Shrink Rap Radio #197, February 27, 2009. Scientific Parapsychology with Dean Radin

David Van Nuys, Ph.D., aka "Dr. Dave" interviews Dean Radin, Ph.D.

(transcribed from www.ShrinkRapRadio.com by Rachel Charish)

Excerpt: *You select a target, either a picture or a video clip, which is part of a pool, so you might have a pool of four possible targets, one of which is randomly selected to be the target in a given session, and the other three targets are as different as possible from each other as you can make. So the sender, in the experiment, tries to send the selected target, and the receiver tries to describe it, and then they try to match it up later and, of course, under double-blind conditions, so that the subject and the experimenter have no idea what the actual target is, and so in that kind of experiment, you'd expect a 25% hit rate, by chance, and what we see after about 3,500 sessions like this, from about 20 laboratories around the world, is that you get a 32% hit rate, and that 32% is primarily with college sophomores. Unselected people, or people who are not claiming any special ability. So the 32% hit rate, where 25% is expected by chance, if you work out the statistics on it, you end up with odds against chance of more than a quintillion to one.*

Introduction: That was the voice of my guest, Dr. Dean Radin. Dean Radin, PhD., is senior scientist at the Institute of Noetic Sciences, and has served as president of the American Parapsychological Association four times. A little over a year ago, he gave a presentation at Google, which can be found on YouTube, and it has become the most discussed talk of the 1,031 talks given there, as of this writing. His first career as a concert violinist shifted into science after earning a master's degree in electrical engineering and a PhD in psychology from the University of Illinois, Champaign-Urbana. For a decade, he worked on advanced telecommunications R&D at AT&T Bell Laboratories and GTE Laboratories; for over two decades he has been engaged in consciousness research. Before joining the research staff at IONS, he held appointments at Princeton University, University of Edinburgh, University of Nevada, and three Silicon Valley think-tanks, including SRI International, where he worked on a classified program investigating psychic phenomena for the US government. He is author or coauthor of over 200 technical and popular articles, a dozen book chapters, and several books including the bestselling The Conscious Universe (HarperOne, 1997) and Entangled Minds (Simon & Schuster, 2006). His technical articles have appeared in journals ranging from Foundations of Physics, to the Psychological Bulletin, the Journal of Alternative and Complementary Medicine, and the Journal of Consciousness Studies. He has been interviewed for television shows ranging from Oprah and Larry King Live, to the BBC's Horizon and PBS's Closer to Truth, and he has presented over a hundred invited lectures in venues including Harvard, Stanford and Princeton Universities, Google headquarters, and DARPA. Now, here's the interview.

Dr. Dave: Dr. Dean Radin, welcome to Shrink Rap Radio.

Dr. Radin: Thank you very much. Glad to be here.

Dr. Dave: Well, I'm so pleased to finally have this opportunity to interview you about your scientific investigations of psychic phenomena. I've been hearing your name for years, and I've had your book, The Conscious Universe, on my nightstand for some time. I guess the fact that I knew that you were in the local area led me to think our paths would cross at some point, and then they did, recently, at a party for students in the Dep. Psychology program at Sonoma State University. So it was great to meet you in person.

Dr. Radin: Yeah. Good to meet you too.

Dr. Dave: Yeah. Now, you're currently a senior scientist, or the senior scientist, perhaps, at the Institute of Noetic Sciences, which is located in the nearby hills of Petaluma. Maybe you can tell us a few words about what the Institute is and its mission?

Dr. Radin: The Institute of Noetic Sciences was founded in 1973, the year after Apollo 14, which was the second group of astronauts to actually land on the moon. And one of those astronauts was Edgar Mitchell, who, on the way back from the moon to the Earth, had a full-blown mystical experience, a feeling of connectedness with the universe, and it was a life-changing and palatable feeling of oneness that was so pleasant and shocking at the same time to Edgar that, when he came back to the Earth, he was struck with the same feelings that many people have who unexpectedly have these illuminations. How do I reconcile the scientific world that we've learned to rely on with these experiences which have been discussed throughout history by apparently wise people? So he started the Institute of Noetic Sciences in 1973 as a place that would use the tools of science to try to understand these noetic experiences. A mystical experience is one of a class of noetic experiences.

Dr. Dave: Yeah, what does the word noetic mean? I think most of us have never encountered that word. I've encountered it, because I know about the Institute, but…

Dr. Radin: Well, it comes from the the Greek root word "nous," which means to know, and it refers to the broadest range of ways of knowing, so in Western terms, probably the closest that we have to this is intuitive knowing to contrast it against rational or analytical knowing. Of course, intuitive knowing is understood in Western cognitive science terms as things like implicit learning, and forgotten expertise, and that sort of thing, all of which is probably true. That's one way we can think of intuitive knowing, but the question is whether there are other forms, forms where… and the traditional definition of intuition is you gain unmediated access to knowledge, and so that's the kind of thing that I study.

Dr. Dave: Okay. Now, actually, I know the Edgar Mitchell story because it turns out that I actually did an interview with Edgar Mitchell a long, long time ago. I wrote up an interview, actually, that was published in a magazine that, unfortunately, is now defunct. It was called Human Behavior. So I remember him telling me this story of looking back at the Earth, and that transformative experience that he had, and I think, at that point, if I recall correctly, he described the sort of idealistic plan for what was to become the Institute of Noetic Sciences. Either it was something he was about to do or he had just done it. It was kind of a gleam in his eye. And it's really become one of the major consciousness organizations on the planet.

Dr. Radin: Well, I don't know if he had in his mind before he went to the moon that he might create an institute like this.

Dr. Dave: No, this was after. I interviewed him after.

Dr. Radin: Oh, yeah. After. Yeah, certainly after that experience catalyzed his interest into forming the Institute, and it's true that part of the idea of exploring the boundaries of inner space or the outer limits of inner space, you're always going to bump up against things that, from a mainstream academic point of view, are going to either look like superstition or are going to strongly counter a philosophical bias about the way you think the world works, and that's built into the structure of an institute that's looking into things like noetic sciences, and that's also been a value, I guess, for being a private institute. We've been able to promote ideas and fund projects that otherwise would have no chance of getting funding at all, and to just name a few examples, 30 years ago or so, when the Institute started, the idea that mind-body medicine might be something worth paying attention to was considered laughable. The only form of mind-body interactions that might be medically relevant were called psychosomatic, and were not considered to be a serious issue except, maybe, for psychiatrists, but certainly mainstream medicine was not considered. The same was true about the idea of using meditation for stress relief. In more recent – and of course, both of those are now not only mainstream, they're accepted by insurance and they're on the cover of Time magazine. So it can take a generation for some ideas to penetrate into the mainstream, and the Institute of Noetic Sciences was one of the first to bring people together to convene conferences on these ideas, and to fund people with seed grants to get the fields going. A second example is on the value of… or the study, just simply the study, of qualities like compassion and love, which simply were not happening in academia at all 30 years ago, and now have become large programs in many academic centers, the study of compassion, the study of love.

Dr. Dave: Yes. So what's your role, as senior scientist, at Noetic Sciences?

