Shrink Rap Radio #311: Synchronicity and the Interconnected Universe

David Van Nuys Ph.D. Interviews Dr. Joseph Cambray
(transcribed from www.ShrinkRapRadio.com by Jeremy Devens)

Dr. Dave: My guest today is Jungian analyst Dr. Joseph Cambray and we'll be discussing his very authoritative book on synchronicity. Joseph Cambray PhD is president of the International Association of Analytical Psychology. He's the former US editor of the Journal of Analytical Psychology and he's a faculty member at Harvard Medical School center for Psychoanalytic Studies at Massachusetts General Hospital Psychiatry Department and adjunct faculty at Pacifica Graduate Institute. His publications include the book of his lectures, Synchronicity: Nature and Psyche in an Interconnected Universe and a co-edited book Analytical Psychology, as well as numerous articles. Joe is a Jungian analyst with practices in Boston and Providence, Rhode Island. Now, here's the interview.

Dr. Joseph Cambray, welcome to Shrink Rap Radio

Dr. Joseph Cambray: Thank you, I'm glad to be here, it's my pleasure.

Dr. Dave: Yeah, and I'm glad to get you, because I know you're a globe trotter, and you've sent me emails from abroad and I think you've just been all over the place. It's so good to have you on the show, I've been very interested in synchronicity, both personally and professionally, and have recently done several interviews here on that topic, and it was only recently that I learned about you and your book, and with your book I feel like at last, I've found the mother-load on synchronicity (laughs).

Cambray: (laughs) Well thank you. Let's see if together we can join in a deeper understanding of it.

Dr. Dave: And I should hasten to mention that the title of your book is Synchronicity: Nature and Psyche in an Interconnected Universe, which, in a way, tells the whole story.

Cambray: (laughs) Yes.

Dr. Dave: But before we get into synchronicity, I'd be interested to hear more about your background. I gather you were a scientist before becoming a Jungian analyst, do I have that right?

Cambray: Yes, that's correct. Before I trained as a psychologist I was a theoretical chemist.

Dr. Dave: That's amazing!

Cambray: Actually, in the Jungian community, there are... We tend to be a little bit older community and people often turn to Jungian analysis later in life, so the people are often coming with a 'first career' and a couple of different disciplines.

Dr. Dave: Yes. At what point in your life did you learn about Jung?

Cambray: During my undergraduate years I took some psychology classes, and there was just a little bit on his theory of the collective unconscious and so forth, that I found... Intriguing, and later on, as I had a little bit of time to explore, I was interested in the history of science, and, as a chemist, the turn towards alchemy was a natural place to look for the background of ideas, and then again, I found myself at an interface with Carl Jung, because he was one of the real masters of the psychology of alchemy.

Dr. Dave: Yeah, and it's interesting to learn about your early interest in the background of science and the history of science, because that really runs throughout your book. What drew you to that next step of becoming a Jungian analyst?

Cambray: Well that was a complex detour on my part. I had finished a PhD and then a post-doc, and it was in the fields of science, and I was uncertain about whether or not to pursue a tenure-track position in

chemistry at that point, so I took a couple of years to travel to Japan, I was there as a visiting scholar to a university, and in that capacity, I began to do a fair bit of Zen meditation. That opened up a lot of gray material that ultimately led me back yet again to Carl Jung and his theories. That's the point at which I felt that what I was internally discovering for myself needed a more full investigation and commitment, so that's, I think, the defining switch for me to head in the direction of training in psychology and then Jungian analysis.

Dr. Dave: Wow, what a fascinating background, and you're nothing if not committed. (laughs) That really comes through in your book

Cambray: (Laughs) Yeah, intensity seems to be one of the things in my life.

Dr. Dave: Yeah. So, we talk about 'the call,' in terms of Jungian psychology and Joseph Campbell. What called you to write this very scholarly book about synchronicity?

Cambray: There are two strands, first was the clinical experiences that I had, starting in the late 80s and into the early 90s, I had a number of patients who had fairly severe trauma histories, and this sort of event, what Jung would have called synchronically, seemed to be a common feature of a number of these cases, and I felt I needed to have a fuller grasp on... A clinical understanding of these events. Then the parallel, and perhaps good fortune at that point, was the work was being done at the Santa Fe Institute on consciousness studies, and these are the people that really spearheaded the movement into complexity theory and emergence, and for the first time I found, in reading their work, a link between my scientific background and the psychological interests I had, so that's where the marriage of these two began to come together, and why this book in particular had a passion, for me.

