousness, about "I", the nature of self, and about what it could possibly mean for something to be more or less conscious. It's a horrible question. Nevertheless I will have a go at answering it.

First, what's interesting about lucid dreams is not their content. We know that the content differs a little bit, but as Jayne Gackenbach has pointed out, lucid dreams are more like ordinary dreams than they are different from them. Second they are not interesting because of when they happen. They occur during REM sleep. So as far as we know you can't pinpoint when one's happening from knowing something about the stage of sleep that the person's in. Third they are not particularly more vivid, not in any very dramatic way that makes you say that is what the difference is. The only thing it seems to me that makes a lucid dream interesting is this peculiar thing that I seem to be more conscious.

Now it may help, (and it may not), that there are other experiences in which you get this same sense of being acutely conscious while not apparently having a normal physical world. These include near death experiences (NDEs) and out-of-body experiences (OBEs). We know a lot about the similarities between OBE's and lucid dreams. The same people have them, they feel very similar and so on. But there is a very interesting difference in the limitations on lucid dreams and on OBEs and NDEs. In them all, you are in a world of the imagination. Out-of-body experiences happen when you are very relaxed, when you are meditating, when you are going to sleep, when you are so exhausted that the system can no longer build up good models of reality, or when for any other reason you are unable to construct a view that says that that table is there and I'm here looking out through the eyes. If you are awake and you have an out-of-body experience, you are in this imaginary world and yet most people having out-of-body experiences think they are still in the ordinary world.

We define the out-of-body experience as an experience in which you seem to perceive the world from a location outside the physical body. And people jump, as Stephen LaBerge said, to the assumption that they are out of the body and looking at the world down there. Now this is the limitation in the OBE, because if only you could say "I know, it isn't real, it's just the world of imagination," then you could go off and do anything, because you are wide awake and you've got all your waking faculties but people rarely do that. By comparison in the lucid dream you are aware that it is a dream. You know that this is not the ordinary world which has all of the limitations of say, "if I bash it it hurts". But the trouble is, you do have the limitations of the fact that the brain being asleep. The brain can only build certain kinds of models while asleep. The near-death experience has features of all of this. When people get very close to death, many seem to go roaring down a tunnel with a bright light at the end: off you go into the tunnel, and into the light, and there may be a being

of light. There you may immediately find yourself out of the body or you may go on to other worlds. In terms of these limitations, again people assume that this world is "real." They are going down a "real" tunnel and going to the afterlife. So they are not only constrained by all the assumptions they are making, but also by the fact that the brain is dying, and therefore it is really in trouble, it's in even worse trouble than when you are asleep.

So we can compare these experiences. We know that they feel somewhat similar, but they are bounded by different conditions and therefore the potential in the experiences is rather different. In all of these I think what makes them interesting is this quality of seeming real, and therefore when I've tried to understand them, I've always tried to be true to that knowledge that it feels absolutely real. Yet I have also to be true to a lot of other things. For example, I cannot make any sense at all of the idea of astral bodies. I just don't think they hold water logically, and all the evidence seems to suggest that when people see things in out-of-body experiences they are seeing them as they appear in imagination not as they are in fact (the emotional cases reported by Michael Sabom for example, stand out as a challenge to the view I'm following).

At the moment I'm trying to understand the tunnel. I think we can understand how the tunnel comes about in terms of the physiology of the visual cortex, because the way the cells are organized is such that there are far more cells representing the center of the visual field and far fewer on the outside. As the brain is dying and there is not enough oxygen there is an increase in random firing of cells. This is greater in the middle and much less towards the outside. In fact it looks like a dark tunnel with a bright light in the centre. This might explain the tunnel form but why does it seem real? Unless we can answer that, we can't begin to answer questions like, "Why am I more conscious in a lucid dream?" I want to tackle that question. I'll keep deviating and coming back to this question, and I hope you'll see why the deviations are relevant in the end.