Dr. Radin: Well, my part is focusing on the basic science question. It's about the ontological reality of the strange experiences that people report. So one thing we're preparing to do now is studying meditators who… a form of meditation called non-dual meditation, where the practitioners, after a while, begin to subjectively feel that they enter a timeless space or a timeless time. I'm not quite sure how to describe that. But a place where there's no movement of time anymore. So this is common among a lot of meditative practices, but this one, in particular, most people, advanced practitioners, get to the point where they feel like there's no time. And so one of the experimental paradigms I've been working with for over a decade now is ways of detecting our attention through time, and so what I'm talking about is that the usual sense of now is roughly 500 milliseconds. The experiment sees whether you can expand your sense of now, or your perception of now, out to be about five or six seconds, and I'm not talking about in the past, because that would just be memory, but into the future. Can you expand your sense of now five or six seconds into the future? So I've done experiments of that type, and the answer appears to be yes, and so we used that same experimental paradigm with these meditators to see if, when they report subjectively that they're expanded through time, can we objectify that?

Can we measure and see if, in fact, that's true? So that's one example of how I take experiences that people talk about, which we might think of as mystical or psychic, and apply some kind of experimental test to it to see whether or not their subjective sense can be verified objectively.

Dr. Dave: Great. And we may get into the set up for that research a bit more as we go along. One of my listeners, Tom Carroll, who's an organization development consultant, is a big fan of yours, and he referred me to the presentation you gave at Google last year, which is now on Youtube. I see that it's had close to 40,000 views. That must be some kind of high water mark for exposing the public to the scientific study of psi.

Dr. Radin: Well, not only that. It is also the #1 discussed video of the – over 1,000 videos that are – it's 1,000 talks that have been given at Google, over the past couple of years, and all of them are available on a site called Google Tech Talks.

Dr. Dave: Yes.

Dr. Radin: And it's the #1 most discussed, and about the 22nd, 23rd most watched, out of those. And it's true that, as a way of disseminating information, one of the reasons why I decided it would be great to give a talk there is because I knew that these Google Tech Talks would be captured, in their entirety, by Google, which owns Youtube, and put up on the web, so I thought that's a great way of reaching out to all kinds of people.

Dr. Dave: Right. How did you…

Dr. Radin: And apparently it has worked.

Dr. Dave: Yeah. How did you come to be invited to give a talk at Google anyway?

Dr. Radin: Well, one of the senior managers is a member of the Institute of Noetic Sciences, and I gave a talk at the IONS biannual conference a couple years ago, and she came up to me afterwards and introduced herself, and I said, "Oh, maybe you can invite me to give a talk at Google," and she said, "Sure." So that's how we set it up.

Dr. Dave: That's great. I actually taught an undergraduate course on parapsychology at Sonoma State many years ago, and at that time, I was very impressed by the work of our mutual friend, Stanley Krippner, on dream telepathy, which seemed very solid and scientifically impeccable. Yet, as you point out in your Google talk, there's still this huge taboo, among academics, in regard to psychic phenomena.

Dr. Radin: Mm-hmm.

Dr. Dave: Maybe you could comment on that just a bit.

Dr. Radin: I think part of it is that students, especially in psychology, are inculcated with a way of thinking about the fabric of reality. We… this is something I had to reconcile with myself, after going through a traditional scientific training, first in engineering and, later, in psychology, that, first of all, the topic of psychic phenomena or mystical experience is either never mentioned at all, or if it is mentioned, it's mentioned in a disparaging way, and sometimes reasons are given why you can simply ignore all this stuff. But it's not simply an intellectual way of going through that description. There's an emotion typically tied underneath it, a kind of sense that people who believe in these things are stupid, and they're ignorant, and so, obviously, no student is going to counter that, because they'll be regarded by their teachers as stupid and ignorant, and that's not the way you play the game as a student. And, unfortunately, people who are then attracted to the academic life seem to have bought into that concept even more than other students might, and they learn very quickly that there's some things you can talk about in the academic world, and there's some things that will get you fired, or at least that won't get you tenure, and among them is a certain philosophical bias about the way that the world works, and it's exceptionally difficult, in psychology in particular, to counter that. It's not so difficult if you're in, say, anthropology. If you're – or maybe religious studies, and you – the way you presented this was, you're studying the beliefs of indigenous people, or studying the basis of religious or mystical belief. That's fine. But to study this concept within psychology, which is still very strongly influenced by behaviorism, is… it's death to one's career. So, almost by definition, the people who end up staying in academic psychology are the ones who have decided either not to talk about it, or who don't buy it to begin with, and it just sustains the taboo.

Dr. Dave: It's interesting that, as you point out, there's this sort of huge cultural pressure that we've all been exposed a lot to, particularly in academia, to this sort of underlying message of "This can't exist. It doesn't fit into our framework." I remember years ago, and I'm blocking on his name now, but there was a writer in this general field, who came up with the idea of what he called "repression of the sublime," that just says we can repress very negative experiences, and kind of try to drive them out of consciousness. Sublime experiences, that don't fit into our belief system or into our network, can be equally threatening.

Dr. Radin: Mm-hmm.

Dr. Dave: And so one of the ways I experienced that is, I've had certain psychic experiences, nothing earth-shattering, but little minor ones, over the course of my life, but I can lose touch with them. I can almost forget that they ever happened, under the pressure of this sort of cultural… I don't know what word to give it. This cultural fog of forgetfulness.

Dr. Radin: Yeah. I call it retrocognitive dissonance.

Dr. Dave: Okay. Yes.

Dr. Radin: It's having an experience that's remarkable, and you have all the right reactions to it, and then you, first of all, have to decide if you're going to tell anybody, and whether you do or not, it's very easy for those experiences to begin to fade away, because they just challenge the way we've been taught to believe the way the world works, and it's uncomfortable to regard it.

Dr. Dave: Exactly. Yes, yes. You know, for any listeners who are wondering about this as we're talking about it, and who think that we're just beyond the pale, I want to both refer them to your Google presentation, and I'll be sure to put a link to that in the show notes, on the site, and also to refer them to your book, The Conscious Universe: The Scientific Truth of Psychic Phenomena, because you review an awful lot of literature there that really seems to establish the reality of at least some of these… what are called psychic or psi phenomena. In your Google presentation, in fact, you cite some studies in which the effect sizes are much greater than the effect sizes of studies suggesting we should take baby aspirin to prevent heart attacks.

Dr. Radin: Mm-hmm.

Dr. Dave: Yeah. Tell us about that.