Dr. Dave: Great. Of course, I'm wondering if there were synchronicities in the process of writing this book.

Cambray: (Laughs) indeed, there were a couple of strange ones. It's curious how these things cluster. When I wrote the first paper, I was wrestling with the whole question statistics... The idea of coincidence when you look at very large numbers, the coincidences are to be anticipated and expected. So, this was in the time shortly after 9/11, and I had to fly to Paris. Two things happened. I was in Paris for some meetings and I was talking with a friend and colleague, Murray Stein about synchronicity from my ethical point of view, I was interested in the ethics of synchronicity and some philosophical questions. We were in the midst of that discussion and talking about perhaps arranging a conference on some of these topics, and he asked me if I thought of anyone in particular who might be a bridge-person, especially with the psychoanalytic community, and I had recently had some conversations with Ana-Maria Rizzuto who wrote a book Why Did Freud Reject God? and there are a couple other books of hers which are quite good. I was telling Murray this, we were having coffee and I looked up and there was Ana-Maria Rizzuto walking down the street.

Dr. Dave: Of course (laughs)

Cambray: And I stood up and said hello to her and introduced her to Murray. I must admit, she looked at me as if, it seemed like, she'd seen a ghost. She said, "What are you doing here?" and I said, "I'm here seeing some colleagues." She was, herself, teaching at the French Psychoanalytic Institute at the time. We had no notion that one another was in town. I think the chance encounter on the streets of Paris, where both of us were there for a very short window of time was particularly meaningful to both of us. Then, on the flight home... It was a very large plane, but, of course, at that time nobody wanted to fly. So this jumbo jet had about 70 people total on it. I was a little (annoyed), because I was put next to someone, and I had a lot of work to do, and I was trying to make my way through a lot of written material that I had to process. The young man next to me was quite charming, and he kept chatting with me, so finally I set my work down and I just decided I would engage with him. It turns out he was a mathematician, and the person that I'd been working on...the research I'd been working on... Persi Diaconis and

Fred Mosteller had written this paper on Synchronicity and Statistics and it turns out the man sitting next to me, his roommate had just gone out to work with Persi Diaconis at Stanford. (Laughs) So we had a conversation about the coincidences that were occurring in the context of this flight back from Paris to the US. There are more complications to it, but it gives you the feeling of the kind of clustering that starts to happen.

Dr. Dave: Yeah, definitely. I'm fascinated by the fact that you were looking into statistics, because most "tough minded scientists" dismiss the idea of synchronicity with an appeal to the statistics of large numbers. I take it that you are not persuaded by that critique.

Cambray: Well... It's complex, because I think, in some ways, it's the paradigm that you're using. I actually had a conversation about this with several statisticians. It seems to me that it is the descartesian move that they make when they do that. That is that the mind is separated from matter and that matter behaves statistically and mind acts with a kind of different framework. If you don't start with that premise, then I think the statistical argument becomes more difficult. Jung, when he originally wrote the synchronicity essay, in his discussions with Wolfgang Pauli who was really his co-author in some of these things, they had long discussions about the question of statistics, and both of them felt that statistics were not applicable to unique events. That statistics are really only about large numbers of things, and that if you're framing coincidence within that perspective, what you wash out is the actual unique individual quality of the event, and statistics can't deal with that. So I think it's a question of one's understanding of statistics, and the limitations of it, rather than simply discarding them.

Dr. Dave: Okay, thank you.

Cambray: (Laughs)

Dr. Dave: We're going to be challenged to get through your book. I'm hoping that we can touch on all five chapters in the time that we have

together. Chapter 1 is titled "Synchronicity: The History of a Radical Idea," and a very fascinating history it is, indeed. I was impressed by the way Jung was so earnestly struggling to integrate information from so many different sources; from his own boyhood, from the classical Greeks, from the alchemists, from the Chinese Taoist philosophy, from theology, from JB Rhine and from some of the leading physicists of his time including Einstein and David Bohm. So this was not a casual notion on his part, but one that he was really struggling with earnestly to put on a solid theoretical footing. What can you tell us about that quest?

