Shrink Rap Radio #92. Recent Scientific Studies of Dreaming. May 22, 2007.

Dr. David Van Nuys, aka "Dr. Dave" interviews Dr. Mark Blagrove
(transcribed from www.ShrinkRapRadio.com by Kerstin Sjoquist)

Excerpt: *"The point is, from the psychologists' – experimental psychologists' – point of view, the reason they want to know," ah, yes, what was the actual dream about; did the dream have a message; is there something about the dream?" is we have questions to ask, like for example, have we evolved to dream? And if we've evolved to dream, and dreaming has been selected for over evolution, then you've got to come up with purposes and functions for the actual dream itself, rather than just saying, oh we'll use the dream after we wake up. And so there's big issues for the experimental psychologists about: have we evolved to dream or is it a functionless state that might give us meaningful pictures, or is it, has it occurred because other things like imagination have evolved, and we just can't turn the imagination off at night, so it's just a side effect."*

Introduction: That was the voice of my guest, Dr. Mark Blagrove. Mark Blagrove, Ph. D. lectures in psychology and teaches a course on dreams at the University of Wales, Swansea. In addition to his teaching he runs a sleep laboratory and conducts research into the psychology of dreaming. His research concerns the affects of sleep deprivation, and also the similarities and differences between waking and dream cognition. He's a co-editor of the 2005 book *Sleep and Dreaming: Scientific Advances and Reconsiderations*. He's also a past president of the International Association for the Study of Dreams and is a consulting editor for the journal *Dreaming*, and the *Journal of Sleep Research*. He will be a presenter at this year's 24th annual IASD conference, which will be at Sonoma State University in Rohnert Park, California, June 29th through July 3rd, 2007. Now here's the interview.

Dr. Dave: Dr. Mark Blagrove, welcome to Shrink Rap Radio.

Blagrove: Yes, thank you for having me.

Dr. Dave: Yes, well I'm really happy to have you here, and let me start off by asking about your – I know you're a Ph.D., I assume it's in psychology – tell us a little –

Blagrove: It is in psychology, yes.

Dr. Dave: Tell us a little bit about your background and training.

Blagrove: Right. I started off, ummm, well actually I mean I started off actually doing physics and maths and chemistry, and was lucky enough to go to Cambridge University because there it's a very flexible system, and so you can change into psychology, so I changed into psychology, and when I left there a friend of mine was reading a book called *The Innocence of Dreams* by a psychoanalyst called Charles Rycroft. And the book was about the meanings of dreams and how dreams can give you information about yourself, that's quite honest. I mean I've since realized that that's a massive scientific question, but at the time that seemed a very interesting thing, and I wrote my dreams down and then also did a Ph.D. on the relationship between dream content and waking life.

Dr. Dave: Oh you did? Well that's very interesting. I'll want to hear a bit about that. I'm interested because I've come out of the academic life myself, and I've noticed that you are – its says that you are a "reader" at the University of Wales in Swansea.

Blagrove: Yes.

Dr. Dave: Is that in Wales?

Blagrove: It is in Wales, yes, and a "reader" is our position – we actually have an intermediate position between associate and full professor, so it's the position just slightly underneath the full professor.

Dr. Dave: Oh, well one would never guess here that it was that high up the hierarchy.

Blagrove: Yes!

Dr. Dave: Ok, well, so you developed an interest in dreams as a result of the book that you mentioned, I guess while you were still in your graduate studies, is that right?

Blagrove: Yes, that's right, yes, so I'd read that, and I was interested in investigating a bit more what the possible meanings of dream were.

Dr. Dave: And that lead to you doing the doctoral dissertation. So tell us a bit about that doctoral dissertation and what you found out.

Blagrove: The dissertation looked in quite great detail at a series of dreams of a young man who had been at the sleep lab in Chicago, and my supervisor was given these series of dreams and also interviews with the young man about what was going on in his daily life. And so, the thesis was about how his daily life connected with the dreams, and the ways in which his daily life became pictured in the dreams. The interesting thing about the thesis is really that he ended up with stating what the problem was, you know, not really being able to solve it. And the problem was – what it stated after the end – that, OK, dreams seem to be picturing in a metaphorical way concerns that you have during your waking life.

Dr. Dave: Yes.