Dr. Radin: Well, one of the principle complaints about parapsychology, and specifically meaning the experiments to study these things, has been that the effects are not repeatable, and so the same kind of criticism is viable to all kinds of experiments, and the reaction to answering that question is meta-analysis. It's analysis of analyses, and specifically, it's a… rather than in the old days, we might do a narrative review of articles in the particular field, this is a quantitative review or integrative, quantitative review. And the way you do it is you find some measure, some quantitative measure or statistic, that captures the essence of what a given study is looking at, and then there are a number of statistical techniques that can be used to combine the results of multiple experiments, and in that process, you can find out what is the actual size of the effect that you see, on average, across many experiments, and you can judge whether the effect is homogenous and, if it is, then you can see whether or not it is repeatable, because if the homogenous effect size – typically falling into something like a normal curve – if that effect size is not zero, then it suggests that, whatever is going on in these experiments, it tends to repeat itself again and again, and that gives us confidence that the effect is real. So I've applied the same techniques of meta-analysis that are used in the medical sciences, and sociology, and ecology, and epidemiology, and lots of other places, the same methods used to look at the question of effect size, magnitude, and repeatability, in

parapsychological experiments, and what we find is that, for some effects, like the one you were referring to was for telepathy experiments, the effect size there is much bigger than the effect size that has been measured for the effect of aspirin… the efficacy of aspirin for preventing a second heart attack. Now, the aspirin effect size is… I think it's .03. It's a very small effect size, and this is a Rosenthal's type of effect size. That was strong enough, based on tens of thousands of subjects and experiments, to have the FDA approve the use of aspirin for preventing second heart attacks, and so, in that case, no one seems to care that we're dealing with an extremely small effect size. And by the way, this is true for lots of pharmaceuticals that are accepted by the FDA. They're very, very tiny. If you think of this in terms of the amount of variance accounted for by the use of a drug, many drugs out there, that are being used, have far less than 1%, variance being accounted for, and yet, they're approved, because if you run enough subjects, you find repeatable effects. Well, the same logic applied to effects seen in telepathy experiments, and remote viewing, and mind-matter interactions. You get effect sizes which are typically much larger than these effects that we see for drugs. So it's discouraging that one of the criticisms that I hear, most often from science journalists, not so much from scientists, but science journalists, in fact, one just the other day said, "Well, your work is not considered mainstream and it's, in fact, not even considered scientific." And I said, "Well, why is that?" "Well, because the meta-analytic techniques that you use are not accepted by the mainstream." To which I say, "Well, that's going to be very surprising to a few thousand academics out there who are spending their careers using it." So you know, it's… the philosophical bias against believing in the possibility of these things make people view the same techniques as valid in one field, and yet not in another field. It's annoying.

Dr. Dave: Sure. Meta-analysis is certainly standard in psychology, where a reviewer will look at, say, 30 years of research by different experimenters and, as you say, do a quantitative analysis. And you've got a number of such analyses in your book, The Conscious Universe, and you also review a number of them in your Google talk.

Dr. Radin: Right. And in, also, my latest book, the Entangled Minds. Entangled Minds.

Dr. Dave: I haven't had a chance to look at that book. What's the focus of that book compared to the earlier one, The Conscious Universe?

Dr. Radin: Well, The Conscious Universe was written in '97… or published in '97, and Entangled Minds was published in 2006. And what I did in the interim is bring the state of the evidence up to date, as of 2006, applying both new studies and new meta-analytic techniques, because meta-analysis is evolving as well, to see well, where are we today as compared to then, and then about a third of the book is dealing with the issue of, well, if we accept that these things are true, then how do we begin to revise our understanding of

reality to allow it to be true? So the entangled part of Entangled Minds refers to quantum entanglement, which I propose as a metaphor for how we might start thinking about what kind of a universe can allow these things to exist.

Dr. Dave: Okay.

Dr. Radin: In other words, I'm addressing the theoretical side of the puzzle. Empirically, I think it's very clear that these phenomena do exist. To make it mainstream, you need a theory, which is at least somewhat persuasive, or at least acceptable, to begin to create the dialogue that most scientists seem to need in order to be able to even pay attention to these things.

Dr. Dave: Well, there are a whole range of phenomena kind of grouped under the idea of psychic phenomena. Are there certain ones that display the strongest effects? In other words, are there some that are much more empirically validated, and others that are much… for which there is very little or no validation?

Dr. Radin: Yes. Yeah. So the idea of macro-PK, macro psychokinesis. It's those things like levitation, bending metal, moving objects, that sort of thing, which is very popular in TV shows and in movies. The evidence for that is very poor.

Dr. Dave: Okay.

Dr. Radin: There's some anecdotal evidence. There is very, very little persuasive laboratory evidence that such a thing is possible. On the other hand, I've had first-hand experience at something that might be a macroscopic PK effect, namely metal bending, but it wasn't… the data is not under a controlled condition, so even though I had that first-hand experience, I wouldn't defend it very strongly, because we haven't been able to capture it in the laboratory. Now, capturing something in the laboratory automatically means that you're putting a methodological straightjacket on the very thing that you're trying to study, and you may squash it in the process, but nevertheless, it's useful because it allows us to exclude all of the mundane possibilities in understanding these things. So, that said, I would say that the … probably one of the largest effects that we see is telepathy, because it's relatively easy to demonstrate in a laboratory protocol. So telepathy is… there's good evidence for that.

Dr. Dave: Can you give us a number associated with that?

Dr. Radin: Well…

Dr. Dave: For example, you referred to aspirin as .01 efficacy or something like that. Is there some kind of metric that would…

Dr. Radin: Well, the standard, or the experiment that has evolved to become the standard method for testing telepathy is one where you select a target, either a picture or a video clip, which is part of a pool. So you might have a pool of four possible targets, one of which is randomly selected to be the target in a given session, and the other three targets are as different as possible from each other as you can make. So the sender, in the experiment, tries to send the selected target, and the receiver tries to describe it, and then they try to match it up later. And, of course, under double-blind conditions, so that the subject and the experimenter have no idea what the actual target is, and so, in that kind of experiment, you'd expect a 25% hit rate by chance, and what we see, after about 3,500 sessions like this, from about 20 laboratories around the world, is that you get a 32% hit rate, and that 32% is primarily with college sophomores. Unselected people, or people who are not claiming any special ability. So the 32% hit rate, where 25% is expected by chance, if you work out the statistics on it, you'll end up with odds against chance of more than a quintillion to one. It's actually… I forget the term. 23 octo-decillion to one. Something like that.

Dr. Dave: (laughs). Wow.

Dr. Radin: It's a gigantic number of odds against chance, so it effectively says that the probability of seeing 32% or more is basically zero. Something is going on here that allows people to select the correct target about one in three times, as compared to chance, which should be one in four times.

Dr. Dave: And you go…

Dr. Radin: So it's like a…

Dr. Dave: And you go on to point out that some people are more talented than others, that some people show consistently more talent in this regard, and that if you look just at those people, then the 32% becomes something else.

Dr. Radin: Right. If you select people who claim to have experienced telepathy frequently or creative populations, meaning musicians, dancers, artists, that sort of thing, or family members, typically siblings, who are emotionally bonded, or husbands and wives, who are emotionally bonded, you select out those kinds of people, and you have them do this test, or you simply take the existing database and you partition it, based on those kinds of people, then you end up with 50 to 60% hit rates instead of 32%. But the 32% is actually quite interesting because it means that, even in people who don't have any prior reason to believe that they may have telepathic ability, it's still there, which means this is almost certainly an ability which is true for everyone, all the time. In other words, it's not just these special populations of highly creative people or people who might think of themselves as psychic who have this magical ability. Instead, it's probably reflective of

something which is there all the time, for everyone, and the thing that makes the creative people different than the not creative people is nothing to do with psychic phenomena at all. It has to do with the way that they allocate their attention, or maybe the way their brain is constructed, or something like that. In other words, it's built into the fabric of reality.

