

A David Van Nuys interview with Rollin McCraty Ph.D.



Introduction: My guest today is Dr. Rollin Mc-Craty, and we'll be discussing the benefits of heart coherence and other matters of the heart. Rollin McCraty, Ph.D. has worked in the Institute of Heart-Math since its inception in 1991. Working with the institute founder, Doc Childre, Dr. McCraty developed the organization's research goals and created the institute's scientific advisory board.

McCraty is a Fellow of the American Institute of Stress, holds memberships with the International Neurocardiology Network, American Autonomic Society, Pavlovian Society and Association for Applied Psychophysiology and Biofeedback, and is an adjunct professor at Claremont Graduate University.

Dr. McCraty and his team regularly participate in collaborative studies with other U.S. and international scientific, medical and educational institutions. They have worked in partnership with research groups at Stanford University, Dalhousie University in Halifax, Nova Scotia, and the Miami Heart Research Institute, among many others.

Dr. McCraty has authored dozens of research studies, many of which have been published in peer-reviewed journals including the American Journal of Cardiology, the Journal of the American College of Cardiology, Stress Medicine, Biological Psychology, and Integrative Physiological and Behavioral Science. In 2010, Alternative Therapies in Health and Medicine, a respected peer-reviewed journal, dedicated an entire issue to the topic of coherence. Dr. McCraty wrote the lead article for this issue. Many of the other research studies represented in this issue examined the implications of HeartMath techniques and technology in a variety of settings and applications.

You can obtain a free e-book on HeartMath at http://www.heartmath.org/free-ebook-emotional-stress. Now, here is the interview.

Dr. Dave: Dr. Rollin McCraty, welcome to Shrink Rap Radio.

Dr. McCraty: Well thank you, good day.

Dr. Dave: It's great to have you on the show. I don't know if you'll recognize the name of my good friend, Dr. Dale Ironson, who for years has been singing the praises of HeartMath to me. Does that name ring a bell for you?

Dr. McCraty: It does, yes. In fact if I have it right, I think we were at a board meeting together in the UK a few years ago. That's how I first met her.

Dr. Dave: No, you are thinking of his sister, Dr. Gale Ironson. I'm talking about the brother, Dr. Dale Ironson.

Dr. McCraty: Oh right, right—yes, yes, you are absolutely right. I misheard you. It does ring a bell, yes.

Dr. Dave: He's been a good friend for a long time, and I've also interviewed the pair of them on the show a long time back. And then more recently I seem to be hearing about HeartMath in other places, and I even had a recent listener request to do a show on it. So I'm really glad to have you here to fill us in on HeartMath.

Dr. McCraty: My pleasure.

Dr. Dave: So I think the place for us to start is for me to ask you, just what is HeartMath?

Dr. McCraty: That is always a hard question to answer because it's so many things in different ways. We are a research-based organization. Basically HeartMath is a system of tools, techniques and technologies that allows people to bring their physical, mental and emotional systems into balance and alignment. And I'm going to add, with their heart's intuitive guidance, to help them unfold through the process of becoming who they really are at a deeper level: heart-empowered beings.

Dr. Dave: You know, it strikes me for the first time right now that the word HeartMath is almost an oxymoron. It might seem that way because we don't tend to associate the heart with mathematics. So how is it that you arrived at that name?

Dr. McCraty: OK, well that's an interesting story too. "HeartMath" was coined by the founder of HeartMath, Doc Childre, and what he really meant by that name was to put the heart, which is usually thought of as a kind of a mushy or Valentine's day thing, together with the intelligence of the heart which is what we are talking about.

That's one answer to it. And another is that through our inner heart's guidance there are psychological formulas, if you will, where if we do X we will get Y result. So that's another aspect of where the name came from.

Dr. Dave: To what extent are we talking about the physical heart as opposed to the metaphorical heart—and maybe there's a relationship between the two?

Dr. McCraty: Well absolutely, and we are talking about both. I mean obviously we do a lot of work

with the physical heart and that's where a lot of our publications are based, in cardiology and biological psychiatry. All these kinds of publications have to do with our work on measuring the heart's rhythm or heart rate variability. And I think we are probably best known for being the original people who discovered that our current emotional state is reflected in the rhythmic patterns of the heartbeats, kind of like Morse code. We are probably about 80-85% accurate in detecting someone's emotional state just by looking at the pattern of their heart rhythm, whether they are conscious of the emotion or not. The body doesn't lie, and the heart really tells us what's going on. So that's on the physical side. Then there's the anatomy of heart-brain communication, which is all really important stuff.