So what makes this question so difficult? First, as I mentioned is the problem of consciousness. Second is what is meant by "I"? Now this is something that Stephen nicely skirted around in his talk, but I'm not going to. I'm going to face it head on. What on earth is this "I" who is more conscious, and what do I mean by "more conscious?" We have no framework within psychology or in fact within any other field of science to come to grips with any of these but let me have a go at them very briefly and try to reject some views that I think won't work, before I go on to give you a framework of my own which will allow me, to my satisfaction at least, to answer the question.

Let's take consciousness first of all. It is a horrible problem. Why? Because it isn't like anything else. The problem of consciousness is something like this: Here I am. There's the room. I can't say anything more reasonable about consciousness than that there is this awful quality of being here now.

Any theory of consciousness which tries to solve the problem fails if it says something like, "consciousness is a fluid", or "consciousness is a kind of special stuff", or even "consciousness is a level of activation". It may be related to any of those things. But to say that it is any of those things misses the point. Rather, it is what it is like to be here now. Similarly, you may say that consciousness lives in the DNA, or consciousness is enfolded in the structure of the universe but any of these attempts, interesting as many of them are, miss that very point about what it's like being here.

The closest anyone has come for me, at getting at the problem was the philosopher Nagel who asked his famous question, "What is it like to be a bat?" He said you can only say that something is consciousness if there is something it is like to be that thing. And yet if you ask what is it like to be a

bat, there is a problem, because what counts as the bat? You may think this is a niggly question, but it is the sort of question that makes me think there is something wrong here. I mean, do you count the little fingernails on the end of the bat? Do you count the skin of its wings? Do you count the hair stuck to its skin? Where does the bat begin and end? There is something not right. I can't really make sense of the idea that there could be anything it is like to be a bat. Well I'll come back to that.

Now what about me? What am I? I am going to take a step on from what Stephen talked about (and I'm delighted that he has said a lot about mental models and the way perception works by constructing mental models and schema, because I don't have to say anymore about that). I can simply add that I am also a mental model. I mean, what else could I be? I'm not some little homunculus in there looking out through the eyes, am I? That just doesn't fit with what we know about perceptual processing. It doesn't fit with the assumption psychology makes that we are information processing systems building models of the world. Here is a system which builds a model, says this is Sue Blackmore and she's standing up there on the stage and she's so important, my God she's important, and the whole world revolves around her, and there's the world out there, and I'm in here. It's a model that makes me think I'm in there looking out. But it is only a model.

What then could we mean by "more conscious?" Now, it's very easy to attack any kind of a scheme that says things are more conscious when they are bigger, or better, or more. How could there be more consciousness? And yet, if you look at the nature of experience, particularly as you develop experiences as you go along, there certainly is a sense in which some experiences, for want of a better word, seem "higher" than others. I would like to feel that in trying to answer this question I'm in some sense addressing that question too.

Now what I've said so far has been rather negative. So let me have a go at explaining what I think and answering the question.

If there isn't anything it is like to be a bat, I'm going to make an alternative suggestion. I'm going to make one suggestion only, from which everything else follows. And it may be a completely ridiculous suggestion, but you may have some fun as I have had playing about with it. I don't think there can be anything it is like to be a stone, or a book, or a bat, or a computer, or even a human being. I think there can only be something it is like to be a mental model. You can never answer the question, "What is it like to be this bat here?" because you could always argue about where its wings finish and whether its tooth is part of the bat. I don't even know if bats have teeth-- yes they must, they are mammals. But if you took the idea that the bat is an information processing system building models of a bat, I think you could then say what its like to be that model of a bat. Because if that model includes the fingernails, then fine, that's what it's like to be the bat, and if it doesn't include the fingernails, that's fine, that's what it's like to be the bat. It's internally constrained. You can always ask, "What is it like to be a certain mental model?" by looking at the way the system has built it.

Basically I am saying "Consciousness is what it is like being a mental model," and some truly ghastly things follow from that position. After all, here is this amazing information processing system churning out models all over the place. It's not just churning out one model that says there is a load of people out there on red chairs, it's churning out models from the retina--the retina in the back of eye has three layers of cells that are producing representations of the world, so I'm saying they're conscious, am I? Yes, I am. But if you ask what it is like to be the representation constructed by the ganglion cells in the retina, the answer is it's not much. It's fleeting, comes and goes, and doesn't have much stability. It's not very interesting. But what we know about most human systems is that they have this whopping great representation of self, me, here, now, and it's a big model. And I

can ask, "What is it like to be that model?" I suggest that is what it is like to be me, here, now, being this construction of this brain.