Cambray: Well, what's happened since I've written the book, is the publication of the Red Book. I have found that to be really crucial to my understanding of why this was so central a text for Jung in his later life, the synchronicity text. If you'll permit me just a little bit of background there. He starts the Red Book basically out of a set of very powerful experiences he has in 1913, after he's severed ties with Freud, and he has moved into private practice, and he has a set of visions, waking visions, that disturb him terribly, about Europe filling up with blood, and he is anxious that he is "menaced by a psychosis," he wrestles with what's happening in this eruption of unconscious psychic material in himself, and this is where he takes the defining moment and enters into this, in a direct experiential way; his techniques of active imagination and even amplification largely come out of this period of about six months of self exploration. He comes out of it in April and decides he has to really change his life. He quits his position at the University, he resigns as president of the Psychoanalytic Community, and really begins to go his own way. He's still very trouble by his own internal state, and what's happening to him, even though he's having a sequence of dreams by June of that year that are indicated that he is going through a healing process. Then he feels that he reaches great relief on August 1, 1914 because, of course, World War 1 breaks out, and he feels like "oh, this was an objective event, what I was experiencing wasn't just a personal event."

Dr. Dave: A-hah.

Cambray: But the truth of the matter is he's caught in a dilemma; is it personal madness or is it prophecy? Neither one of those is terribly acceptable to him. He doesn't want to see himself as a prophet, or particularly insane.

Dr. Dave: (Laughs).

Cambray: So he wrestles with this, really on and off until 1928, and it's really what he gets from Richard Wilhelm, the manuscript for The Secret of the Golden Flower, and he has a synchronistic event occurring at that time, where he had just been doing some drawing for the Red Book and it's a golden castle. In his drawing, even in his private journals, he writes that it has a curiously Chinese feel, and he doesn't know what to make of that. Shortly after he receives this manuscript from Wilhelm in the mail and he realizes, pictorially, he has a very similar image, and there's a confirmation suddenly from a completely unexpected source of the internal experience that he's having.

Dr. Dave: Wow, I didn't know that. That's great.

Cambray: Yeah, it's wonderful set of stories, it's really how the Red Book closes, with that movement. What I've come to understand, if you look in 1928, he also started for the first time use the term synchronicity in his private teaching, then in 1930 he first uses the term publicly at Wilhelm's memorial service. What I think is going on there, psychologically, is that the dilemma that he has had between madness and prophecy is now transcended, he has a third way of looking at it, that there is a kind of objective intuition that can be studied from a scientific perspective, what he tries to label synchronicity. He doesn't have the full scientific apparatus to bring that to bear, but he now has a philosophical position from which to get out of his dilemma by transcending it.

Dr. Dave: Yes. Now the word synchronically suggest to me simultaneity, am I right that this issue of time is something that Jung struggled with, and how did he resolve it?

Cambray: I think he mis-stepped a little bit, you're right, he at first was talking about the simultaneity, because I think it was the appearance of things that juxtaposed that caught his attention, and he gives some clinical examples like the woman he's doing analysis with and she's rather stuck, and she has a dream of a golden beetle piece of jewelry, and at just that moment a beetle shows up at the window.

Dr. Dave: Yeah

Cambray: And "here's your beetle" (Laughs). That's the kind of simultaneity he was thinking of, but I believe when you look more carefully at the project, you can't stay in linear time it that simplistic way. That's why I've begun to look more and more at an emergent model, rather than synchronicity, because you get caught in this thing, and even something like a precognitive dream would not work because in that way you're having the time displacement go on; you've dreamt at night, and it's a day or two days or three days later that you find the reality. So, they're not happening simultaneously, unless you talk about a very Einsteinian world where space and time have been warped very significantly, and Jung didn't work that out, so I'm less comfortable with the Chronos side of this.

Dr. Dave: Yeah, in fact, one of the things you say in the first chapter is that Jung lacked the background in physics and math to firmly establish what he was intuitively reaching for.

Cambray: Yes, absolutely, he was a much better biologist than he was a hard-scientist in the sense of math and physics. That's where he had Wolfgang Pauli who I think guided him one hand, and probably also pushed him a little bit, perhaps prematurely to publish this, because, you know, they decided to publish this, if you read the letters between Jung and Pauli, that correspondence is available now, you can see that Polly is pushing to have this material disseminated, because he feels it's part of the new physics that he's so involved in. I think, for Jung, the pressure came because he just had two heart attacks in the 1940s, and I think he was really feeling the press of time for himself, and the opportunity for

he and Polly to put something out, I think he was a limited time window for himself. Ironically, of course, Polly dies first.