We are also investigating what you would call the spiritual heart, or energetic heart. I don't think it's metaphorical so much. Some of our evidence is starting to say that there really is an energetic system. By energetic system I am talking about things we can't put under a microscope. You can't see a feeling or a thought. You know, it's not a physical thing that you can put an electrode in or, like I said, put under a microscope. So that's what I mean by energetic system, taking the mystery out of it.

For example, some of our work on what I like to call the electro-physiology of intuition shows that the heart is actually the first system of the body to respond to a future unknown stimulus. It then literally sends a measurably different neurological signal to the brain, informing it, and the body then responds. We call that the gut feeling, or the intuition. So I think that is some of the best evidence yet that the great writers of the past have been right all along when they talk about the heart being the window or the primary channel, if you will, to wisdom, to a higher capacity, our higher self. Every culture has its own word for that part of ourselves, for our "undivided wholeness", if we use a physics way of saying it.

Dr. Dave: Wow, you've really opened up a whole lot of possible directions here, and I'm particularly interested in this intuitive anticipation that you mention which almost sounds like what in the past would have been called ESP or precognition. Would I be right about that?

Dr. McCraty: Well yeah, and some of my colleagues have done work and have called it precognition. And now they have pretty much stopped us-

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ing that term, because cognition is not involved. We always want to give the higher brain responsibility for everything, and it's just not the case always. I think intuition is a much better term. Now when we talk about "intuition"—just to help the listeners to understand where I am coming from here, because that term gets used a lot and for different things embraced under it—from our research we see that there are three different types of intuition.

Now, most of the academic writings on this topic are really to do with what is called implicit knowledge or implicit learning. And of course that's a very real and very important aspect of intuition. Basically it means that we learn something that we didn't know we had learned and that we forgot we learned. Then when we are faced with a new problem that we have no solution for, we are chewing on it a little bit. And we are either driving to work or not thinking about it or we're in the shower or something like that and —voilà—the answer seeps up from our unconscious to our conscious and we have the insight. That's certainly an aspect of intuition.

The second type of intuition is what we call energetic sensitivity. That's where our nervous systems are actually sensitive to other very real, measurable signals in the environment. For example, most people might have had the experience of feeling like somebody is staring at you and you turn around and, sure enough, there is someone staring at you.

Dr. Dave: Yeah, boy, I've certainly had that experience.

Another example of ener-Dr. McCraty: getic sensitivity is that some people have sensitivity to earthquakes. They can feel them coming. And we now know that you can measure changes in the earth's magnetic fields prior to an earthquake. Animals are also great examples, they are very tuned in and there are lots and lots of examples of this.

Some people have more sensitivity for these kinds of things. Empathy would be another thing in this category where we are reading different kinds of signals, especially ones that our heart and body are radiating. These examples are all in the energetic sensitivity category. We've done a lot of work here in our lab to verify this, to kind of take the mystery out of it and make it very rigorous science.

And the third type of intuition we call non-local. One example that a lot of people can relate to is when you are driving down a road that you've gone down many, many times before, and for some reason that you might not even be conscious of, you slow down before you go around a curve or over a hill, and sure enough, there is either a police car or a child running out onto the street or an accident or something that would have probably caused a problem if you had not slowed down. Most people have actually had that experience. Or you are thinking about somebody and the phone rings and it's them, that kind of thing. Those are examples that you cannot really explain through implicit learning or implicit knowledge.

There are some very rigorous studies now, not only ones conducted here in our facility but by a few other people also, that have all kind of confirmed that intuition is a real and a measureable thing. What we're also finding as we get what we call more "heart coherent", which is a physiological measure of the alignment of our inner systems and also the alignment between our mind, emotions and body, is that we have more access to all those types of intuition. So we are really able to access more of that kind of information in our day-to-day lives.

Dr. Dave: Well, thank you for breaking that down for us. And I'll let you know right up front that I am not a skeptic when it comes to the kind of experiences you are describing. So you don't have to worry about having to defend yourself.

Dr. McCraty: OK, that's nice to know. Some people are, you know, "Don't confuse me with the data, my mind is already made up"— you know.

Dr. Dave: Yeah, I know.

Dr. McCraty: I'm glad to hear you are not one of those.