Dr. Dave: Yes.

Dr. Radin: There's something that allows a form of connection between people, which is not a magical human ability, but more like a matter of physics, that is not apparent to the naked eye, but nevertheless, is still there.

Dr. Dave: Okay. Now, what about James Randi, the magician and noted skeptic, who has offered a million dollar prize to anyone who can demonstrate that there's… that any psychic phenomenon is real. If these effects are so strong, why hasn't somebody claimed the prize?

Dr. Radin: Well, Randy and other magicians have focused on individuals who claim to do remarkable things, and any one individual in any single test, it's very difficult to know with high certainty that you're going to get a good result.

Dr. Dave: Mm-hmm.

Dr. Radin: And, unfortunately, most of the people who apply for these tests are probably delusional, in that they think that they're 100% accurate. So they need mental healthcare.

Dr. Dave: (laughs).

Dr. Radin: The type of psychics that I've worked with, in the laboratory, basically never say that they're 100% accurate. They have a much stronger grasp of reality than somebody who thinks that they're 100%. In fact, the first red flag that always goes off in my mind when somebody calls me on the phone, and wants to be tested in the laboratory, is when they start describing a nature of their experience, and anybody who starts talking about extremely high reliability, I start thinking… I bring out my lists of psychiatrist friends, and we'll give them a… refer them to the doctor, because they need help. So the effects are real, certainly, in a statistical sense. On the basis of any one trial, or any one person, it's not such a gigantic effect. As I said, a 32% hit rate for the average population, against 25% by chance, is only a couple of percentage higher than chance, but we know that it's a real effect, based on large amounts of data. By the same token, somebody could say to Randi, "Well," – or any other magician – "I have a magic pill here that will prevent you from having a second heart attack." And so Randi says, "Well, I don't believe it. I'll give

you a million dollars if you can show that that's true." And so you hand him an aspirin, and you know…

Dr. Dave: (laughs).

Dr. Radin: Given the effect size of that, then well over 99% of the time it's not going to work. That doesn't mean it's not real. So…

Dr. Dave: Fascinating.

Dr. Radin: Another answer to this question is, I actually did the exercise once of figuring out how much it would cost to do an experiment that would give odds against chance of something like a hundred million to one, because I figured, nobody's going to risk a million dollar prize, even for odds against chance of a million to one. They're probably going to want more than that. So I said, "Okay, what would it cost, with a 32% hit rate, but 25% by chance, to do an experiment to give you a… with a power, say, greater than 99%, a hundred million to one against chance?" And it turns out it costs way more than a million dollars to do that. In which case, trying to go for such a prize, maybe you'd be lucky if you do it in the experiment, and it might work, but given that there is a way to calculate, with very high probability of being successful, and you figure you're going to get one chance, otherwise he'll ridicule you, it costs a lot of money, and that's one of the reasons why the scientific experiments, while, overall, showing strong effects, meaning strong statistically, the magnitude of the effects are not strong enough to be able to simply sit down in front of a bank of skeptical observers and say, "Okay, I'm going to perform a miracle now, and here it is."

Dr. Dave: Okay, well thanks for rising to that question. I think what you're saying makes sense to me. Now, earlier, you referred to the meditation study that you're working on right now, with the non-dual meditators, and you talked about expanding consciousness even into the future, and I suspect that you're referring to a methodology that you describe in your Google talk, as well as in The Conscious Universe, of presentiment studies.

Dr. Radin: Mm-hmm.

Dr. Dave: Maybe… and I guess presentiment would be a form of pre-cognition, right? Maybe you could kind of describe that methodology, and what the findings have been to date?

Dr. Radin: Okay. I came up with the word presentiment. I mean, I didn't make up the word. It's used in that sense before, but I applied it in a sort of semi-technical new word to distinguish it from pre-cognition. Pre-cognition is pre-knowing, being aware of

something in advance. Presentiment was pre-feeling, and refers more to the idea of a gut feeling or intuitive hunch, where you don't really have a cognition of what's about to occur, but you somehow feel something like a moment of impending doom or something like that, where you have a sense of it, but you don't know what it is yet. And I figured that, since a lot of my work involves psychophysiological tests, I wanted to find something which was Psychophysiology 101, that would not be considered strange at all, in terms of the mainstream, but just look at the data in a slightly different way. And so, what I came up with was to do an orienting test, to look at the orienting response, which is very simple psychophysiology. Basically, you have somebody sit down, you monitor some aspect of their autonomic nervous system or maybe their central nervous system, and then you have a stimulus go off, either at a planned time or at a random time, and there's a whole set of responses that are very well understood of what happens in the body when a stimulus captures your attention. And the only different I did in the presentiment test was, if we used stimuli like emotional and calm pictures, you know, of course, there's thousands of experiments looking at the emotional response to pictures… we did the same kind of design, except I looked at what was happening to the body just before the picture was shown. And this is not a case of ordinary anticipation, because the pictures are selected randomly, and so nobody knows, in advance, what picture is about to come up. So it's a peculiar form of anticipation where there will be some kind of anticipatory response, because you know, typically, that a picture is going to be shown, and you know that it might be scary or it might be calm, and so there's some kind of gearing up for seeing a stimulus, but the question is, do you begin to become more aroused or more activated before a highly emotional picture than you do before a calm picture? And that was a laboratory analogue of what people describe in daily life, which they might talk about as a gut feeling or as an intuitive hunch. So, in the real world, an example would be that you might drive a windy road, and there are a lot of blind corners on these roads, and you're always concerned about whether somebody might be coming and crossing over into your lane as you go around one of these blind curves, and so you have to almost imagine you can project yourself a couple seconds into the future every time you go around one of these curves to prevent yourself from being in the lane when somebody else has crossed over into yours. So sometimes… I spoke to a number of people who said that they do get a gut feeling that there's something wrong about this upcoming curve, and so they slow down, and sure enough, that happens to be the time when a truck has crossed over into their lane and is cutting corners, and if they had continued with their ordinary speed, they would have hit it head on. And I've experienced that myself. So this experiment is a controlled way of testing to see whether or not the body actually does respond a few seconds in advance to emotional events in ways that are different than a few seconds before calm events. And, as of last year, I was able to find, I think, 19 studies that were published using this paradigm. I did four of them, and colleagues did a bunch of additional studies like that. And of the 19 studies…

Dr. Dave: And these were colleagues in various countries, different parts of the world, right?

Dr. Radin: Right. And so, of those 19 studies, 10 were statistically significant in the predicted direction. So as they… as an experimental paradigm, that's an amazing replication right. I mean, I haven't done a meta-analysis on it yet, partially because the methods that are used are quite different in each study. These were conceptual replications. But, overall, it does strongly suggest to me that, unconsciously, we are extended through time a little bit, and if, at least in the laboratory, when you can create two different kinds of futures, one highly emotional that you're really going to respond to, and the other one very calm that you don't care about, then, under those conditions, you can actually see this effect with a fair degree of consistency.

Dr. Dave: Let me just ask you about that, because you say that there were 19 presentiment studies, 10 of which turned out to support the idea of presentiment, but why is that so impressive? If more or less half show something going on and half don't, don't those two cancel each other out?