Dr. Dave: Here's a passage in the first chapter that really struck me. You write "Behind the theory of correspondence, Jung locates the classical worlds notion of the sympathy of all things. In this he turns to the Greek physician Hippocrates" and then you quote Hippocrates, and it was this quote that really struck me, "There is one common flow. One common breathing. All things are in sympathy. The whole organism and each one of it's parts are working in conjunction for the same purpose. The great principle extends to the extremist part, and from the extremist part it returns the great principle to the one nature; being and not being." Wow. That goes back to the Greeks and, of course, you mentioned Zen earlier, it also is very suggestive of eastern insights.

Cambray: Yes. I think that there is an awful lot of parallels and correlations and, in fact, that's one of the values of Jung, that he serves as a kind of linchpin or link between some of those philosophical traditions.

Dr. Dave: This notion of everything being connected also relates to the archetypes, and whats referred to as the psychoid archetype. Can you help us to understand it?

Cambray: Well what Jung was looking at, what he was trying to describe was something about the relationship between mind and matter. He was a monist in that sense. He didn't think that mind and matter were two fundamentally separate things. The psychoid was an attempt to say that if you follow the psyche down, I mean obviously, you get to the psychosomatic realm of experience fairly quickly, you know, if you're doing medical work, the mind body relationship shows up in illness all the time, so already you can see that psyche is influencing soma and soma is probably influencing psyche. He's looking to get to the point where those two things blur and blend into one another, so that matter starts to have some psychological-like properties, and the psyche seems to have a kind of substance in the world. That was the fundamental idea.

I think, behind it, or deeply for me, I've gone more and more in the direction of what Jung was trying to do was kind of a cosmology here.

Dr. Dave: Yeah.

Cambray: I really think what he's after is... I'm interested in the question of origins, so if you look at things like the big bang and so forth, of course energy and matter are not separate at the very first instant, it takes... As the universe expands in those first very, very... Minuscule amounts of time, 10 to the minus 42nd of a second lets say, nothing is distinguished in that, and then in the next, about 10 to the minus 32nd of a second, you start to get things like gravity being a separate entity from the other forces in the universe, and as you get a series of breaks, as things break out and emerge as properties, the very tendency to form patterns itself seems to be a fundamental property of our universe, that is that things, when you break... When you break a bit of symmetry and things become more complex and you have different parts that are forming, out of that, you get this sense of emergence. That tendency for the symmetry breaking pattern formation itself is, I think, what the psychoid is.

Dr. Dave: And that has something to do with the birth of the archetypes, in a sense.

Cambray: Yeah, I think it is the sort of engine behind which the psyche itself will eventually come into being, and with it, the differentiation into archetypal patterns and so forth.

Dr. Dave: Okay, and moving along, Chapter 2 goes more deeply into the interconnectedness of everything, and reviews the nascent field theory, and ideas of holism, which provided a kind of background influence for Jung's thinking on synchronicity. Maybe you can just tell us a bit about that transition of field theory and wholeness.

Cambray: Yeah. I'm interested, in this sense, in the different strands of science. With the rise of the scientific method in the seventeenth century,

and the work, especially, of Newton. We moved very quickly to a reductive model, and that has enormous explanatory power. The alternative traditions that were more about looking at the gestalt of the whole were much more difficult to describe mathematically, in fact, they still are very difficult to put into any kind of precise language.

So, for centuries, the reductive model held sway, but in the nineteenth century, there was a recurrence of the interest in things that seemed to be interacting at a distance without any obvious intervening material or force. Of course, electricity and magnetism were the two first fields that were discovered by scientists, and when you start to move into things like electricity and magnetism, you don't have the discrete particular form that you have in, say, an atomic theory, you have fields of force. So you begin to look at a holistic set of interactions of everything that's in the field, everything is then connected through the field. So this is not just a sort of a New Age form of a holism, it's a kind of hard scientific evidence that began to evolve, it goes from the discovery of electricity and magnetism and their interrelationship on to Ferriday and Maxwell and his equations on to Einstein who was probably the greatest field theorist. When you get into the twentieth century with Einstein and quantum mechanics, then you start to have some very interesting fields because quantum particles don't behave in a simplistic either reductive particle or a 'wholly field model' which is kind of a wave model, in fact they seem to depend on how you set your experiments, you end up seeing either or both properties.

Dr. Dave: You also talk about religious convictions that some of these early scientists had, and how, you know, we talk about how the observer impacts the observed, and I was really getting a feel for that in this chapter when you talk about the impact of holistically oriented religious convictions on early science and philosophy. For example, you talk about Newton's intense involvement with alchemy. (Laughs) I never heard that, that Newton was an alchemist, to some degree, and Leibniz' conviction that all the monads in his system had to mirror all the others in order to fit his notion of a balanced universe.