Dr. Dave: Yeah. At the same time, I know your title there is Director of Research and I'm sure listeners would be interested to know, what is your training and background in terms of scientific research?

Dr. McCraty: Oh sure. My first life, as I like to call it, was in electrical engineering, and I worked for Motorola for a while as a systems engineer going out and solving problems people couldn't solve in the field. Then I started my own company, which was a research and development company in the

field of electrostatics. And we became a pretty successful company inventing new technologies and so on. The short story here is that I basically made a lot of money doing that and got to a place in my own life where saving the life of another microprocessor wasn't really that fulfilling or having another sports car in the driveway wasn't going to do it for me.

That's when I met Doc Childre and got back more into my humanity side of things, and I really wanted to do something that made a difference. I understood what he was talking about in terms of the heart and it not just being a metaphor for a more intelligent type of system. It got me intrigued, and I tried it in my own life—some of what he was talking about. This was long before there was Heart-Math Institute. And it worked for me. I had more personal gains in a three-month period after really giving it a serious try than I'd had in fifteen years of meditative-type practices. Then I basically became a psycho-physiologist and got a Ph.D. in psychophysiology—ten, twelve years ago, whatever it was—to do the kind of research we do here. So all of my background in electrical engineering and all that was perfect for what I do now.

Dr. Dave: Wow, that's really fascinating. I had originally planned to be an electrical engineer myself, but my path deviated from that. What was the practice that Doc Childre engaged you in when you say you tried meditation but it wasn't really working for you? Evidently he introduced you to a practice that was fairly dramatic for you.

Dr. McCraty: I won't say meditation didn't work for me for me. It did. During those years I took a company from a startup in a garage to a fifteen million dollar company, so I had a great time through all that. Don't get me wrong, it was a fun ride. So I was serious about meditation, but I never really got stuck into the new-age kind of stuff at the same time. So I'm not saying it didn't help, that it wasn't helpful.

What Doc Childre introduced me to was the idea of the...even in the meditation practices—I'll back up here—a lot of talk goes on about the heart, about how you need to come from your heart and listen to your heart, all that, but it's still really more head-driven, mind-driven.

Dr. Dave: OK.

Dr. McCraty: You know, you whip your energy through your chakras and this and that and through the heart. And what Doc Childre was talking about was the heart, the energetic and spiritual heart, being a very real part of our nature and that it operated in what you could think of as another dimension of intelligence.

And so it was about really going into the heart and letting it run the show to access that other level of our inner intelligence. At that time this involved focusing one's energy in the heart center and accessing that deeper intelligence. And a lot of it had to do at that time, and it still does, really, with activating a sense of appreciation or deeper care.

This helps bring our systems into alignment to access the deeper part of ourselves. So I just simply tried that. We now call it "heart-focused breathing", to put your attention in the heart and breath as though you are breathing in and out of the heart area. I was really becoming more aware of my inner systems and was especially appreciating life and people. So it's what really made the difference for me: accessing that intelligence, that deeper intelligence.

It's really hard to talk about this stuff because so much of it is a personal kind of experience—people have to have it to get it.

Dr. Dave: Well, as difficult as it may be to talk about, I really appreciate you sharing your experience with it. Now a lot of my listeners are either therapists or are on their way to becoming therapists. Do you see HeartMath as a form of psychotherapy, or do you see it more as a human potential tool? You know, where would you place it?

Dr. McCraty: Well I wouldn't necessarily put it the psychotherapy category, but it's certainly a set of tools and techniques for expanding human potential. As I said earlier, it is helping people become who they really are at that deeper, inner core level. So HeartMath tools and techniques are certainly used in many therapy modalities now. I think last I heard, over thirty MBA hospitals and military hospitals are actively using HeartMath for a wide range of things: everything from pain management to helping with reintegration, PTSD, traumatic brain injury—just on that side of things.

HeartMath is used widely in alcohol and drug rehabilitation centers. What HeartMath is, if I can say it in another way, is tools and techniques to help us self-regulate but from a more intelligent, inner ref-

erence place or point. That's really what it's about from my perspective.

When we look at most of the problems we face either clinically or in society, it gets down to a lack of being able to be in charge of ourselves, to self-regulate. So ultimately HeartMath is giving you very practical, intentionally simple tools to do that, to self-regulate, to manage your emotions and behaviors.