Dr. Radin: Well, no, because the 10 that I mentioned were statistically significant. When you start putting on your meta-analytic hat, you suddenly become much less concerned about whether … about how to define whether a study is showing an effect or not, because, after all, there's nothing magic about the .05 level. It doesn't suddenly exist at .05 and doesn't exist at .06. So what I didn't say is, of the 19 studies, I believe that 18 were in the predicted direction, of which… no, no, 17 were in the predicted direction, of which 10 were statistically significant. So if you do a meta-analysis of 19 studies, of which 17 are in the right direction, even though a batch of them were unstatistically significant, they all add up and point in the right… in the same direction, that you end up with a wildly significant overall effect. So it doesn't… so no, it's not like you have, say, 10 significant in one direction and 10 significant in the other direction. That might balance out, but that's not the case.

Dr. Dave: What are some of the future frontiers for research? I'm thinking what if you were given a really large grant, and I'm not sure what a really large grant, to you, would be, but would a million dollars be a really large grant?

Dr. Radin: Yes.

Dr. Dave: Okay. So let's say you get a grant of a million dollars. How would you want to deploy that?

Dr. Radin: I would do a more expansive version of a study I'm actually doing right now, and it's looking simultaneously at two of the most fundamental problems in two different disciplines. In psychology, I'm looking at the hard problem, which is a problem of qualia,

or understanding the nature of how subjective awareness can arise in the material world. It's the fundamental problem in the philosophy mind and so, I guess, in some respects, also in cognitive psychology. What's the nature of subjectivity? And the hard problem in physics is the quantum measurement problem, which is very, very similar to the same issue in psychology. The quantum measurement problem says that there's something peculiar about the nature of measurement or observation that seems to change the behavior of a quantum system, and so how can that be? Again, you have the problem of, how can it be that something like subjectivity, the nature of consciously becoming aware of a measurement, change a physical system? So both of these hard problems are related to the ontology of subjectivity. It is… is our sense of awareness an illusion, somehow? Or is it real? Well, if you ask most people, their sense of awareness is not an illusion. It certainly feels real. And yet, it's typical to reconcile, in a world in which all of our instruments tell us that everything is made out of stuff, it's made out of matter and energy, and we don't see… we haven't found a meter yet, or a telescope, or a microscope, that can see consciousness. So I decided to do an experiment that addresses both of those questions in one stroke.

Dr. Dave: (laughs). Good for you! That sounds like you're rising to quite a challenge.

Dr. Radin: Yeah. Well, I figure it's…tackle the big problems, and maybe you'll learn something. It would help to have a million dollars to do this, but I'm doing it with the pittance that I have, and the way to do this is… or the way that I've chosen to do this is to look at one of the simplest ways of demonstrating quantum strangeness, and this is through the use of a double slit optical device, and the double slit optical device is, as Richard Feynman, the Nobel Laureate physicist said, that this simple system contains all of the mysteries of quantum mechanics, and it really does. This is Physics 101. I don't know… it's much easier to describe this using pictures than it is verbally, but I guess I'll do the best I can.

Dr. Dave: Okay.

Dr. Radin: The essence of this device is that you take a laser beam, and you shine it… you don't need a laser, by the way, but it's a convenient source of light. So you take a laser, you shine it at a series of two little slits, and these are really tiny. It's like each slit is 10 microns, ten billionths of a meter, across, and maybe the two slits are 100 microns apart from each other. And what it does is, when the light beam goes through it, it creates a diffraction pattern. As the light goes through each of the slits, it diffracts it. But the mystery here is that, when it goes through both slits, you end up with a diffraction pattern that looks as though light must be a wave, because the resulting interference pattern that you end up with looks very much like the waves are combining with constructive interference, in other places they have destructive interference, and so you have this

rippley pattern. Some spots have a light of light, and some spots have no light at all. Kind of a sine wave. Well, this leads people to think that light has a wavelike structure. Light is a wave. The problem is that if you do the experiment such that you stop down the amount of light going through the system, so that you can send one photon at a time, and by the way, this works with electrons and any kind of elementary particle just as well as it does with light, but let's say that you do it with light. You stop it down so you can measure that you get one photon at a time shot through this double slit system and, presumably, if light is made out of particles, since you're stopping it down and you're measuring one at a time it must be a particle, it will go through the slits in such a way that you'll still end up with an interference pattern. And so that seems puzzling, because how can you have one thing going through, presumably, one of the slits, and then coming out looking as though it went through both of the slits?

Dr. Dave: Yes. You would think it would go through either the left one or the right one.

Dr. Radin: Right. And, apparently, it's going through both, and so how can you have one particle go through both? And among other… there's lots of other ways of describing this and this experiment, but the essence of it is that the experiment shows that light has… not only light, again, but electrons and everything else, has two ways of being, two ways of being measured, either as a wave or as a particle, and the way that you see it depends on how you wish to measure it. That's the quantum measurement problem. How can you can make… whatever a photon is, you can make it appear like a particle or make it appear like a wave, depending on how you wish to observe it? So I figured that if, and of course, one of the nice things about this is that a respectable interpretation of quantum mechanics is that consciousness is unusual. It's not like the rest of the physical world that we understand, in that something peculiar about consciousness actually causes these quantum potential states to manifest in the actual state, the way that we measure it. There's something about consciousness that does that. So I did the following. I said, "Okay, let's assume that subjectivity is real. It's a real thing. We don't know exactly what its properties are, but our sense of awareness is not an illusion. It's something that is actually there, and let's make a further assumption that, whatever that is, it is capable of taking this virtual potential quantum world and making it manifest into the world that we experience." So, in order to test that, you take a double slit optical device, you have it just run continually, and now you create an experiment where, under counterbalanced, randomized conditions, at times, you'll ask people to take their mind's eye, which is purely subjective, and to imagine that they can put their mind's eye inside the optical double slit system, which is sealed. You can't see inside it, but it's in there. Actually to imagine that you can put your mind inside there and see the laser beam, and see the photons going through the slits, and just sort of see the whole thing as though you were clairvoyant somehow. And if you could do that, if it turned out that your mind's eye

actually was able to measure or to gain knowledge from this quantum system, that would cause a change in the way it behaves. It would no longer behave in a wavelike fashion. It would behave in a particle-like fashion. And so we created a system to do this, the optical double slit system, and a protocol, and I've run, now, a number of people through a protocol that asks them to repeatedly put their mind's eye inside the system, and then take it out, and put it back in, and take it out, back and forth, and the overall results give strong statistical evidence that, whatever the mind's eye is, whatever subjectivity is, it does have an effect on the physical world, and it has it in the direction that the interpretation of the quantum measurement problem would predict, namely that there's something about consciousness that collapses the wave function. That's the way a physicist would put it. Consciousness changes the quantum potential state into a manifest state, the way that we see the world in the everyday sense.

Dr. Dave: Is this something that you've published yet or not?