Cambray: Yes, we actually know that Newton wrote much more on alchemy than he did on physics. There's Betty Jo-Teeter-Dobbs and Harvard produced several books; The Hunting of the Green Lyon and The Janus Face about Newton's alchemical work. It's a tradition that's just now beginning to get recovered. Just in the last 15 to 20 years people are beginning to really study more carefully the biographies of these scientists, and these were the things that were left in the shadows, but in fact, there's far more evidence of these early pioneers having more complex interests

Dr. Dave: That's really fascinating, because I think myself, and I suspect many others, when we start talking about the alchemists, they just seem really sort of quaint and outmoded, you know?

Cambray: In terms of a literal theory of matter, it's not very effective. However, as something that held a folk notion of transformation, I think then it becomes extraordinarily interesting. Up until the contemporary world, the idea that things could be transformed and transmuted, one into the other, was a projection of one's psychological needs on to the world.

Dr. Dave: So I'm getting the impression that it's not just the observer influences his observations, but also, perhaps, all of science is pervaded my intuitive archetypal idea, you know what I mean?

Cambray: Absolutely, and there are some historians of science, and some rather renowned ones, who are looking more at the psychology of the discovery, in fact, how could any one really be outside of their culture, outside of the kind of imagination of their world. Some of them help us transcend that, but the metaphors that they use are drawn from the world that they live in. Therefore, at least as a psychologist and as a Jungian, I would say that there are archetypal determinants that sort of give energy to the choices, they lend a sort of psychological intensity of interest.

Dr. Dave: Yeah, there's a way in which that makes sense to me. I've long thought that the way that they teach us about the practice of science is somehow idealized, you know, they paint it as scientists being totally objective, and they test their hypotheses, and if the hypothesis doesn't work out they reject that idea. It seems to me that, in practice, what happens is, the great scientists at least, have a tenacious conviction about what is going on, (laughs) really, and they just keep at it and keep at it, despite all kinds of disconfirmations, until they figure a way and validate what they intuitively grasped to start with.

Cambray: Yes, that's often the case. There are a number of Nobel laureates that have been interviewed on the use of their imagination, how they found their way into their subject matter. The way Einstein as a boy would imagine riding on a light beam, and this becomes the motif for his entire scientific career later. It's curious how even as children sometimes they have these great intuitions that carry them throughout life. The other thing, in the last chapter, it's the role of serendipity in scientific discovery that also is extremely important.

Dr. Dave: Yes, and I want to ask you about that when we get there.

Cambray: Okay.

Dr. Dave: You point out how this idea of interconnectedness in everything has roots and keeps popping up; from Indra's Net to Leibniz' Monads. Can you briefly sketch out those two, because everyone might not be familiar with them.

Cambray: Sure. What I was looking for, historical analogies to some of these field concepts. I was very struck. I have some interest in the East and the Flower Garland Sutra which some people feel was probably Buddha's first sutra. He tells the story of Indra's Net. It's the god Indra, and it's a metaphor where he describes an interconnected universe that he says is like a spiders web where at each intersection of the web points, there's a jewel, and each jewel reflects all of the other jewels in the entire net, so that the net itself is a self reflecting structure that

illuminates itself and keeps everything in relationship to all other parts of the entire universe. Then we move to Leibniz had a Baroque hall of mirrors, and the mirror as an object was just entering daily life, before that it had been seen as a kind of magical thing.

Dr. Dave: Hmm.

Cambray: Not being able to be mass produced, in the sevententh century the technologies were such that they were becoming more common, and there was a whole notion of using halls of mirrors to get reflections to infinity, and being able to see things reflected, one in the other, without end, I think was the defining metaphor that Leibniz captured.

Dr. Dave: Your description of the Indra's Net makes me think of holograms, where the whole is contained in each part.

Cambray: If you take a holographic image, it's done in a crystal, and if you break that in half, the entire image is still there, it's just your resolution is cut.

Dr. Dave: Yeah, fascinating. Now things really start to get interesting in Chapter 3, where you go into complexity theory and emergence. Take us through these two concepts, if you will.

Cambray: These concepts come, really out of the use of high speed computers to help us with problems that were insoluble before. Starting with the work on weather systems, and this lead, of course, to Chaos Theory. Trying to predict the weather, in a way, it's an impossibility, and the question was, once you had some high speed computers, could you begin to do some modeling. Those early attempts showed that some very minor changes in initial conditions could get you going off in one direction or another and end up in radically different places. This is the so-called Butterfly Effect, where, you know, the wings of a butterfly flap in one place in the world and you get a hurricane as a result someplace else.