Dr. Dave: Yeah, and given some of the applications that you mentioned, it seems like it would, at the very least, be a good tool for a therapist to have in their toolbox.

Dr. McCraty: Oh absolutely, yes. In fact we have a certification program just for healthcare professionals. A lot of healthcare professionals, including psychotherapists, social workers, but also cardiologists and people treating physical diseases have gone through that course. Basically when you use these techniques there's a measureable physiological change that goes along with them. Of course this centers on the activity of the heart. So again a lot of our work, on the science side, has been to study the physiology of all of what we call the coherent state.

A lot of people don't realize that the heart sends more information neurologically to the brain than the other way around. I can't take credit for that. This been known since the late 1800s, just largely forgotten and ignored. Yet those signals that the heart sends to our brain have profound effects on brain function, on our emotional experiences and our cognitive abilities. What a lot of therapists in many different disciplines have found is that if they get their client into a coherent state before they do whatever their choice of therapy is, they have much better outcomes, because they are getting people stabilized.

Coherence is a more stable state from a physiological perspective. It stabilizes the emotions and it facilitates mental functions. So whatever it is you are trying to do, you typically have better outcomes if you are in a more coherent state before you engage in it. Hopefully that makes sense the way I said it.

Dr. Dave: You may be speaking to what was to be my next question, which is, what sort of scientific validation is available for HeartMath's claims? I don't know if you've made any claims yet. I guess you have about self-regulation, emotional balance

and so on. So what more can you tell us about the scientific validation?

Dr. McCraty: Probably the easiest place for people to go would be the Institute of HeartMath website, which is heartmath.org. On the website there is a section called Research Publications and there are many, many publications there. There are clinical studies on everything from blood pressure reduction to congestive heart failure, to reduced depression and anxiety, improved test scores, group cognitive function studies, PTSD, and brain injury. There's everything that I mentioned earlier and a lot of the basic research understanding the physiology of coherence—heart-rate and communications studies—which have been published here, because we are basically a research facility. But most of the clinical outcome studies have all been independent studies done by either medical institutions or all kinds of independent partners.

A lot of our work has been verified now independently and published by a large number of different institutions and researchers. So again there are some overview papers which might be a good place to start. You'll find a lot of publications. There's not only one or two. It's a pretty long list.

Dr. Dave: That's great to know. People who want to find out more will be able to do that.

That's wonderful. You've mentioned several times the term "coherence", the "heart's coherence", and I'm wondering both from a subjective point of view and an objective point of view, what does heart coherence look like? How does one know either subjectively and/or objectively when they are in that state?

Dr. McCraty: Well let's talk of the objectively first.

Dr. Dave: OK.

Dr. McCraty: I think that's the more important thing. In fact, since we have discovered the coherent state, our sister company HeartMath LLC has come out with simple little inexpensive devices to actually measure coherence physiologically.

Dr. Dave: I was wondering if you had something like that.

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Dr. McCraty: The way coherence is assessed at a physiological level is looking at what's called heart-rate variability. That's probably a term that will be familiar to some listeners because it has become so popular in recent years. For those who aren't familiar with that term, in a healthy person, a resilient individual, our heart rate varies with each and every heartbeat. And that's called heart rate variability, which is very different from just heart rate, which is simply how many times the heart beats in a minute. So our heart is actually varying with each and every heartbeat. That's going on all the time even if we are asleep or resting or whatever.

As for the amount of this intrinsic natural variability, we have a lot more of it when we are young. We have less as we age. Now measuring how much variability we have we can pretty much tell, within an accuracy of two years, how old someone is. There is a very strong relationship between age and the amount of variability. So if we are depleting ourselves with stress, and it's usually psychological stress, anxiety, anger and irritation—these kinds of things that deplete our psycho-physiological system—this shows up in reduced variability or reduced resilience. That's one level of variability.

Now there's another, deeper level of looking at variability, which is, what's the pattern? You can think of this loosely as the heart beating out a message, kind of like Morse code, and that's what's reflecting our current emotional state and, to some degree, our mental state. This is where a picture is worth a thousand words. When we are in a state of anger or frustration, anxiety, fear, and so on, our heart rhythm becomes a very chaotic-looking pattern. We now know that you can actually do discrete emotion detection just from this pattern.

When we are in a positive state, when we are really feeling good and feeling a sense of adventure, enjoying life and having feelings of appreciation, compassion and care, the heart beats out a very different message, a very different pattern that's like sine waves, rolling hills.