Blagrove: But the question I raise then – and this is still a massive question on which many, many people disagree, and there's not very much evidence from experimental psychology to judge which way -- what sort of answer to give – is OK, dreams picture things about your concerns, but do they picture things and tell you things that you don't actually consciously know, so they have a message, or do they simply put into a pictorial fashion something that you know already. So it's quite interesting.

Dr. Dave: Yes, it does seem like a key question.

Blagrove: Yes.

Dr. Dave: And certainly it's a contention of the Jungian school that dreams *do* tell you things that you didn't already know –

Blagrove: Yes.

Dr. Dave: That in fact the purpose of analysing the dream is – you haven't thoroughly analysed it until you discover something that at least you weren't *consciously* aware of before.

Blagrove: Yes, that's true. Now of course that then leads onto the problem that it's the experimental psychologists who say they haven't actually worked out experiments to do that.

Dr. Dave: Yes.

Blagrove: In fact the number of actual experiments to see whether the dreams give you insight is probably less than five, from what I know.

Dr. Dave: My goodness.

Blagrove: And there's one by Clara Hill in which she got people to have their dreams interpreted, or they interpreted an episode from their waking life as if it was a dream.

Dr. Dave: OK.

Blagrove: And the idea was, can you get more insight from a dream than you can from interpreting an episode? Now that's a very necessary control, is interpreting an episode, because you have to work out: is it the process of interpretation that gives you all this insight, or is there actually a message there in the dream? And what she found out was there wasn't that much difference between interpreting a dream and interpreting an episode from your waking life. You know the dream gave you a little bit more insight about your setoff, so you're quite correct that the Jungians and the Freudians – it's too harsh to say it's anecdotal work, but their very detailed work can provide some insights that people claim are insights, but you do have sort of extreme sceptics, like Adolf Grübaum for example, saying that even if the person who is being analysed agrees with you that this is a piece of insight, that's not evidence. And so there is a real big problem of trying to work out whether we can show that people got insight from a dream.

Dr. Dave: Yes, I can see –

Blagrove: Or that the insight is there, that couldn't have been got some other way or that they truly didn't know what's now being revealed to them.

Dr. Dave: Yes, I can see that from an experimental point of view, even if that phenomenon is in fact going on that it would be a tough thing to nail down experimentally.

Blagrove: Yes, yes, it would be. I mean personally, although I'm saying that the experiments haven't been done, I actually think that it's very likely that dreams *can* give you insight like that for two reasons. There's so much in psychology now, over the last twenty years or so, which emphasises unconscious processes like sort of prejudice and whole loads of our judgements and things just occur very quickly.

Dr. Dave: Yes.

Blagrove: And we rationalize them consciously afterwards, but so much occurs unconsciously – and this is very sort of recent work in psychology saying that – that I can quite believe that there's so much which is unconscious about why we do the things we do, that dream could possibly, dreams *could* tell us those things. And one way they do, is the notion of metaphor I've already mentioned, which is that a whole load of phrases that people use, metaphorical ones for example like "I'm going to turn over a new leaf," you can suddenly see those phrases and you can think, "Right, well actually if I've depicted something in my life then it could help me to think about things in a different way," in the same way as if you go and see a film, you can sometimes see a new way of looking at your life from a film, and you can get insight like that, that you didn't know before. So I think it is a decent hypothesis to say that your dreams could give you insight in the same ways that people *do* get insight from seeing films. I think it's a very plausible hypothesis, it's just testing it is the problem!

Dr. Dave: Right, right, definitely. You know, I come at this with a background as a psychotherapist and clinical psychologist, so to me it's a little bit moot whether or not the meaning is encoded in the actual dream itself or whether that comes in in the process of interpretation, because either way, it's going to be expressive of the person's unconscious.

Blagrove: Yes, that's very true. In fact, I've recently was in a workshop where we were looking at our own dreams, and the person running the workshop emphasized – took the view that what was in the dream actually is really quite – is not so important. Because what's important is you've had a dream, and the dream when you think about it puts you in a frame of mind where you want to sort of be flexible and to think about things, and be more open to new possibilities. So if you're looking at dreams from that point of view, of could they provoke you into being a more receptive or insightful state, then that's completely -- that's extremely valid, and could quite possibly be extremely useful. The point is, from the psychologists' – experimental psychologists' – point of view, the reason they want to know," ah, yes, what was the *actual* dream about; did the dream have a message; is there something about the dream?" is we have questions to ask, like for example, have we evolved to dream?

Dr. Dave: Yes.