This is where the Santa Fe Institute people come in, computers got a little more sophisticated, and they started looking at problems that are insolvable from a strictly mathematical point of view, but can be modeled and simulated. So you try to get closer and closer to the result by seeing if you can make better simulations. In fact, through their studies like that, they were able to do some rather remarkable modeling, and they made a number of predictions from the models, and out of that they began to develop a theory that could begin to describe systems where the particles are interacting with one another, whatever they are, whether people or atoms, and if they interact in a competitive environment, they have the capacity to self organize, and once they start to self organize, you get new properties that are completely unexpected, that's what emergence is. Part of what they were trying to solve was the question of the origins of life, because once you have life present, the evolutionary model that goes back to Darwin is a very good model, the problem is it doesn't tell you, it doesn't give you a clue as to how things first began, and that's what they were trying to model.

Dr. Dave: Yeah. I love some of the examples you give from the insect world of emergence, where you have tiny units (laughs), tiny insect units, and some kind of overall intelligence behavior emerges out of the group without it being coded in any one individual. Maybe you can share with us the example of the bees that you gave, because I thought that one was totally mind blowing.

Cambray: Yeah, this is the one about the beetle larvae. This was something I picked up in some scientific publications, it had nothing to do with psychology. These are beetle larvae from the Mojave desert. They tend to clump, a number of them all get on to a little branch, and there are pictures of these, they make a kind of lumpy shape that apparently looks enough like a female bee, and gives off the right pheromone, that male bees try to come and mate with this... This clump. In the process, these beetle larvae, which are parasitic, attach themselves to some of the chest hairs of the male bee, and then when the male bee leaves, he carries them around to an actual mating event with a female,

they transfer on her back, they're carried by her to the hive, where they then eat the pollen. If they don't do this, this is what's remarkable, if they don't do this, they can't complete their life cycle. So that the creation of this bee-like structure is an emergent form. There's no image inside these creatures to build a bee, and there's nobody telling them how to do this, it's a spontaneous self-organization into that form.

Dr. Dave: Wow. I'm really struggling to wrap my mind around that.

Cambray: (Laughs) Well I think think that's what these things with emergence are like, they hit us at the level of mystery. They don't come with an explanation. You observe these things in nature and you go ".... Ah. My goodness, this is as much of a mystery as the notion of synchronicity."

Dr. Dave: You know, this makes me think too of... Jungle environments and so on in earlier times. People learned that certain plants had certain healing properties.

Cambray: Mhmm.

Dr. Dave: It's hard to buy that it all just happened through trial and error. You get the sense that there was some other kind of organizing principle some where at work.

Cambray: Certainly, in the Medieval times there was something called the doctrine of signatures, it was an intuitive model, a way of looking at the world and seeing in that presentation of form and intuition of their purpose.

Dr. Dave: Yeah.

Cambray: The question is whether Shamanic traditions opened up something of that level of intuition that began to be useful in terms of observing animals and plants and the world and finding the medicinal ones.

Dr. Dave: You also earlier spoke about symmetry. Why is symmetry and or asymmetry important for a model of synchronicity. It just seems like "Woah, we're just getting way far field here."

Cambray: It really has to do with coming from a cosmological standpoint. There are multiple strands that brought me to that. The breaking of symmetry, for all these things we're talking about, is how increasing complexity occurs. If you take any system that's interacting in this way to create a form that has more possibilities that emerge out of it, you can only get to those by lowering the amount of symmetry. You have to break the symmetry.

Dr. Dave: So it's basically the notion that destruction and creation are kind of married to each other then.

Cambray: Absolutely.

Dr. Dave: You can't have something new without destroying something old.

Cambray: That's right, there has to be some sacrifice. You have to lose something. You can think of a mother infant diad as being, at least in some moments, in a very intense symmetric sort of oceanic world, and it takes something from the outside to break that pair up, and that's how consciousness emerges.

Dr. Dave: Now in Chapter 4, you go on to discuss empathy, which, I guess, brings us to the sort of human realm, and maybe a kind of resonance, maybe a relationship to field theory, in fact, you invoke both field theory and the latest research on mirror neurons. So take us through that.