This is ultimately reflected in our nervous system, our autonomic nervous system. So on the negative side of things, when we are frustrated and so on, the activity between the two branches of the autonomic nervous system, the sympathetic and parasympathetic, is literally out of sync. It's a lot like trying to drive your car with one foot on the accelerator and the other foot on the brake at the same time. It's a really good analogy, because most peo-

ple get that "Oh, we shouldn't do that, it's no good for the car, we'll wear out the brakes faster and use more gas to get where we're going, and it's kind of a jerky ride." It's a great analogy, because these are all the same things that are going on inside of our body.

Now, because of the fact that the heart sends more information to the brain neurologically speaking than the other way around, there are very strong neural connections from the afferent or ascending pathways of the heart to key brain centers which are involved in a lot of different things like emotional experience.

Another one's the thalamus. The thalamus ultimately synchronizes the electrical activity of all the neurons in our brain. So when we have those erratic heart rhythms, which are associated with anger and so on, they basically interfere with the thalamus's ability to synchronize cortical activity...not that you have ever done this...where people might get a little angry with someone and say or do something out of anger that they regret a minute later; and I remember myself having done this once—I'm joking of course—thinking, "Where was my brain? I can't believe I just said that!"Dr. Dave: Yeah.

Dr. McCraty: That's the physiology of it, kind of simply said. However, when we are in a coherent state, the electrical activity in the nervous system is synchronized—literally in sync—and you literally have a very harmonious inner rhythm going on. This is what's associated with positive feelings.

So this can quite easily be objectively measured, and very inexpensively. We use this widely now in many healthcare settings to help train individuals about how to get into this coherent state, this optimal state that's associated with the things we talked about earlier: emotional stability, improved cognitive and mental function, improved memory, blood pressure reduction, and so on.

It's a great training tool, but the thing to really emphasize is that it's there to facilitate people learning the skills to self-regulate, to be able to shift into that coherent state during life's challenges—you know, when the person cuts us off in traffic or the person in the staff meeting says that thing we know they are going to say that gets us upset—to be able, in that moment, to shift and self-regulate so that we can get into that more coherent state which then facilitates mental function. We can then make a more intelligent choice on how we deal with whatever the situation is at hand.

Now I know that was a long answer but I hope it gives you an idea of what we are talking about.

Dr. Dave: It's a great answer. Now, you mentioned the sympathetic and parasympathetic, and I am aware that there is a lot of new research interest in what is sometimes called the "third system"—I'm referring to the vagus system. I've interviewed Dr. Stephen Porges and also Dacher Keltner about the polyvagal theory, so it sounds like what you are referring to might relate to that. Does HeartMath somehow fit into that picture?

Dr. McCraty: It does. In fact I know Steve Porges, and he's more focused on the efferent or what is called the descending vagal system and how this reflects emotion and affects our ability to self-regulate. So it's very much aligned with what I am talking about. We are a little more focused on the afferent or the ascending information from the heart back to the brain. So it's related but different. But we facilitate or support each other's research, I would say.

Dr. Dave: OK. What is HeartMath's relationship to other approaches? For example, I'm thinking of the explosion of interest in positive psychology. There may be other approaches too that Heart-Math overlaps with.

Dr. McCraty: Well, certainly, positive psychology would be related to our work. We were there a lot of years before the positive psychology movement ever occurred. In fact I spoke at the first positive psychology conference at the APA. Back when we started in the 1990s, there were maybe three or four papers in the research literature that had to do with positive emotions; there were very few. You are absolutely right that has exploded in recent years.

So it's related, but I think we are probably a little ahead of that curve in a way. Some of the questions that are asked in positive psychology...we have kind of already been there, done that and are on to giving people practical tools and techniques to actually self- regulate and become more positive.

Dr. Dave: Yeah, actually that's true of a number of people. I attended their most recent conference, and there are people who've been working more or less in the area of happiness and what broadly might be called positive psychology who've had re-

search going on for 20 or 30 years.

Dr, McCraty: Yeah, and still asking questions like does it improve health? Do positive emotions still improve health? That's kind of like a no-brainer to me. There is so much research that shows that it does. So I think we are more focused on practical things that people actually can do, simple techniques that anyone can actually learn. For example, we've got programs that range from those for preschool children with very positive outcomes all the way to training that we are doing for the military. The navy hired us for the Military Resilience Program. Really, who can't benefit from learning how to better self-regulate?