Blagrove: And if we've evolved to dream, you know, and dreaming has been selected for over evolution, then you've got to come up with purposes and functions for the actual dream itself, rather than just saying, oh we'll use the dream after we wake up. And so there's big issues for the

experimental psychologists about: have we evolved to dream or is it a functionless state that might give us meaningful pictures, or is it, you know, has it occurred because other things like imagination have evolved, and we just can't turn the imagination off at night, so it's just a side effect. So, I agree with you, yes, that the psychotherapists can find a purpose for dreams in the way you've said, but the sort of experimental psychologists seem to be trying to look at a slightly different question of how we got the actual dream, even though I agree some people would turn around and say well actually we don't even know what the actual dream was.

Dr. Dave: Yes, it's interesting how many mysteries still remain. Let me just pull back for just a moment. I see that you head up a sleep laboratory.

Blagrove: Yes.

Dr. Dave: Can you describe that to us, both in terms of what's the physical layout, what kinds of equipment if any you have, and sort of how you use your sleep laboratory?

Blagrove: Well, yes, we've got a two-bedroom sleep lab, which is in a sort of semi- sort of underground place – well it's not really underground but it's in a sort of basement that's without any windows. So we've got two bedrooms and we've an EEG so we can monitor people. We also monitor them with a device called the Nightcap®, or the REMView®, which Hobson's team at Harvard Medical School invented, which is a way of working out if people are in REM sleep or non-REM sleep without using an EEG, so we can monitor them with that as well. And so we have them in there staying overnight and do things like play sounds to them and see whether it affects their dreams. We did a recent study in which we woke people up suddenly from REM sleep and from non-REM sleep, and gave them a computer screen on which there were anagrams, and they had to solve anagrams, and we were looking at work that had been done which says that if you suddenly wake people up from REM sleep then people are better at solving anagrams, and so there's a sort of hangover from REM sleep in which you are more creative during REM sleep than in non-REM sleep, and this is the idea that REM sleep may have a function of putting memories together in a creative way, in a way that doesn't happen in non-REM sleep. So it's that type of study we've been doing.

Dr. Dave: That's very interesting. And do you have any data from that study yet?

Blagrove: Well that one, we actually got the anagrams from the Harvard people, Matt Walker and Bob Stickle, who've done that experiment – they had suddenly woken people up and found that – and what we decided to do is work out how long does that last for? And so rather than giving them the anagrams immediately [after they] woke up, we gave them about four minutes. By four minutes the performance after REM and non-REM sleep was absolutely identical. So, this sort of hangover from the neurochemical state you're in in REM sleep lasts for maybe a minute or two and then dissipates away. The idea behind that sort of study was that you obviously have difficulties working out have people got flexible people during REM sleep, because they're flat asleep and so you can't really do much cognitive psychology testing on them, and so the theory is that if you suddenly wake people up then you test them right at the point when they've just woken up, then the neurochemistry of REM sleep might still be sort of hanging over, and you can test them then.

Dr. Dave: I wonder if that has anything to do with dream recall, because certainly we've all noticed – or *I've* noticed for myself – that if I wake up from a dream, and if I ask myself *immediately*, as soon as I've woken up, what is this dream about, if I try to recall the elements of the dream, that I can do it, and I can even sort of commit them to memory at that point, or I can have what feels like profound insights, sometimes I'll wake up in the morning and I'll know that I, not only did I have a dream, but that I was able to analyse it during the night, but that by morning I've both forgotten the dream and I've forgotten the analysis, but I know that both happened!

Blagrove: Yes! Yes! (Laughing) Yes, it does need effort to sort of look at them. I actually find for myself that I often get the opposite effect occurring, that I write down a dream which is utterly meaningless (and no doubt this happens to you and other people as well), but it's actually then over the day that you can see that something that looks absolutely meaningless actually might be hinting at something.

Dr. Dave: Yes, it does take some work.

Blagrove: So when it happens the other way round that's also interesting.

Dr. Dave: Yes. So do you think though that they effect that you just described of needing to… of that creative state lasting only maybe a minute or two after the person has been awaked from REM sleep, do you think that process has any bearing on issues relating to dream recall?

Blagrove: Ummmm… the main thing about the way it relates to dream recall is that claim that the neurochemistry of REM sleep is such that it's such a different neurochemical state that that's why you can't remember the dreams, that we're not set up when we're asleep to be able to remember the dreams. And so they are on the whole forgotten.