We might say the same about computers and robots. My personal PC sitting at home on my desk doesn't need a model of self, so I would suggest that being the models it creates is pretty boring, but a robot in order to pick up this cup, which some robots can do, needs to have a model of its arm and therefore a rudimentary model of self. And I would therefore say that there is something it is like to be that model of that robot picking up that cup. It does away in one go with the whole problem about where consciousness begins and ends. It doesn't begin and end, it is simply a by-product of anything that represents anything else. So you can answer some of the most interesting questions about consciousness. For example it doesn't really evolve, I mean there isn't any sense in which there has been any selection pressure for consciousness because it's just a by-product. If it's just what it's like being the models created. The selection acts on the modeling but not on consciousness itself. It's not there for a purpose, it doesn't have any meaning, it just happens to be the case that as soon as you get complex organisms like this tumbling around in the world building models of themselves that they think are so important they have is this sense of what it is like to be here now. And we just have to get on with it.

Well, what then of the self? We like to think that our self is a conscious thing making decisions and responding. But there are plenty of good reasons for supposing that that's just an illusion. For example you may think you pulled your hand away from that fire because it's burning hot: you've felt the burning heat and moved your hand. In fact, it's very easy to demonstrate that the hand moved, and some time later came the impression of awareness of the hand moving and of the heat. The awareness is in no sense instrumental in the response; it's purely a by-product. But you may say, "Oh well, I initiate my actions, I'm a conscious being going around in the world deciding what to do, aren't I? I'm in charge, I'm the big me." But let me describe the experiment that Libet did. People were asked spontaneously whenever they felt like it to clench their fingers, go like this, whenever they liked. They didn't have to respond to any stimulus or do it to any time, just completely spontaneously. He also measured electrical activity in the brain which can be shown to come before the physical movement readiness potentials. Now he wanted to find out whether the decision to act came first, or the readiness potential came first, because if it's the decision to act that's in charge of the whole thing you'd expect that to happen first, then the readiness potential, then the movement. Now of course it's very difficult to time the moment when you decide to act, but what he did was to have a clock with a quite fast moving hand on it, and the person had to say where that hand was at the moment they decided to act. There has been a lot of argument about that technique. I think I'm happy with this technique at any rate. What he found by this method was the readiness potential comes first, the decision to act comes next, and the action comes last. It looks again as though the conscious awareness of deciding to act is just a by-product. That's not the only interpretation of that experiment, but it's the one which fits nicely with what I'm trying to say, so I'll peddle it. You can read the arguments in the *Behavioral and Brain Sciences* from 1985 if you want to find some alternatives, but I think it's tricky to get around that one. At the very least this demonstrates that if we think we are something very important in charge of things, responding to things consciously, acting consciously, we have to realize that there are very, very severe limitations on that.

So, I would suggest then that we are just models of self and models that seem to be aware of a world. But if it's all a model, and the experience is just what it's like being a model, there is no sense really in which there is a separate me and separate world. It's all just part of the construction, and whatever the brain constructs, that's what we have to put up with being. Now, what this leads me to is the very

obvious point that if consciousness is what it's like being a mental model, then the way to understand altered states of consciousness is by asking, "What are the models constructed in different states of consciousness?" And then we can begin to make some progress with our question.