Dr. Dave: Do you have any data yet from that navy program?

Dr. McCraty: The work we have been doing over the last four years with the navy has been with deploying troops. We have trained probably about 5,000 people for a mission called the Cheney Operations, the most stressful job in the military. It has the highest risk of psychological injury of any job in the military. That's what the navy discovered. That's why they came to us. It's almost impossible or very, very difficult to do what I mean by research in a deployed population. But we have been able to get some indicators, leadership feedback being the primary one.

One of the more objective markers from that work has been the reduced number of sailors and soldiers on that mission on sleep medications. It was pretty routine that about 80 percent-plus of these men and women had to be on some kind of sleep meds. That program went through a number of improvements over the years as we learned more and more about how to do it in those populations. For the last couple of units being deployed, there have been almost no people on sleep meds. The effect that the program has had on many of the markers leadership cares about has been overwhelmingly positive. That's why the program has been supported and continued on.

Now we are doing an actual study here stateside in San Diego with a non-deploying population. And that study is not over yet, it's still ongoing. We did a control study and control groups and all the measures but we don't have the results yet. That's one of several studies ongoing now.

Dr. Dave: Yeah, that sounds fascinating! Are there any other current research programs that you can talk about, or ones that are planned for the future that you are hoping to do?

Dr. McCraty: Well, there's another one that's going on right now in fact. We are in the data analysis phase. It's a study where we monitored a group of about 25 people, monitored their heart rate variability for 24 hours a day for four or five months. Nothing has ever been done like this before, as far as I know—that kind of continuous recording. That's partly because of these new technologies that we have now, making it very easy to measure heart rate variability over long time periods. We'll analyze that data from a lot of different perspectives but the current study is to look at the interconnectedness between humanity and the earth's geomagnetic fields. Now that may sound a little wide, but there is an overwhelming amount of data about this. In fact one of our board members and collaborators named Franz Halberg—now you may know that name, but most people wouldn't...most people know the term circadian rhythm.

Dr. Dave: Yes.

Dr. McCraty: Dr. Halberg was the man who coined the term "circadian rhythm", and he's 93, still working seven days a week, sharp as a tack. He's a very passionate individual. In fact we published a few papers together here recently. He discovered, once he got onto the circadian rhythm and all the different aspects of it—and there is no greater world expert than Dr. Halberg on this—that our internal rhythms are affected by external things. That kind of ties in with the energetic sensitivity I was talking about earlier.

With the earth's magnetic field, our blood pressure, our heart rate and some of our hormonal levels are actually synchronized to it. When the external field gets disturbed, this usually hits people more in their emotional system. So when the planetary field environment is disturbed, people tend to get more mentally confused, get frustrated and irritated quicker, have weird dreams, things like that.

In fact we did a study of 1,600 people a couple of years ago about this. And now we are doing research at the physiological level to try and understand what the mechanisms are for this at both the planetary and physiological level. This is primarily in the context of people learning that when we have

these...I call them energetic influxes or disturbances...we don't have to be affected by them. We really can self-regulate, but helping people understand this is an important part of the process of what's going on. That's a current study.

We've got another study started. One of the things that multiple studies have shown is that coherence training or HeartMath training is really helpful for blood pressure regulation. So for a lot of people with hypertension, even uncontrolled hypertension, HeartMaths is—I hate to use the word—almost magical in some cases in how well it works.

There are multiple studies on this. We are getting ready to do a much larger clinical study on hypertension and HRV (heart-rate variability) and coherence training.

Dr. Dave: You know, as you talk about Earth events affecting the heart, and through much of your discussion, I've been thinking about Dean Radin at the Institute of Noetic Sciences.

Dr. McCraty: Sure.

Dr. Dave: And I think there would be some mutual crossover in the research that you two are doing.

Dr. McCraty: Now, Dean's a friend. Are you talking about the global consciousness project work and the random number generators?

Dr. Dave: Yes.

Dr. McCraty: Yeah, sure. That's Roger Nelson who's the head of that, Dr. Nelson. Dean's closely involved, of course. In fact our lab is one of the nodes and sites for that system and has been almost since it began. I'm very aware of it. In fact both Dean and Roger are on the board for what we call the Global Law Coherence Initiative looking at the interconnection between humanity and the earth's systems. Part of what we are doing on that side of things is installing earth monitoring sites to look at the resonances in the earth's field, which is very different to the classical monitoring systems that are out there.