Cambray: Well, it seems to me that in looking at "What is empathy," is is it really a way of knowing the world, a way of experiencing both other people and experiencing other aspects of the world. It's a way we internalize, we take something within ourselves and more deeply try to

discover how it works, how we can come to an understanding of it, including the mind of others. Empathy seems to have been, it's a term that really is rather recent in Western thought, it really only goes back to the late nineteenth century, where in German thought the term was a "feeling at one with something." It was quickly recognized that this was a form of exploration of the world, a kind of introspective tool, where it's gone in and out of favor over the course of the last century, but what's been particularly interesting is in the early nineties there was a group of researchers in Italy at the University of Parma who were doing some experiments on monkeys. They were looking at the motor neurons and trying to understand how the brain/body interface works. They way motion is portrayed with the neurology of the brain. Serendipitously, somebody left the equipment, at least this is the story, apocryphally, and suddenly they saw the neurons that they were studying firing, yet the monkey was set rest. This was a really perplexing sort of thing that they had the good sense to investigate, once they realized this wasn't due to a failure of their equipment, and what they discovered was there were a small class of neurons that fire when the monkey performed an action and when a monkey observed an action. In other words, this was something that was linking inner and outer worlds; both what came from within the self, in terms of an action, and what was being brought in from the outside.

Dr. Dave: In other words, if a monkey saw another monkey performing a certain action, the neurons would fire just as they would if the first monkey had done those actions himself.

Cambray: Exactly. That's why the terms mirror neurons was applied. From there, the people who were working in human psychology began to look for the same kind of mirror neurons, and they were discovered in some particularly interesting areas. The point was that these were recognized, in a very low level as communicative tools, and that these might be the very basis for empathy. It's the way we internalize

something from the outside so we come to understand it within ourselves.

Dr. Dave: So, what's the relationship between that and synchronicity, since that's the central topic of the book.

Cambray: It takes a little more work to get to that, but I think what you've got with the mirror neurons and the empathy, you're looking at a field phenomenon, so we're moving back to that direction of a holistic field. So we see that when there are these moments of coincidence, this kind of resonant mirroring is really what's going on, and what is synchronicity but a kind of mirroring of an inner event and an outer event. We're saying that, in a way, synchronicity is a form of objective empathy. That there's a coincidence between the outer object and the inner experience. This might be a way to begin to enter this from the neurological perspective.

Dr. Dave: Mhmm.

Cambray: So you see I'm getting a little away from the a-causal view of synchronicity here.

Dr. Dave: And if it weren't complex enough already, you enlarge your scope in the final chapter to talk about cultural synchronicities and serendipities, and you give some examples from the history of science. Maybe you can take us through the highlights of that, and particularly, what the differentiation is between those two words; synchronicity on the one hand and serendipity on the other.

Cambray: Okay. First off, with cultural synchronicities, I was interested in looking at sociological or cultural historical events that had a synchronistic core to them. The first one that had come to my attention was some of what happened between Cortes and Moctezuma that lead to the conquest of America. I won't take the time to go through the details, but it's chock-full of very odd coincidences, without which the story would have looked very different. You then begin to realize that this is a

story that has that kind of core that unfolds over the next 500 years, so we can't just locate the event, we can say it's kind of an origins event that happens in the fifteenth century, but it then moves very quickly in waves out over the course of time, and continues to resonate. So my question is were there other events, and the more I began to look and collect these... I looked at the origins of Greek Democracy, with the rearrangement of the city of Athens along new tribal lines that produced an emergent structure that was really part of the flowering of Athens, and I can see in there a kind of cultural synchronicity.

Then I began to look at some of the serendipitous discoveries in medicine and science. As a scientist, I had myself had several experiences of serendipity, in the sense of discovering something you weren't looking for; making a significant discovery by accident. It's only an open, well trained mind that will recognize that something meaningful has happened, like the business with the mirror neurons, many people could have just discarded that as mechanical failure or an annoyance getting in the way of the actual experiment. It takes a bit of real perception and depth of openness to grasp that you got something new here unexpected. So I look at a couple of those things, like the discovery of penicillin and so forth, that has layers of these kind of serendipitous discoveries. Then the question is, as you ask, what's the relationship between serendipity and synchronicity.

Dr. Dave: (Laughs) Okay. We're getting to the borders of our own understanding.

Cambray: Absolutely.

Dr. Dave: What you are saying makes me think of what I think has been observed. When there are these major sort of scientific periods of paradigm shift, they're also echoed in art and in religion and in philosophy, it's as if there were a wave of change permeating...everything.