Let's look at the out-of-body experience first. Why should somebody suddenly construct a model of themselves as though from on the ceiling? I think actually once you ask the question in that way, the answer becomes fairly obvious. I can think of two reasons. Firstly, I think the brain has to make some decisions about which of its models constitute the model of reality, the model of the external world, and it's reasonable for the brain to make the assumption that there is only one. And I suggest for the sake of argument that it chooses the most stable model in the system and calls that the external world. I think that's a heuristic that would work quite well. So the brain says, o.k., those chairs stay there. They don't go away, they behave like chairs. If one falls over, I see the foot that kicked it as well. That is the external world, and all this other stuff going on in here I'll call imagination. But what happens when you haven't got a stable input-driven model, when you haven't got enough sensory input coming in consistently? I think the system will hunt around for a model that's good enough. And where is it going to look? How is it going to find a new model when it's only got memory and imagination to go on? And we know something quite interesting about memory, that memories are often constructed in bird's eye views. Try a little exercise yourself. Try and remember when you were looking for this building. Now try and remember this, you were walking on the street, looking for the building. O.K.? Now are you seeing that from eye level or are you seeing it from above? According to this idea you who saw it from above should be the people who are more likely to have OBE's, because you habitually use those kinds of representations.

An alternative reason why you might have an out-of-body experience is because facing up to the impact of what's coming in on the input is too terrible. And I think when people are falling off cliffs, or the lorry is about to hit them, they just cannot take it, and will therefore shift to a view in which it's not so horrific. It doesn't really matter why the system does it. All I suggest is that the system switches to a simplified bird's eye view when it can't, for whatever reason, construct the eye level view. And the eye level view is tricky to construct. I mean, shut your eyes and try to construct this table in proper perspective. Any of you who are artists will probably be able to do it, but it's not that easy. In my art classes I am constantly being told off for not getting the ellipses right. It’s not that easy. It's much easier for the brain to do it from up there where they are circles.

To summarize, I am saying that if the system has lost input control, it's going to try to get back to a stable model of reality. And a bird's eye view may be the only one it's got. If that's the most stable, I think it will be treated as real, and that's why it seems real. It's just as real as anything ever is real, because it's the best model the system has got, and there isn't anything else.

So what about sleep? What I'm trying to do now is to ask, "What are the mental models constructed in altered states of consciousness?" Let's look at what happens as you go to sleep. As the system starts to go to sleep, processing capacity drops. Input is suppressed. It is not possible any longer for the system to build the sort of model of reality we're used to, with a self and an external world. Now if I'm right, and what it's doing all the time is saying, "Well the most stable model I've got is real," you may have this stage that all the models are dropping down, lots of them sort of simmering down, as it were, when any might momentarily be above the others in stability. And I think that is what you get in very vivid hypnagogic imagery, when suddenly something can seem real, and then it is gone. Once the models have all settled down you go into deep sleep, with very little processing. We can ask what is it like to be those models? Hardly any models at all is not like anything much. There may

be rudimentary thoughts churning away, of the sort we have already heard about, schema just ticking over, not much activation, but nothing much else. Now then, what happens as you get towards REM? The whole system is activated, but paralyzed, suppression of reflexes, suppression of input, but there is a large processing capacity. The capacity to build models of the world. Now what are those models going to be? I'm very grateful to Stephen who has done a good job of saying what sort of models those will be as you come into dreams. But, you have not got good access to memory. It is not easy for the system to dredge up a model that says, My name is Sue Blackmore, it's Thursday night, I went to bed at 2:00 in the morning, and here I am asleep." There isn't enough access to memory, there isn't the capacity to build that kind of a model. So what kind of a model is built? If it has a self at all, it's an extremely rudimentary self that doesn't remember much, can't do much, can't take many decision, or partake in many complex things. Everything is confusing. But what then, if arousal gets higher? And one of the greatest, most important discoveries I think in the lucid dreaming work is that lucid dreams occur in times of higher arousal, because this implies they're occurring when there is more processing capacity and better models being built.

I think what happens then is that a model of self is constructed which is similar enough to the waking model for me to suddenly think, "Here I am, folks! This is me!" Of course there isn't a me saying that, I mean this is just a part of the model, but if you ask what is it like to be that model, what it's like is pretty similar to what it's like to be me in the day. Whereas if you ask what it's like to be that model in an ordinary dream, it's not very similar at all. No wonder we can't remember it very easily.

So I think now we can answer my question. The reason I feel more conscious in my lucid dreams is because I, the mental model, have been constructed by the brain in such a way as to be more similar to my waking self. So I, the model, feel more conscious. And it's all just a by-product of all that processing going on.