When you go to NOAA and different websites for magnetic fields, nobody has had a system which looks at the resonant frequencies in the earth's

systems. It's bizarre to me that we don't have a federally funded system for it, because these are the resonances which overlap exactly with human brainwaves and heart frequencies and which are much more likely to explain the biological effects of these earth disturbances and earth fields that are well documented now. I'm kind of getting off track here, but anyway, we have the random number devices at each one of our monitoring sites as well. We are very closely aligned with Dean and Dr. Nelson on that project.

Dr. Dave: OK, since HeartMath does sell products and services, what products and or services does HeartMath offer? You've mentioned a couple but if you can just go over them again.

Dr. McCraty: Sure. Well it's probably important to know that there are two HeartMath organizations that work in alignment. There's the non-profit, which is the Institute of HeartMath who I am with. We do the research and work in education and also in communities. We have a number of training programs especially for community building. So these would be programs for law enforcement, fire departments, social services departments and so on. Also, we have a lot of programs for education and programs for kids of almost any age from school age almost all the way to college. That's on the non-profit side.

And then there's HeartMath LLC. They sell the devices I was talking about called em-Waves which do an objective measure of coherence. HeartMath LLC does clinical training programs for healthcare professionals and programs for hospital staff, and other types of training programs. They also sell a wide range of books, which are an easy way to get involved with HeartMath and an easy way to get started practicing the actual tools and techniques I've been referring to. So it's kind of a broad range. There is a deep set of products and technologies to help people learn how to be more in charge of themselves.

Dr. Dave: I'm wondering who your competitors are—part of it is for profit and usually people who are doing anything for profit do have competitors.

Dr. McCraty: You know that's a good question, and to be honest we really don't look at other people doing similar things as competitors. Our mission

is to facilitate people in becoming more connected with their heart intuitions as we go through these changing times. There are other companies that have come out with similar technology to the em-Waves but to be honest we really look at them as helping us with our bigger mission.

Most of those companies have licensed our technology to do it anyway to make their products work.

For example, you'll never see us do comparative studies although others do so. We don't look at HeartMath versus psychotherapy or EMDR, those kinds of things, because we really believe that as we become more coherent it facilitates whatever you are doing. It's not really a competitive kind of worldview that we have. If we were going to do a study like that it would be more along the lines of, what are the benefits of combining HeartMath with X? It's probably not the answer you are looking for, but it's really kind of our worldview.

Dr. Dave: One category that just came to mind is sort of what you might call brain-wave drivers. They would also be looking at frequencies and a kind of coherence related to the brain. Do you see some crossover or relationship there?

Dr. McCraty: In the neurofeedback community, which may be what you are referring to, that's an area where a lot of professionals who do neurofeedback have found that getting people heart coherent first really facilitates their training sessions. So a lot of people doing EEG neurobiofeedback do HRV coherence training as part of that. You're right. Looking at brain activity, "coherence" is a term that's used there as well. We use it in the same way—I'm getting a bit too complex here—it's where you have got more than one EEG or brainwave site becoming synchronized. It turns out that when you become heart coherent, a natural result is increased brain synchronization, which is one of the things we published quite a few years ago. So a really a fast way to get the brain more in sync is to get the heart in sync. I don't know if I answered your question or not.

Dr.Dave: Oh yeah, definitely. What do you see is the future of HeartMath?

Dr. McCraty: Well, I think just continuing to expand like we are and developing the applications of it. On the technology side we're working now towards what we call group coherence, so that groups

of people can, through technology, be working together. This is in addition to their personal level of coherence. What's the coherence at the group level? Those will be some of the future studies we are already looking at doing.

We already have a lot of data from organizations that when a team becomes more coherent together, there are a lot of organizational benefits that come out of it. For example, in many, many hospitals HeartMath is now the official training for the staff. The Mayo Clinic and many, many hospitals are doing this. Their absenteeism and turnover rates drop dramatically and performance improves in many different areas. There are reduced medical errors and meetings take about half the time. A lot of companies will say that when they really get coherent as a team, the amount of time they have to spend in meetings becomes dramatically reduced, for example.

Dr. Dave: Wow!

Dr. McCraty: Things like that, those kinds of studies—actually measuring coherence at the group level and associating this with the kinds of outcomes people are seeing.