Dr. Dave: That's reminiscent of Charles Tart's theories from years ago: state-specific learning?

Blagrove: Yes. Yes. Although of course some people will come along and say, yes, it's so state specific that you've not learned anything, and it's not going to help you when you're awake, so that's the other big dispute is that if the dream is forgotten, can it still affect us? And of course there are some people (Revonsuo) claiming that the actions you do in a dream and practising which you can do of overcoming threats in a dream, even if you don't remember the dream at all, or don't know you ever had it, the mere fact that you've gone through these processes has a lasting effect on you. But some people will disagree with that and say that, you know, something that you can't remember is not going to have an effect on you. Yes, no that's another big debate.

Dr. Dave: Boy there are a lot of big debates here!

Blagrove: There are! (Laughs)

Dr. Dave: You know one of the most basic questions is: why do we dream? And is there a scientific answer to that question yet?

Blagrove: Well, what some people are trying to do – they've been trying to do for a few years – is to tie the recent work on the functions of REM sleep into dreaming. And to say that, right, if REM sleep has got a functions maybe dreaming is part of that function. Now there's problems with saying that though, and the first problem is that we have dreams during non-REM sleep, and so what are they about? But what's generally been found over the past few years is that REM sleep can aid people's memory, and that having a period of REM sleep, and actually non-REM sleep as well, can aid different types of memory, and that if you learn something before you go to sleep the memory of it can be enhanced across your period of sleep, so you actually do better on certain memory tasks after sleep than you would do after you've been trained on them. It has nothing to do with sleepiness, or overcoming sleepiness; it's that there's a consolidation effect that sleep actively does on the memory. Now what some people seem to be trying to do is they're saying, right, if REM sleep

has got a function maybe dreams are part of that function, and that again is another debate. I mean, part of the problem there is that REM sleep seems to help the learning of skills, and yet we don't really dream about our skills learning, you know, our typing practice we've just had or our driving the car practice or… Unless things are emotional they're not really dreamt about. Anyway, that's just another debate that's going on. People trying tie in a possible function of dreaming with what seems to be really quite certain discoveries now about the functions of REM sleep.

Dr. Dave: Now just in case there's some listener who has not heard the term – I think everybody now knows what REM sleep is, but it refers to "rapid eye movement," that there are periods during the night where the eyes move rapidly and anybody can see this if they watch a sleeping person you can see their eyes moving beneath the eyelids. And so these represent distinctly different brain states, the REM and the non-REM periods of sleep.

Blagrove: Yes, yes. In fact, the movements of the eyes was spotted and written about by a man called Ladd in the nineteenth century and he wrote about it in a philosophy and psychology journal, and it was odd that it actually took the electrophysiological discovery of it to make everybody aware of it, when actually as you just said if you just look at people you can see the eyes moving.

Dr. Dave: Yes.

Blagrove: But we seem to have made it the electrophysiology of it to tell us to look for it, and now pretty much everyone knows that it's there.

Dr. Dave: Yes, so one answer you're suggesting to why we dream, from the scientific point of view, is that it – at least the REM part of the dream cycle – facilitates –

Blagrove: Memories.

Dr. Dave: It seems to consolidate memories and to facilitate skill learning.

Blagrove: Yes, that's right. Yes. I mean where this also leads into some of the work we're doing at Swansea is on nightmares. Because of course you can have people who are having traumas who will then have dreams about that trauma, or people who've got levels of anxiety about things in their lives who will then have an increased number of nightmares, and what

we've been looking at is the possibility of, you know, what's the relationship between having nightmares and your waking life traumas and anxieties, and there's a big debate going on there about is the nightmare a way of overcoming those traumas, is part of the memory process of the trauma, or is it just an unfortunate reaction that's actually not got a purpose and is in fact, probably makes the trauma even worse.

Dr. Dave: Hmmm.

Blagrove: So that's another debate that's going on.

Dr. Dave: Well that's interesting. As a clinician, I would think that there are both kinds of things happening. That the person is overwhelmed, if the ego, so to speak, is overwhelmed by events, that's something that we call "trauma," and that it's possible that in mild cases of – relatively mild cases of trauma – the ego is able to work it through.

Blagrove: Yes.

Dr. Dave: But in severe cases, particularly clinically, we know that if there's early intervention after a trauma that it can be worked through, but that as times goes by and it's allowed to consolidate over a period of months and years then it doesn't get worked through and those nightmares are more likely to persist.