Well, what next? It's tempting when you have lucid dreams think, "Wow, it's a lucid dream, now I can do anything--what shall I do, shall I fly?" I think, for myself, there is only one answer. What I want to do when I think I can do anything, and that's to meditate, to take no part, but that's another story.

Questions and Answers

Stephen LaBerge: Could you say more about that 'other story'?

Blackmore: The other story? I don't know which other story. I'll just pick one. Another story would be if you want to understand any state that you can be in, you have to start by saying, "What are the mental model's constructed?" And if you take meditation as an example, what are the mental models constructed in meditation? They all depend on the technique that you use. But a lot of them are towards simplification. If you use a technique which is always letting go of thoughts, you sit there, you have this impression that there is a self letting go of the thoughts. Now on the view that I have expressed, there really isn't any self looking at the thoughts. But I think it's a necessary stage that you have to go through; to convince yourself to believe that or you're never going to get anywhere with persuading the system (which after all isn't you) to do the hard work which is very unpleasant for you. You've got to trick it. And the only way you're going to trick it is by taking on board the idea that there is a higher self or something, which I think is just an illusion, but you've got to take that on and say, "O.K., I will let go of every thought that comes up," and for a long, long while there is you and there are the thoughts coming up. And you can see that in terms of the mental model being

constructed by the system. It's still constructing a self, it's still got the thoughts that come up. But after awhile, with a lot of practice, the models change, and I think it's quite possible--this is telling the story in sort of three leaps from beginning to end--that the system can stop building a model of self. And once the system has even a few times got into a state of not constructing a model of self, it's like you were saying about lucid dreaming. You said, I think, if I understood you correctly, you now have available a new schema which says this is a lucid dream. I think it's a lot harder for the system to have available the schema that says there is no self. That's a really tricky one. Nevertheless it does arise. And having arisen the system is somewhat different.

I think this is (to tell a completely different story) why near-death experiences transform people in the way they do. By the brain's very dying process, by the fact that it can no longer build a model of self, it's gone that far, and got dragged back, but it has been just once to a selfless state. That is enough to change the person who's reconstructed afterwards. He, the model, is somewhat different. Is that enough of a story?

Morton Schatzman: This is the first time I ever heard anyone talk about the bird's eye view in memory. I once asked a number of people to recall their earliest memories, and found that everyone's earliest memory is always remembered from a bird's eye view.

Blackmore: Really?

Schatzman: They saw themselves in the schema, but from outside the schema.

Blackmore: That's very interesting. Have you got data on that?

Schatzman: It is just from few people, anecdotally.

Blackmore: I'll go and try it myself. That could be because some people's first memories are not in fact memories, they are things they have been told, and we often construct things from stories we are told in bird's eye view. It doesn't matter which it is for the purpose of what I am talking about. The bird's eye views are easier to construct in some respects, but that's very interesting. Thank you for that. I'll go and ask a few people.

Question: I'm interested to know how you can deal with cases where a person was having an OBE and could see things which they couldn't possibly have seen from where they were or could recall things that happened when they were unconscious.

Blackmore: I would divide them into two categories. There are the sort where what the surgeon said and the events going on in the room, can be constructed from auditory information. I think what's happening is that you may be more or less unconscious, unresponsive, apparently unconscious, but you still have auditory input getting in. You can still hear what the people are saying, and you can easily re-construct auditory input as though from a bird's eye view. I mean, you hear what the surgeon is saying and then imagine them. Also sound is not as directional as vision. If you open your eyes in an out-of-body experience you usually come straight back. I have in fact had ones where you get the dual view and it's very confusing. But on the whole if you open your eyes you're straight back. But it is not the same with hearing. Our directional sense in hearing isn't that good. So I think it's quite plausible that we can be constructing a view from up there and incorporating into it what we hear.