Dr. Radin: Well, I published, a couple years ago, a study using a very similar system. I used a Michelson interferometer rather than a double slit, but the essence of it is the same. The only difference is the… a Michelson interferometer, the two slits are essentially separated into two optical arms, and almost literally like the size of arm. It's a shape of, maybe, eight inches where the beam of light is split by a mirror, and bounces off of mirrors, and so on. It's an interferometer, but the essence of that experiment is the same as the double slit. The double slit happens to be much, much more sensitive, which is why I've moved to this new system, but yes, a few years ago, I did a study very similar to do this with a Michelson interferometer, and got results strongly suggestive, statistically significant, that there's something peculiar about the ability of the mind's eye to change a behavior of a quantum system. And I published that in terms of studying the nature of intuition, because, as I mentioned earlier, the traditional definition of intuition is the ability to gain knowledge, unmediated through the normal senses, and the curious thing about a quantum system is that the reason why a quantum system turns from a wavelike behavior to particle-like behavior is directly related to how much knowledge you have of what's going on in that system. It's… they're both related to something about gaining knowledge, and so this was a way of tying the traditional notion of intuition into fundamental physics. The latest theories of experiments is using an optical system, which is just much, much more sensitive than the Michelson interferometer, and I'm pleased that the results are also, so far, much stronger than I saw. I don't mean strong in terms of magnitude. I mean stronger in terms of the ability to detect that something is going on. The actual magnitude of these effects are extremely tiny, but the nice thing about using a – what amounts to a physics-based system – is that you're able to measure extremely tiny things to very high levels of precision.

Dr. Dave: Have you had your protocol evaluated by any physicists other than yourself (laughs)?

Dr. Radin: Well, the first paper is published in a peer-reviewed journal, not in a physics journal. The current experiment is still underway.

Dr. Dave: Okay.

Dr. Radin: And so I've sent it out to a half a dozen colleagues, some of whom are engineers, and some are physicists, and in fact, the people who helped me build the actual system were both physicists as well. And actually, the experiment is really not… while it is relevant to what a physicist is interested in, it's actually much closer to the kind of thing that a psychologist would do, so it probably helps that I have training on both sides, because I understand the physics part of it, but I also understand that a physicist probably would not go about doing this experiment in the way that I'm doing it, because I'm looking at the system as though I'm doing… as the though the double slit system, and also this is the way I did it with the Michelson interferometer… I'm imagining that I'm working with a psychophysiological experiment, and the reason is like this. If you're trying to study something subtle going on in the human body, the signals that come out of the body, like skin conductance or heart rate, they're wildly autocorrelated. They're absolutely not separate from the rest of the world, and so the statistics that come out, you can't easily apply to parametric tests. You can do that, but in the process of doing it, you typically have to collapse a huge amount of data, collapse monstrous amounts of data and try to smash it into a form where you can use the T tests, for example.

Dr. Dave: Yes, yes.

Dr. Radin: And you might have to massage the data with transforms, and do all kinds of hoop-jumping to get the data to behave. But the alternative is to do what I've done using… for at least 10 years now, which is a non-parametric test called randomized permutation analysis or otherwise called bootstrap analysis or computational statistics. All of these methods are ways of working with the raw data, but using computational methods to bootstrap what the actual population is, so you don't have to make any assumptions at all about what the underlying distribution of data is. You actually can calculate what it is. And once you calculate that underlying distribution, you can do exact tests, and then you don't have to make any parametric assumptions at all. You can come out with exact probabilities, even with data that this highly autocorrelated and has all the other problems in it that make parametric tests difficult. So this is fairly commonly used in psychophysiology now because it gets rid of parametric problems, and I used the same method in this double slit design, because the underlying signal is very much like… looks somewhat like a skin conductance signal, and the protocol takes… both the non-

parametric analysis and the design protocol takes care of the statistical issues that would otherwise be difficult to deal with.

Dr. Dave: Okay. Now, some people have speculated that consciousness is as fundamental as these various particles, that consciousness is a fundamental dimension of reality. Does this research somehow bear on that question?

Dr. Radin: I think it does, although it's… I mean, one way of thinking of it is that if consciousness is more fundamental than matter or energy… if matter and energy, or I guess you could start with just energy… if energy, as we understand it, arises or is an emergent property of consciousness, then consciousness would be at the bottom of the way that we hierarchically understand how things are stuck together, in which case, what I see in the double slit experiment should be expected. Consciousness is more fundamental than the photon, in which case, of course, consciousness would be able to push it around. And maybe that is the case. It's also convenient because it doesn't suggest the dualistic world. It's not as though consciousness and matter are truly separate things, but rather it becomes a mental monism, where consciousness really is at the way the fabric of reality is constructed, and the ripples in that fabric are what we see and think about as matter and energy, but the substance of the fabric itself is consciousness. So…

Dr. Dave: Well, this is…yeah, go ahead.

Dr. Radin: I don't know if… I have no idea whether what I just said is true or not, but it's a working model, and it's a convenient way of resolving all of the anomalies associated with consciousness, including psychic phenomena, mysticism, and all the rest of it, suddenly become understandable, and it does no violence at all to the rest of science, because the rest of science can start with matter and energy, and all the rest of it spins out perfectly well. The only place where you start bumping into a problem is in the neurosciences, which is kind of a neo-behaviorism approach, where the brain literally is the mind. Well, starting from an assumption that consciousness is fundamental, you would simply say, "Well, no. You made a category mistake, and you're assuming that the neuro-correlates are the same as mind, but actually that's not true."

Dr. Dave: Well, you're really drilling down here to the fundamental questions that confront us as human beings. What do you see as the future of parapsychology? Is there, in fact, a field of parapsychology, or is it really coming under the umbrella of other fields like physics, and brain science, and so on?

Dr. Radin: There is a discipline of parapsychology. It's the Parapsychological Association, which is the primary organization for scientists and scholars interested in this topic, has been a member of the AAAS, the American Association for the Advancement of Science, since 1969. So it's a bona fide scientific organization. Although, I've always felt, and I'm

saying this as being the president of that association four times, that any organization with the name "para" in it will eventually be absorbed by other disciplines or it will create a new discipline, but then it's no longer "para," because the "para" part of the name suggests that this is "other than", it's "beyond than," it's "different than" psychology. And there's also paraphysics. It's "different than." And you can't maintain a discipline on the basis of simply that it's being "different than." So my suspicion is, and we see this already to some extent, that some parapsychology is now being done under the name of complementary and alternative medicine. Some of it is being done in business studies, where people are interested in intuition. Some is done in physics, of the sort of experiment I just described. Some is done in psychology, under things like "Why do people believe in things?" And also the notion of schizotypal behavior, as schizotypy is the spectrum of ways of behaving. At the far end, you have people who are very low in schizotypy and are, in my view, somewhat dull and boring, and at the other end, you have people who are full-blown schizophrenics, and somewhere inbetween are people who have more psychic experiences than others. So each discipline is taking a piece of parapsychology and finding ways of accommodating the concepts. That said, I think that some aspects of parapsychology will remain for quite a long time, and that's the portion of it looking at a survival of bodily death, because there doesn't seem to be any discipline yet that fits – that that fits into very well, and there is evidence that some kind of survival persists, but it's a very, very difficult field to work in, and I expect that will be one of the main focuses that maintains a parapsychological association for quite a long time.

Dr. Dave: When you say there is some evidence, maybe you could just briefly recap that for us?