Cambray: Yeah, that's why the cultural piece seems so significant. I think you're absolutely right. If these things are truly happening, if it's like an archetypal pattern constellating in a culture, then you would expect multiple ramifications of that, and cutting across all these different disciplines. It's only by, in a way, reassembling some of the streams that you begin to get a larger picture.

Dr. Dave: Mhmm. So I'm wondering if you can pull back and give us the view from 40,000 feet. We've discussed everything from archetypes to field theory to relativity, to the nature of time to mirror neurons and empathy. After all this wide ranging research, what's your view of synchronicity.

Cambray: Well I think it's still something not well understood, first off. I feel like this is a step in a direction, it's not a definitive statement. My feeling is that we still have a mystery here that requires us to continue our research, to continue to look. I have some thoughts about the way you could do some experiments that might help clarify some of the questions that are still open.

Dr. Dave: Yes, you give some suggestions along the way that maybe doctoral students should pay close attention to.

Cambray: (Laughs) It just feels to me that there are possibilities here that, culturally, we're just reaching this place. People say that the twenty-first century is the century of the brain, perhaps. Of course, the best model for the brain/mind relationship is really an emergent model. That the mind emerges from the brain, so what I'm trying to do with this is to also suggest that some of what Jung's intuitions were, were about 75 years in advance of where culture was, and we now have some of the tools to begin to look at that, and we should reexamine some of his ideas in that context.

Dr. Dave: You know, Jung talked about little dreams and big dreams, and I think we all learned about that distinction. I'm wondering, are there little synchronicities and big synchronicities?

Cambray: Yes. My feeling on that, and some... C.A. Meier, one of Jung's early disciples, suggested that the mind/body relationship might have a synchronistic dimension to it, which would be a much lower level. I actually... I don't want to go off into a lot of science here, but there's something called a power law where you look at the frequency and intensity relationship, and under the right mathematical conditions, if you get a straight line in a plot, it tells you that at different levels of intensity, you have the same phenomena going on, only some are big, some are little, in the way you are talking about. Like earthquakes, whether it's 2 on the Richter scale or a 10, the actual experience, of course, is radically different; you barely feel a shake at 2, where as at 10 the world is crashing down around you. I think synchronicities could have a similar kind of structure to them.

Dr. Dave: Yeah, I think so, just from my own personal experience. There are things that *feel* like little synchronicities, and others that just feel so astounding, and have so much rich meaning embedded in them.

Cambray: Yes, and I think anyone who works clinically will see these kind of things occurring in the course of therapy. There are little moments. I have more recently started to talk about moments of complexity where curious odd little coincidences will happen and sometimes they will build up to something rather major, that may even be life transforming for people.

Dr. Dave: Maybe we could just briefly touch on what's a really big question, which is the utility of synchronicities in therapy. How do you use synchronicities when they're reported in therapy?

Cambray: Yeah, as you say, that is a huge question. The first thing I would say would be something like emergence, which I'm going to use as a kind of backstop for synchronicity, is value-neutral. That is, it doesn't come with a sense that it's necessary a good or bad thing. One of the things I think when you're looking at synchronistic or emergent phenomena in therapy, one still has to wrestle with the morality of it,

that one doesn't immediately assign a positive value because it has a kind of wow factor to it.

Dr. Dave: I wonder if Hitler had great synchronicities.

Cambray: Well... I would say that Naziism was itself an emergent phenomena in the German culture, and it was a rather dark one.

Dr. Dave: (Laughs) Well, that's an interesting place for us to close. I wonder if, as we wind down, there are any final points you like to share.

Cambray: Well, again, I think that it may be a place where east and west can meet. You know, Jung's move in to synchronicity was facilitated by these ancient texts from the East. I've recently spent some time in China, and I'm struck by how quickly and thoroughly the Chinese pick up complex systems. Their culture seems to be adapted more in that direction. We have a more scientific language for it, they have almost a more well developed cultural intuition. So it may be a way in which our world can become more connected.

Dr. Dave: That's fascinating, and it's hopeful... Hope is a good thing (laughs).

Cambray: (Laughs) Yes, I think so. I think we all could use a bit of it.

Dr. Dave: Yeah. Well, I hope this didn't feel too much like your oral exams (laughs), as a doctoral student or becoming a Jungian analyst. I kind of had that feeling part-way through. So Dr. Joseph Cambray, I really want to thank you for being my guest today on Shrink Rap Radio.

Cambray: Thank you Dave. It was a pleasure talking with you.