Now there are a few cases which cannot be explained that way, and I've discussed these with Ken Ring and Ray Moody and people like this who are working on it. There are very, very few. There was

the famous case of the tennis shoe on the hospital ledge which the patient allegedly saw. She went out of her body and went outside the building and then someone later checked and the tennis shoe was there. This has gone through so many versions that I'm not really sure, and various people have tried to go back to the original. Really, I don't know, it might or might not be so. More important probably is Sabom's evidence on people looking at visual details that they couldn't have known, for example, the exact shape of the paddles which were used to resuscitate them, or the behavior of needles on the dial. I'm suspicious about this business about the behavior of needles on the dial. I'm suspicious about this business about the behavior of needles on the dial only because medical records don't say, "The dial went up and then twiddled around and then went back." They give a general description. So when they say, "It was exactly what happened," I would need more detail on that. But those are the sort of things which if they turn out to be right, and if they're repeatable, then I'm wrong.

A problem in finding out is that there is no money. You can't get grants to do this research. I'm sort of struggling along with no grant, as usual, trying to do bits and pieces. If there were a whole load of people doing research on near-death-experiences we'd find out soon enough, but I guess it might take us ten years, or twenty years, but we'll find out. I mean either they'll be replicable or they won't. If they come thick and fast in the end, then I'll have to rethink it.

Jayne Gackenbach: Susan, I'd like to take you back to our earlier discussion on meditation. If you're in meditation and the task is to reduce the model, to simpler and simpler forms, and then eventually the model that is built is a model of no self, then essentially you've still got a model. That's not the end. From what I understand about these systems there are other stages in the sequence that go beyond no self. There is an apparent developmental sequence. What drives that sequence? Why that sequence? I mean what you're talking about in sleep is your internal needs as Stephen pointed out in waking the sensory bombardment is driving the system. What's driving non-self?

Blackmore: First of all, I wouldn't say that there is a model of non-self. If you have a model of non-self, that's just another model of something. The point is not having a model of self, which is rather different. The system may still be constructing models, but they're not models which say there is a self and there is another world. They are not making a distinction. Now any model that is made at all must be based on a distinction. Always as soon as there is a distinction, there is a model, and then there is experience. So that's one thing I wanted to say. But I can't answer your second question, what drives the process away from the way the biology ought to be driving?

Gackenbach: Why is there a sequence? There is apparently a certain set and this comes first, and then this, and then this.

Blackmore: That's a different question. The first one, I would say it's very difficult to understand what could be driving it, because after all biological necessity is driving us to have this self- model in order to behave, and to carry on and have babies and everything else. So it's hard to see what could be driving against it. Why is there a sequence? There is a sequence because I think if you de- if you take apart a car, you are going to have to get the shell off first before you construct any complex system you have to de-construct it in a certain way. I mean get into the gearbox.

Gackenbach: There is a reconstruction as well, as far as I understand it. Did you read the *Lucidity Letter* (June, 1989) issue that I gave you where I went through the five stages? The long term meditator that I interviewed got to a certain point of deconstruction but then he started to reconstruct.

Blackmore: Yes, I guess I don't know. Well, we can have many more fruitful days discussing it!

Question: If who we think we are is a model that we construct, sometimes when we sleep at night we don't remember that we slept. We go to bed at midnight, we wake up at 8:00 in the morning or whatever, and it's as if we had just laid down, and we have no recollection of what happened for eight hours. Would you say that that is also a model of unconsciousness, that when we don't remember what we've done or we have no perception, that is a model and that that model is different than what you're talking about?

Blackmore: Yes. Fair question. But first of all I want to take you up on the way you phrased it, because you said "I am building this model and I'm doing--" I always say "the system", because it is the whole system that is doing this: it's creating me.

The difference I would suggest is one where there is no capacity for any model building, and so there can't be any models. That's like the table, or anything, just a lump of flesh. The sorts of states that I'm talking about now, which I hadn't intended to talk about particularly, because I was asked to talk about lucid dreams, are ones in which there is the capacity for enormous model building and yet no model is built. It's sort of emptiness. Spaciousness, because there is all that capacity, and it's not being used. That's what makes it somewhat strange. And you can say, "What is it like to be that?"--that nothing model, where there is all that capacity, is quite different from a system which just doesn't have any capacity and can't do anything.