Dr. Dave: Having been chair of a psychology department, I could see that having a tool like that would have been really useful.

Dr. McCraty: I understand, yes. I think everybody feels like they have too many meetings.

Dr. Dave: Now, I recall you also appeared in the wonderful film *I Am*. I got to see a showing in Marin County which Tom Shadyac, the director, presented. What can you tell us about your experience of being in that film?

Dr. McCraty: Oh, that was a kick. I am actually in about seven or eight films like that now. *I Am* is one of the more popular ones that made it into the theatres. Tom was a kick, I really enjoyed working with him.

Dr. Dave: Yeah, a really dynamic personality as we experienced him. As we wind down here, I wonder if there are any final points you'd like to make?

Dr. McCraty: Well I mean, I could talk for days, literally, here. I think we have covered it pretty well. My main message is that as people learn to become more heart centered, there are ways to access a deeper intelligence which helps us be more of who we really are—which I think is what people are really looking for, whether they would say it that way or not.

Dr. Dave: Well, great. Dr. Rollin McCraty, thanks for being my guest today on Shrink Rap Radio

Dr. McCraty: One other thing—I remember the person who put us in connection said there was some kind of free document that your listeners could get. I'm not really familiar with it but I was just asked to mention it.

Dr. Dave: Yeah, I'm glad you've brought that up. There's a free e-book, and I will put a link to that in the show notes. Once again, I want to thank you.

Dr. McCraty: Do you have any questions? Or do you feel complete?

Dr. Dave: Well, one question that is still lingering for me is, I'm aware that there are some meditation approaches that focus on compassion and on the heart, and I don't know if you'd have something to say about that or not?

Dr. McCraty: Well, there have been a couple of studies. We were involved in one of them. We did the analysis and a couple of other ones that have found...you are referring more to some of the Buddhist practices, loving kindness and compassion?

Dr. Dave: Yes, exactly.

Dr. McCraty: One study that we've done looking at Buddhist monks found that monks who had been a monk for more than, I think it was three years, were walking around in the same state of coherence I was describing. This was measureable and the younger ones weren't in that state yet.

We also did a study here of a Buddhist community that is not too far away from us. And we got involved with UCLA and, in fact, we're doing the analysis for them. We found something very simi-

lar. As they were practicing meditations of loving kindness and compassion they also went into a coherent state. So it's really great. It's kind of another way of confirming what we are saying in a different population. And in a way it's similar. What we are really teaching is techniques for how you can shift into that coherent state in the moment that you are having a challenging situation.

Like I said, the person cuts us off in traffic or we have a traffic jam—it's a big issue for a lot of people. There's the traffic jam, and what the majority of people are doing, even if it's at a subtle level, is feeling impatient and upset, and all that's really doing is draining their vitality, their resilience, their energy. And it's not going to make the traffic move any faster. So it's really a way of taking charge of ourselves and saying, "Wait a minute, this doesn't make any sense! Here's a technique I can use to get myself, my system, into a state that adds energy instead of depletes energy, and connects me with more of my inner intelligence." That's an analogy for many things in life.

Dr. Dave: Dr. Rollin McCraty, thanks for being my guest today on Shrink Rap Radio.

Dr. McCraty: My pleasure.

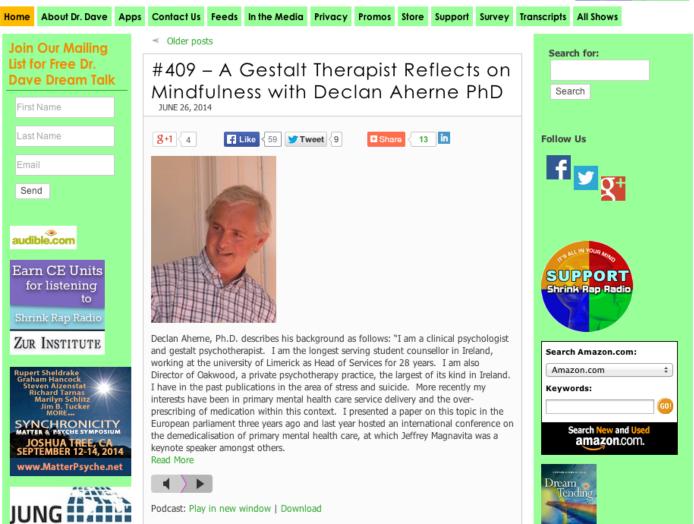
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