Blagrove: Yes, that's quite possible, yes.

Dr. Dave: That's what I think, you know, clinically. Now, in the research laboratory I know there's always a gap between clinical observations and what's been able to have been demonstrated in the laboratory.

Blagrove: Yes, I mean what's been proposed [by] Bob Stickle and Matt Walker's group is that during sleep information episodes, which is held sort of in the middle of the brain in the hippocampus, is passed to the cortex in order to give it context and in order to stop it being just an episode but to put it in the context of lots of other memories as well, and that they've worked out a physiological hypothesis about what's happening during the night, about the passing of memories like that. And that can lead to the possibility that when you've got nightmares maybe that process is stopping. And Ernest Hartmann has been one of the people who's written a lot about that, about when you can be so overwhelmed with the emotions that you're tyring to depict that you get these nightmares.

We've actually been doing interesting work on that though, about why some people have lots of nightmares, because there's been for decades research on people who have lots of nightmares and how they differ from people who don't have lots of nightmares. And what's usually been found is that there's small relationships, or smallish ones, with say how anxious or depressed people are when they're awake. Ok, now that's been known, and various other sort of more psychiatric problems that people can have. But what we've tended to be finding is that if as well as asking people how many nightmares they have you also ask them how bothered they are by their nightmares, their waking life problems seem to have more to do with how bothered they are than it does with the actual number of nightmares. And so, what seems to be happening is that you can have people who have actually got quite a nice life, who are actually having a lot of nightmares, and so the relationship between waking life and having nightmares may be smaller than we thought it was. So that leads to the next lot of thinking about why on earth are people who are really quite happing having lots of nightmares? Why doesn't it have a relationship to waking life, or having only a small relationship with waking life? So, that's another bit where that's the current state of things, and another thing people are looking at.

Dr. Dave: Boy I have some difficulty with that. Do we know how frequent that is, that "people who appear to be happy" are having lots of nightmares? What percentage of the population would that represent?

Blagrove: The reason we know that is because what's done in the experimental studies is you work out for lots of people – so you get about a hundred and fifty people in your study – you work out a correlation between how many nightmares they have and say how anxious they are, or stressed they are. And what's found when that is done is that the relationship is actually quite small. So that means that if the relationship is quite small, then you're having people, some people, who are quite anxious and not got many nightmares, and some people who are not at all anxious who are having quite a few. Because otherwise if it was only the anxious people having nightmares and the non-anxious people not having them then you'd have quite a strong relationship there.

Dr. Dave: Yes.

Blagrove: But we seem to be finding that the relationship is smaller then would be expected.

Dr. Dave: Yes, again drawing on my own experience from working with lots of students in dream groups for many years, and you know to have a

student who will report nightmares or a recurring nightmare – that's another topic we should probably talk about, the recurring nightmare – and on the surface if you ask them, you know, are they having any problems in their life, et cetera, you know they draw a blank, you know, everything's fine, they can't see any relationship at all, but as we attack the metaphoric messages in the dream, and persist, nearly every time in my experience we eventually connect with some concern and it may be an old concern, you know, that's behind those nightmares.

Blagrove: Yes, yes, that's right. Yes, no, that's quite possible. I mean one explanation for this is for this apparent small relationship between waking life and nightmares could actually be that no matter what your waking life is like, your nightmares, your dreams, will look for concerns you've got, and so even if you're apparently quite calm, the dreams will search out the concerns, and so you'll still have nightmares.

Dr. Dave: Right.

Blagrove: So I guess that's similar to what you're saying.

Dr. Dave: Yeah, and also I think we're probably limited by the ways in which we're able to assess their current levels of concern. I mean, I assume that's going to be based on a paper and pencil test, or something like that.

Blagrove: It is, yes. I mean all of this, I mean really… yes, what I'm talking about is very much this sort of surface level stuff that's right – that experimental psychology is dealing with. I mean that's one reason why the dream conference that's going to happen in the end of June is so exciting because you've got the clinicians along, and you get the experimental people along, and people are approaching it from the different directions.

Dr. Dave: Right. Now what about recurring nightmares? Do we know anything about those from an experimental point of view?