Question: I would like you to clarify something for me if you could. If I understand you, the lucid dream is so real because there is a re-activation of a model of the self, let's say similar to the waking state.

Blackmore: Yes.

Question: If that's true, first of all why are lucid dreams so often associated with very exceptional kinds of experience, like flying, for example, which seems very real. Nightmares often seem very real. Other kinds of dreams seem very real. Those reality models don't seem to correspond very easily with the waking model of the self. And the second part of that question would be, why wouldn't you make that kind of argument for REM sleep in general, because in REM sleep it seems like the body is acting very much like the waking state. The phenomenological studies seem to suggest that REM dreams are very ordinary, very much like reality. What is the difference between the lucid dream and the ordinary dream?

Blackmore: There are about five questions embedded in there. I'm not sure if I can remember them all. Let's start with the flying. I think flying is a good reason to get into lucidity because you can't do it normally. That's all, it's just a kind of trigger because you can use your logic and say that it can't happen. But your more important question is about--let's take the nightmare. I don't think it seems real in the same way as a lucid dream does. It doesn't have this quality of "I'm being awake" in it. I mean that's the horrific thing about the nightmare. It arouses all these ghastly emotions because it is constructing a really good model of the monster. I used to have a recurring dream of vats of molten metal and I was on a tightrope above and going to fall into them. But there was never any quality of being aware at the time. It was only when I woke up I would think, "Oh God, why didn't I realize?" It was frightening because it seemed real but when I woke up I realized it was only a dream."

What I am saying is very simple really. The system takes the most stable model it has got at the time to be real, so it seems real. But if it hasn't got a convincing representation of self, with all the details that it normally has it is not "I" to whom it seems real. You've got to have not only the realness but

the "I" as well to get this quality that you have in a lucid dream, and that you have sometimes in waking life if you are mindful.

Gackenbach: There are moments of wakefulness when we are hyper-aware that we are real, there is an extra-special sort of presence and awareness and you are there with it, as in the lucid dream. In much of dreaming you are asleep, in a waking sort of way, and the same sort of thing when we're awake, we're asleep. I think she means there are moments while waking that are similar to moments while sleeping. She's not saying all waking is like that moment when you know you're dreaming. Not at all.

Blackmore: Yes, most of waking is a process of a similar model keeping on being constructed to the point where it seems like a continuous self. If you're more mindful you realize that it's just another model, and another model, and another one, and "Oh God, I forgot. Here I am again," and there isn't that continuous self.

Question: I've been wondering about this model that says that lucidity is a matter of self-consciousness. I know I'm here. I used to have lucid dreams that were initiated by my dropping a contact lense, and then looking for it, and then it doubles. There are two of them. And that knowledge would tell me, "Yes, it's got to be a dream." It had nothing to do with, "Oh, here I am!"

LaBerge: But didn't the quality of the dream somehow change in making that recognition. The knowledge in the boundary was I couldn't believe it was dream, but I knew it had to be. I'm saying that I think you're right that it has to have that clear representation, but that can be there and not be explicit knowledge that it's a dream. That's another kind of consciousness, so that we can be conscious of many things, from a pretty low level of consciousness to an abstract knowledge of the fact that you know it's a model that you're seeing. You see, that's a different kind of consciousness. I'm seeing lucidity is an abstract consciousness, it's understanding, not a seeing.

Gackenbach: It's still a construction.

LaBerge: Of course it's a construction, and it's another functional system, maybe the left hemisphere, for example, that's relatively activated. What Susan's trying to answer with the "what's it like" question is referring to your conscious experience of looking around and seeing things. I think the best way to approach the question of consciousness is not as consciousness but as conscious behavior.

Blackmore: Well, I don't think you can do that. I don't think you can talk about conscious behavior versus not conscious behavior. Give me a paradigm for doing it.