Dr. Radin: Well, the two… there's something like eight classes of evidence. The two main classes, as far as I'm concerned, are evidence suggestive of reincarnation in small children. This was primarily done by Ian Stevenson, a psychiatrist at the University of Virginia, and now carried on by a team at the University of Virginia and a division of perceptual studies. That program has been going now for something like 40 years or so. And the thrust of that research is that, sometimes, children, roughly around the age of four, plus or minus a year or so, will report that they belong to a different family. Like, a small boy, for example, might be talking about his wife and about his family that is not the family he's in. Cases like that, many, many cases like that, hundreds, have been studied in many different countries, and the thing which makes it quite interesting is that the stories that the children tell can later, through field analysis, going out and talking to people, some of what they say is strikingly true. It can be verified that a small child talking about his wife of a certain name, and he died in a certain way, and certain family members and so on, all these facts can be verified. And of course, the investigators' job is to make sure that the case was not planted in the child, they weren't told to say this, and

those kinds of things. And there are enough cases that suggest that, sometimes, children really just do have this information. So that's one class of studies. Another class is…

Dr. Dave: And then, of course, the challenge is, if you believe in telepathy, and precognition and these other phenomena, somehow it has to be disentangled from the possibility that the child has picked up this information, psychically, from living people rather than from a previous life, right?

Dr. Radin: That's true. That's absolutely true, and that's one of the reasons why this is such a difficult topic.

Dr. Dave: Yes.

Dr. Radin: And one of the reasons why the very earliest researchers in this field, when it was called psychical research, they were interested in the issue of survival, but very quickly, within a matter of a couple years, they realized that the second major class of evidence, which is mediumship, was deeply entangled with the whole notion of telepathy.

Dr. Dave: Mm-hmm.

Dr. Radin: And so this started back in the 1880s. What we currently see as laboratory tests of telepathy, to see whether it's possible for one person to get information from another mentally, and now that we know that it is, it just makes the problem worse, because how do we disentangle what a medium says from the client? So, within mediumship research, there is a number of contemporary papers published looking at double-blind, triple-blind, quadruple-blind studies trying to get at this issue of, first of all, does what a medium says, if it actually pertains correctly to the client that they're studying for, and not to just people in general, and the answer there is that it looks very much like mediums do get real information. And then, the second issue is, well, where are they getting it from? And that's where the tricky bit starts. So we don't have a good answer to that one yet. A third class is near-death experiences and, of course, they're related to out-of-body experiences, which suggest that the brain and mind might not be as tightly coupled as people think, and then there are a couple of other categories as well. The preponderance of the evidence across many categories suggests that something appears to survive, which is kind of like personality, as we understand it. What… the problem with all of the evidence is it ultimately devolves down into somebody's experience, a medium or a child's experience in reincarnation studies, or somebody's experience, and so we know a fair amount about psi in the living, now, through all these experimental studies, and so far, we don't know anything about psi in the dead, so we don't know if the dead are alive, in some sense. We only know that the living are. So this is an ongoing puzzle, and very few people are engaged in this question, and it's like a super-taboo, in that the study of psychic phenomena is… you hardly find it in academia within the United States, although

you do find it in the UK. This is something you don't study. Now, you take the next step into survival of bodily death, of which is arguably one of the most important things that every one of us is interested in, nobody studies that. So that… I mean it's, purely from a psychological or a sociological point of view, it's really interesting that the question of which we're most interested in, ultimately, is the one that is absolutely not studied, except, as I said, by about five people, who are actively engaged in trying to do experiments to figure out what's actually going on.

Dr. Dave: Hmm. You know, that makes me wonder about India, as a country that turns out a lot of engineers and is very strong in science, you would think that, culturally, maybe, scientists in India might be really positioned to study questions like this.

Dr. Radin: You'd think so, wouldn't you?

Dr. Dave: Yeah, (laughs). But it's not happening, I gather?

Dr. Radin: No.

Dr. Dave: Uh huh. Well, as we begin to wind down here, and you've been very generous about your time, I know that you also have training as a classical violinist.

Dr. Radin: Mm-hmm.

Dr. Dave: Which is fascinating. Has your musical training, in any way, do you think, informed your work as a researcher?

Dr. Radin: I think it does, but I think probably more so in that, since I started at about age five, and played all through my developmental years up to about age 25, a couple of hours a day practice, I calculated once that the total amount of practice time was well over 10,000 hours, which is that magical number that neuroscientists use now to describe the level at which you can achieve mastery over something.

Dr. Dave: Yes.

Dr. Radin: 10,000 hours of practice. Well, the mastery, in this case, is reshaping the brain, and it's rewiring how the brain works, and I think there's something about… well, I also grew up in an artistic family. There were no engineers, or scientists, or professors in my family at all, and I wasn't even necessarily attracted to that line of work, but there was something about the non-fretted stringed instrument, in particular, among all instruments that you could play, which does something strange to the brain, because you have to do … you have to learn fine motor control in both hands simultaneously, you have to do pitch training at the same time, and you have to pay attention to the music that you're reading, and it all has to come together in a way that sounds pleasing. And so for… on

my practice stand, for 20 years, I had a bumper sticker which said "Learn to listen." So besides all of the practice, this was a constant reminder. Learn to listen. Learn to listen. Thousands and thousands of hours with that right in front of me.

Dr. Dave: Wow.

Dr. Radin: And it's because the teachers, any violin teacher, of course, the horror of the teacher is listening to the intonation, and some kids get it, and some kids don't, and if you can't listen to what you're doing, you have no way of using that as biofeedback to correct what's happening. So imagine, just from a neuroscience point of view, that what's going on in the brain is that the corpus callosum gets really rich. You're connecting portions of both hemispheres that are necessary in order to be able to do this instrument correctly. And I have to say that, among my peers, the people I know who are musicians, especially stringed instrument musicians, they think… I mean, they're kind of like me in the sense that they have no problem at all with the reality of things like psychic phenomena, because it's part of their life.

Dr. Dave: Fascinating.

Dr. Radin: And, by contrast, people I know who may be mathematicians, or not so much mathematicians, because that's a whole other issue, but more like engineers, people who are very sensory oriented and don't have to worry too much about things like artistic creativity and intuition, they find it very, very difficult, extremely difficult, to accept that something like psychic phenomena can be true, because it's totally not part of their experience.

Dr. Dave: So I gather that psychic phenomena were part of your experience. Was that what drew you into researching this field?

Dr. Radin: No. I actually, as a child, actually not even until I'm an adult can I remember anything that I would consider to be psychic at all. No. It wasn't that I had any psychic experiences. It was, I think, more about learning to be in the world in a different way than, perhaps, other children are, who are not involved with 10,000 hours of learning to listen.

Dr. Dave: Sure. So what was it that drew you into this line of research?

Dr. Radin: Intellectual curiosity.

Dr. Dave: Uh huh.

Dr. Radin: And probably a little bit of rebelliousness against authority.

Dr. Dave: (laughs).

Dr. Radin: If I had to psychoanalyze myself.

Dr. Dave: Yeah. I can relate to that. And I also heard that you're now a bluegrass musician. Is that right?