Blagrove: I think the one thing that we know about recurring *dreams* is they tend to be negative, and so that's – *dreams* that recur tend to be negative. Now *nightmares* that recur, having a nightmare that recurs is far more frequent to happen for people who've had a trauma. Whereas people who haven't had a trauma, and they're just having ordinary nightmares, a characteristic of those nightmares is they're often quite different each time. And they also tend to happen near the end of the night as well. And you also don't tend to move during them. Whereas recurring nightmares are

more likely to occur because of a trauma having happened, and to occur earlier on in the night, and to be accompanied by movement as well.

Dr. Dave: OK, let me make sure I understand what you just said, that they recurring dream, we won't call it a nightmare, but that recurring dreams that are not based in trauma, that the content varies. Although it's still recognizable as bearing on that theme, but the content seems to vary?

Blagrove: Umm, well, it's just that there are two, there seem to be two types of nightmare. There's the recurrent type, where people repeat a similar event happening in the nightmare. They seem to occur after people have had trauma, and it will often depict the trauma, and it will often occur in the early part of the night.

Dr. Dave: Yes.

Blagrove: And also be accompanied by movement. Whereas the nightmare that's more common for people where the nightmare doesn't seem to have a cause is not really referring to waking life directly, and the nightmares will often be different, each one of them. Those nightmares seem not to be related to traumas but instead occur later on in the night, and just seem to happen.

Dr. Dave: OK.

Blagrove: So you know, they don't seem to have such a direct relationship with waking life events.

Dr. Dave: OK. Now you were the – I found on the web that you were the co-editor of the 2005 book called *Sleep and Dreaming: Scientific Advances and Reconsiderations*. So that leads me to two questions.

Blagrove: That's right.

Dr. Dave: What advances and then what reconsiderations?

Blagrove: Right! Yes. It had, ummm, oh there were quite a few reconsiderations in that it was a Cambridge University Press book, it required sort of an academic… book. One of the reconsiderations was about the link between REM sleep and dreaming. And so there's a chapter in it by Mark Solms in which he's found a lot of people who've got brain damage, and the brain damage is – the two groups of people he's interested in, one group has brain damage near the back of the head, in the sort of

imagery and visual areas. And another group of people – these are large numbers of people – have damage at the very front of the brain, in areas that are to do with motivation. And what he's found is that if you have damage in either of those areas, then dream recall stops. And so what he proposes is that you don't really have – you don't dream because you're in REM sleep, you dream because your brain is quite active and wishes and motivations and concerns are active in that bit in the front of the brain, and it's passed over to the back of the brain and you see these images to do with those motivations and concerns, and so a dream is produced. But the main point about that paper was he was tying dream production down to the brain, and saying that it can occur outside REM sleep. So that was one of the – people have known for a long time that you can get dreams outside REM sleep, in non-REM sleep, but he was looking at the physiology, and the neuroanatomy of how that can occur. So that was one of the reconsiderations.

Dr. Dave: OK.

Blagrove: There was another paper there which – Revonsuo's paper – which created quite a fuss because this was the paper in which he proposed that people, when they're dreaming, they dream about threats that they're under, and it's a bit like virtual reality, that you can practice, you know, throwing your spears at the dinosaurs or whatever, in your dreams, and you can practice things that might have been too dangerous to practice in waking life, or that in waking life you might have only had one chance at practising, because, you know, you may have been killed if you did it badly.

Dr. Dave: Yes.

Blagrove: And so he put forward a theory called a "threat simulation" theory, which is that you simulate and practice overcoming threats in our dreams. So that was one of the other sort of reconsiderations in that book.

Dr. Dave: You say that was – that created a bit of a fuss.

Blagrove: It created a bit of a fuss because a lot of people disagreed with it, you know, on the grounds that it, for example, that dreams are really quite bizarre, and so if they are really bizarre they are not the environment in which you can work out realistic ways of doing things. So I think it met a lot of scepticism with the results of that.

Dr. Dave: Where's the cutting edge of sleep and dream research today?