Can I just go back before I ask that, to this thing about modules. Because the implication of what I've been saying is that for any of the models constructed by any of those modules, there is something it is like to be it. In other words it's conscious. But it's not necessarily conscious to me. So for the person with blind sight, their self model is quite cut off, because of the brain damage, from the models produced by the orienting system. So I am not aware of it. It also is not aware of me. I mean it's a reciprocal thing. Just because I happen to be the biggest and best model, so I suppose, in the system doesn't mean I'm the only one who can be aware. The rest of the system is also.

LaBerge: Well sure. Now awareness is a different thing from consciousness. To answer your question of what's the difference between conscious and consciousness behavior I can show you. If you can put your hands together with interlocking fingers, which thumb is on top? One of the two thumbs is on top. Now do it another way. That's the difference. The first time you didn't consciously

direct where you put those thumbs. It was an automatic pattern that you had no awareness of. Unless I'd asked, "which thumb was on top?", you wouldn't have known. Where in the second case you used a different mental mechanism to direct your behavior.

Blackmore: I think I could turn that inside out. Take skilled behavior, if I paid attention to it, and therefore were conscious of it, I would do it very well, whereas if I did it in a hurry while the kids are shouting at me, I would do it very badly. You could almost draw the opposite conclusion.

LaBerge: No, I didn't say that consciousness or conscious behavior was efficient. It's not. It's inefficient, it's slow, it's a serial processing. But it's flexible. It can do things we've never done before. Automatic behavior, unconscious processing is well integrated, fast, effective for doing what it's always done, but not conscious behavior. So that's why you have two kinds of systems. You've got most of it automatic, but if you start paying attention to it, it starts breaking down. That's what we're referring to. Consciousness is useful for reorganizing the system and making it creative. I think there is an adaptive function of consciousness. In philosophical traditions there is not. In the psychological literature there is. I'm agreeing that consciousness is a model.

Blackmore: If you say that, please don't say to anybody that Sue Blackmore says that consciousness is a model. I would never put it that way because it's extremely misleading. The only way that I'd ever say it is that "being conscious is what it is like being a model". This is because consciousness can't be a thing. There just can't be a thing labeled consciousness. It doesn't work and it doesn't make sense. So I wouldn't say that consciousness is a model. There are models all over the place. Consciousness is what it's like being one of them. I mean I'm not saying that you couldn't say that. I'm just trying to clarify the problem with that statement and pointing out that I wouldn't put it that way.

Gackenbach: Can I continue this and ask you both, then, what would you do with the experience of pure consciousness? As I've spoken with you both about it I believe you both know what I'm talking about. (Editor's note: see Gackenbach article on pure consciousness in the June 1989 *Lucidity Letter* and the Alexander one in the December 1988 issue.)

LaBerge: First, I would call it pure "awareness." My understanding is that, first of all, I would not agree there is nothing what it's like to be a model. There is a certain number of states. To me awareness has to do with the number of different states of entity. What we have in terms of consciousness is a separate thing, that is a representational model of our awareness. So it's something added on top of awareness. Now awareness may be just here. Everything may be aware, we don't notice because it always is, and of course our brains are evolved to notice what changes. That's why it's biologically adaptive. We've got biological brains. So from that perspective I can't rule out the possibility that there is another truth here now and always that we just don't see because it's always here. That we would expect. So I have an open mind about that kind of possibility that there can be an underlying awareness to everything that doesn't have anything to do with the brain. But the brain obviously has got to do with consciousness.

Blackmore: Do you want me to say something about pure consciousness?

Gackenbach: Oh, you know I do!

Blackmore: I had a great argument with Jayne about pure consciousness because I think if you take pure consciousness as a thing or a stuff or a power or the ground of the universe or something which has causal properties, I can't make sense of that idea at all. It doesn't seem to me to have anything to

do with consciousness in the sense of what it's like being anything. On the other hand the experience of pure consciousness is something quite different, and I'm not going to stand up here and say I know what that is.

Lucidity Letter was a pioneering academic journal and newsletter (1981–1991) focused on the study of lucid dreaming and related states of consciousness. Founded by Dr. Jayne Gackenbach, it acted as a forum for researchers and enthusiasts to share research findings, dream diaries, and theoretical approaches to awareness during sleep.