Dr. Radin: Yeah. When I stopped playing the violin, I did so because I decided I couldn't both be a professional musician and a scientist at the same time. I couldn't devote the amount of time necessary to do both equally well. So I decided I didn't want to stop playing, so I switched into, first, bluegrass fiddle, which took a while to learn how to play improvisation, and also to not play perfectly as you do when you're a classical violinist.

Dr. Dave: Right.

Dr. Radin: But it was much, much more fun. I mean, I could step out of a classical violin and into a bluegrass fiddle, and play better than any bluegrass fiddler out there in an instant, except for having to learn about improvisation and the sound. Getting the sound right took a while. But the playing of it was easy, and it was fun, as opposed to a lot of classical work, which is work. So, after I started playing the fiddle a while, I realized that I really liked the Scruggs-style banjo, the bluegrass banjo, and so, just on a lark, I picked it up one day and asked the banjo player in the band I was playing with, "Well, how do you do this?" Because it's all about the rolls with the right fingers, and he showed me, and to my surprise, I picked it up almost instantly, and within a month I was playing at a professional level with the bluegrass banjo. And the reason, I think… afterwards, I tried to figure out, well, how could I pick this up so quickly? It's because there's something about the left-hand learning and the fingerboard of the violin that translated almost immediately to the right hand, on the banjo, which is where all the complex finger action is happening. It just, somehow, something about the training on the left hand transferred to the right hand, and I was able to do it right away. And that's even more fun that to fiddle, so I tend to focus more on bluegrass banjo.

Dr. Dave: Are you part of a group?

Dr. Radin: I haven't played in a group for many years. So I play now by listening to music, Music Minus One, with the banjo, so I'm the banjo, and I have a backup team that is at my beck and call on my iPod.

Dr. Dave: (laughs). Oh, great. Great. Well, this has been absolutely fascinating, Dean. I really want to thank you. Is there anything I haven't asked you about that you'd like to say before we wrap up here?

Dr. Radin: Well, just to give a plug for Sonoma State as one of a very few universities in the United States that entertains the possibility that these things are not crazy, and even more

so, that maybe a faculty member could actually get tenure in publicly expressing that they think there's some value to this topic. That is so rare that it's just astonishing.

Dr. Dave: It's true. I feel very privileged to have been on the faculty there, to have achieved tenure, and to now be retired and emeritus, which I think maybe means something like full of merit. At least, that's how I like to think of it (laughs).

Dr. Radin: Well, it's true. It's not only full of merit, but still a professor. Professor emeritus, so you're able to profess your merit.

Dr. Dave: Right, right.

Dr. Radin: And actually, doing it through the Shrink Rap podcast is a perfect way of doing that.

Dr. Dave: It really has…

Dr. Radin: Professing merit.

Dr. Dave: Yes. It has been for me. This really feels like the fruition of my life as a psychologist. Well, Dr. Dean Radin, thanks so much for being my guest today on Shrink Rap Radio.

Dr. Radin: My pleasure.

Dr. Dave: I hope you enjoyed this interview with Dr. Dean Radin, and if you're a skeptic or on the fence, I'm hoping that you'll get his latest book and examine the evidence for yourself. Every now and then, I find I need to be reminded of it, and overall, I find it pretty persuasive. By the way, if you haven't heard my interview with Dr. Stanley Krippner, way back on Shrink Rap Radio #30, it's an excellent companion piece to this interview. Something I meant to take up with Dean in this interview, but didn't get around to, is my sense that I'm psychic in relation to machines. I'm not sure if I've mentioned that here before or not. With his engineering background, I thought Dean might be particularly interested in and open to my notion that I have some sort of psychic connection with machines. I'm just good at working with electronics and machines in a way that makes me feel like I have a sixth sense about them. This happens so frequently that I don't bother to write them down or anything, but there is one example that sticks firmly in my mind. Some years ago, I was visiting my friend, Charlie Merrill, who, incidentally, I interviewed on Shrink Rap Radio #117, and also had lunch with this very day. At any rate, I was visiting him, and he happened to mention that his clothes dryer was broken. I said, "Oh, let me take a look at it." Now, I'd never worked on this particular dryer or one like it. It wouldn't turn on. The drum wouldn't go around. So there are any number of things that could result in the lack of electrical activity, such as a

burned out motor, or a burned out timer, and so on. However, I also knew that these things turn off when you open the door, that there's a little microswitch that the door presses against when it's closed, and that when you open the door, it releases a little button that microswitch that breaks the circuit that causes the drum to go around. Well, I had a clear mental image that there must be such a switch inside this dryer, and that one of the wires connected to that switch had fallen off. It took quite a bit of work to get the various panels off the dryer so that we could get into it to check out my hypothesis, but when we were finally able to get into that part of the dryer behind the door, my hunch was verified. A connector had fallen off the switch terminal. All I had to do was slide the connector back onto the little lug, and the dryer was fixed. Now, how psychic is that? My friend, Dale Ironson, likes to rib me about a story from when I was in graduate school and I was doing an internship at a VA hospital in Ann Arbour, Michigan. I received a rather kooky, crackpot sounding letter there from some woman I didn't even knowing purporting to be a psychic, and she felt the need to write me and tell me that, in the age of Atlantis, I had been a maker of robots, and that my karma in this incarnation was to treat people less mechanistically and to work with people. Now, I pretty much dismissed this unsought after commentary, but my rapport with machines sometimes causes me and my friend Dale to wonder. Yikes! I just looked at the clock and realized that this podcast is running longer than any prior one. I really wanted to get as complete an interview with Dean Radin as possible, so I just let it run. I'm going to keep the rest of my remarks quite brief and skip the reading of listener emails. This is Shrink Rap Radio #197, and you know what that means. #200 is coming up very, very soon, so please send those audio congratulations that I can play on the show using my voicemail on Skype, or MyChingo, or our phone at #206-337-0622, or by sending me an mp3 file via email. Please remember to spread the word about Shrink Rap Radio to your friends, classmates, colleagues, parents, kids, and so on. Also, for those of you who are relatively new to Shrink Rap Radio, let me remind you that all 197 shows are available both on the Shrink Rap Radio website, and in the iTunes store, where, in addition to the main feed, you'll find several archival feeds for back years. Remember, Shrink Rap Radio is supported by your kind donations and your patronage of our sponsors using the discount links on our site for GoDaddy, PetMeds.com, Brookstone, and Budget car rentals. You'll find a big green donate button on our site, along with links to our sponsors. I was always a dog person, but now we have a cat, or perhaps I should say a cat has us. If you have a pet, you know that their medications can cost you a bundle. Now, you can automatically save 10%, plus get free shipping on orders over $39.00 by following the PetMeds link on our page at ShrinkRapRadio.com. Well, in the interests of time, I think I'd better wrap it up for today. You can send your emails to me at shrink@shrinkrapradio.com, and you can also leave comments about individual shows on the comments area on the site, you can leave voicemails on Skype or on ShrinkPod, you can leave voice messages using the MyCingo button on our site, and you can leave voicemail on our phone at #206-337-

0622. Thanks to my guest, Dr. Dean Radin, for sharing his own research and that of others in the area of parapsychology. At this point, I'm not sure who my next guest will be. I've fallen behind on my invitations and will have to get on the stick, but until next time, this is Dr. Dave saying, "It's all in your mind!"