Blagrove: One of the cutting edges at the moment is lucid dreams. And lucid dreams are a type of dreaming which you know you're dreaming, and then can carry on in the dream and make decisions in the dream, decide to do things, you know, like gee I'm going to fly and see what that's like, or I'll throw a vase down and smash it and see how my dream pictures all of the pieces of it. And so there is work done there about why some people have lucid dreams and other people don't. It's quite a rare occurrence, about 15 to 20 percent of the population in America and Europe have lucid dreams one a month or so, so it's quite rare, or rare-ish, and we've been doing work on what kind of personality has lucid dreams and what types don't. We've been finding out that there's a type of person called an "internal locus of control" person who tends to see everything that they do in terms of their own decisions, and similarly that everything that other people do is their own decision. You know, it's if they haven't got friends it because, you know, they're just no good at making friends. The opposite to internal locus of control is to emphasis chance, or the effects of powerful people or society on people. And so, internal locus of control is a bit of a non-forgiving personality trait, and we've found that frequent lucid dreamers are more likely to have personality trait. So, lucid dreams is a bit – because it ties in with a lot, large amount of research that's done on consciousness, and why people are conscious because lucid dreams are a type of dream in which you become more conscious than in other types of dreams.

Dr. Dave: I've worked at tyring to be a lucid dreamer a bit myself, not had very great success. I can think of maybe two or three dramatic lucid dreams that I've had and, I got so excited when I realized that I was lucid that it woke me up!

Blagrove: Yes, no that can happen; that can happen! Yes. I mean what happens to me is I try to fly, and being horizontal just keeps reminding me so much of the fact that I'm in bed that that then wakes me up, so it's very, very difficult to maintain.

Dr. Dave: Yes.

Blagrove: And it's a very sort of rare occurrence, and there are theories about parts of the frontal areas of the brain, which are very inactive when you're asleep, suddenly becoming active during REM sleep and causing you to realize that you're in a lucid – in a dream. So, the lucid dreaming research ties in with consciousness research that's going on worldwide.

The other thing is nightmare research, and trying to work out why are some people distressed by their nightmares. That's another area in trying to work out, because that's to do with also trying to work out how it's possible to treat people who've got nightmares and is it possible to decrease the number of nightmares that they're having.

Dr. Dave: Sure. Sure. Picking up on your internal locus of control for lucid dreamers, has anybody studied the possible correlation between meditators and lucid dreaming, because I would expect that meditation training and practice would lead to an increase in lucid dreaming.

Blagrove: Yes. Now it's possible that Jane Gackenback who's done work on lucid dreaming has done that. I can't quite remember now, but she's got various odd populations. One of her most recent ones of interest to her is people, young people, who play – Jane Gackenback and one of the populations that she's been looking at recently are young people who play video games a lot, and the idea is that they get so engrossed in these video games, that they're actually then when they're asleep able to know that they are dreaming. But I don't know whether she's done that with meditators, but I think it's possible she has.

Dr. Dave: OK, yeah, boy, I'd like to know that. She'll probably be at the conference, right?

Blagrove: Oh, Jane has a whole symposium of different work on lucid dreams, so she'd be there to ask about meditation.

Dr. Dave: Yeah, I'll try to remember to do that. Now you're going to be giving a presentation at this upcoming 24th annual International Association for the Study of Dreams conference, and I note that you are past president of the organization.

Blagrove: I am, yes, yes, yes.

Dr. Dave: What's your presentation going to be at the upcoming conference?

Blagrove: Well, I've got four presentations in all, actually, which are being done with a Ph.D. doctoral student of mine who's just graduated with her doctorate in these. One of them is about people who have brain damage, and the fact that some of them with brain damage, about a third of them, started having nightmares, but another third of them who were more severe with their brain damage stopped dreaming at all. So that again ties back to

the work that I was mentioning, Solm's work, about how damage to the brain can cause you to stop dreaming, or at least stop recalling dreaming. We also have got another paper on sleep apnea, which is the famous disorder where people stop breathing during the night, many hundreds of times during the night, and we tried to see whether or not people with sleep anpea, because it's such an awful thing to be happening – you know that you're depriving yourself of oxygen and not breathing – are they going to have nightmares because of that. The alternative view being that their sleep is so disruptive that it's not possible to have nightmares because your sleep is in such a bad way. So we've got a paper on nightmares in people with apnea, and another two papers on nightmares of whether or not we can predict by various personality measures which type of people are more susceptible to nightmares. And another one on people's distress that they have at nightmares and what leads some people to be more bothered by having nightmares than others. That's a whole symposium on the last day, on that.

Dr. Dave: Well that sounds really fascinating, and I hope that I get to attend some of those, and I really want to invite our listeners to consider coming to California for this very, very interesting conference.

Dr. Mark Blagrove, thanks so much for being my guest today on Shrink Rap Radio.

Blagrove: Well thank you very much for inviting me, and I'll see you at the conference.