Waking World: 4E Cognition and the Enacted Self

An interview with Dr. Evan Thompson and Dr. Aaron Snyder

[0:00:08.5] Aaron: Hello, welcome to The Science of Meditation, hosted by Shambhala Mountain Centre. This is day two where we're exploring insight, self and embodiment. I am your host for today, Doctor Aaron Snyder and it is my pleasure to be here with Doctor Evan Thompson. Evan, thank you for being here.

[0:00:35.0] Evan: Thank you.

[0:00:35.8] Aaron: So let's get right into our conversation. When someone asks me "who are you?" it's not a difficult question to answer, I'm right here. I'm Aaron Snyder, from Fresno, California right here in this body. What would you add to that view of what I am, what the self is?

[0:01:13.8] Evan: Right, so I would say that what you just singled out, here I am, experiencing my being in this body with a particular name, that that already is to single out certain particular ways that we experience the self or have self-experience, and there are many other ways. So for instance, as you just said, there's a sense of being here now in my body, so that's a kind of sense of self in the present moment, but then the tag of that, with a name is an aspect of self that has to do with how you identify yourself and how you identify yourself can change over many different kinds of states of experience, so for example in the waking state, as you say, there's a sense of bodily presence in the here and now, but if you get caught up in a day-dream or a reverie or mind-wander, then very much the sense of self is a sense of self that is not so much here and now in that immediate bodily sense but that's mentally projected, maybe into the past in the form of a memory that comes up, or maybe in the sense of some plan that you have for yourself that you project into the future, so there what you identify with is actually a mentally imagined or a mentally enacted content, where you have this inner kind of visceral and maybe visual sense of yourself in imagination that is a mentally extended sense of self bound up with things like narrative and memories and plans. Then of course when you become drowsy and you fall asleep, then that sense of a sharp distinction between me, myself and an outside world, that starts to break down in the immediate phase of falling asleep, the hypnagogic state, you know you experience funny sounds or funny images and you're in a way sort of one with them and they're not, there's a sense in which they're you but they're not you, so that sharp ego-world boundary starts to break down, but then that boundary reappears in a dream, so you have another sense of self in a dream where you, maybe you feel a kind of embodiment in the dream world and you identify with the dream ego. If it's a lucid dream then you can recognise the dream state as a state of your own awareness or consciousness, but the form you take in the dream you know is again, mentally enacted because you have the awareness, if it's a very vivid dream, if you have a very vivid lucid dream you have the awareness of being asleep in the bed, so all of this is to say there are many ways of experiencing the self, or there are many different forms of self-experience where we have a structure of awareness, certain things that are filling our field of awareness, in ways that we identify them but some of them is either me or mine, and we mark others as not me or not I or not mine.

[0:04:20.2] Aaron: What would you say, our audience is largely interested in meditation, anywhere from experienced meditators to interested in starting to meditate. What would you say about meditation and our experience of self?

[0:04:44.3] Evan: Well, there again I would say there's a large range of experiences that happen and different traditions actually describe those in different ways with regard to the self, so for example under the heading of the way that the word mindfulness is often used in our culture

today, there's the idea that there are thoughts and feelings that arise and there's a difference that one can experience between identifying with the thought, the content of the thought as me, versus simply being aware of it as a thought, as a passing mental content. Of course, we also know in meditation that we get very much caught up in daydreams or ruminations or plans in which we're in a way stuck to the mental contents and absorbed in them and they often are ones that involve a strong sense of mental representation of the self. We can fall asleep while we're meditating and experience that whole hypnagogic state leading often into dreams, but because the meditation posture is usually an upright sitting posture, which requires a certain kind of energy and alertness, it can facilitate an awareness of that moving into a drowsy phase or moving into a dream, in a way that when you're sleeping in bed, that might not be so easy. So that whole range of self-experience comes up in meditation, and meditation in a way, depending on the intention or attitude you bring to it can provide a context for watching and examining phenomenologically, you could say, that range of self-experience. Many people of course also report things like a larger sense of a spacious background awareness that isn't really theirs in the sense in which you would say "I am Evan", the awareness isn't really marked properly by the word Evan, a first person pronoun, its vividly experientially present but its not self in that sense of self, let's say. So that's of course something that many different meditative traditions talk about, a larger kind of background awareness, and then how they conceptualise that let's say philosophically is another matter, but that sense of a bigger space of awareness is very much something that I think comes up for many people, sometimes quite early in meditative practice.

[0:07:11.1] Aaron: The document, brochure, for meditation that I found that, I thought of you immediately when I saw it, I picked this up in a church in Kansas City last week, it was a church where, as I was there by the way there were large meditation classes happening, of some sort so it was interesting, but it says here, do you know you can strengthen the brain circuits associated with peace, calm and happiness and a positive outlook just as you are able to strengthen your muscles and body with exercise. So this is kind of a case of the general proposition that meditation is how you fix your brain so that you can be happier and more successful. Often actually, more successful is the main issue as meditation is applied in business. How is that less than the whole story?

[0:08:08.3] Evan: Well, I would say, first of all that kind of brochure or statement presents a picture in which we know that there's scientific evidence for meditation strengthening circuits in the brain, whatever exactly that means. Now, in terms of the actual science, there's some suggestive evidence that meditation may facilitate certain kinds of improvements, but the evidence is still very tentative, it's very early and there's a kind of confusion between a state and like meditation changes your brain, whereas anything you do changes your brain, if I go drink a cup of coffee my brain has changed in dramatic ways, so anything you do changes your brain. The idea that practicing meditation improves your brain, well, that's not so clear in terms of the state of the scientific evidence, so that would be just one cautionary point there, but even apart from that I would say that there's an undue emphasis on the brain as somehow what meditation is all about. So an analogy that I like to use is say a practice of mindfulness meditation and what it is to be a good parent. When you're a parent that changes your brain and getting better at parenting presumably involves all sorts of brain changes, but if you were to try to understand what it is to be a good parent in terms of going inside and looking at the brain, you would be looking in the wrong place, of course you need a brain to be a good parent and your brain is going to be changed by parenting, but parenting, good parenting is something that's social, it's interpersonal, it's cultural, and to understand a phenomenon like parenting you have to look at human social cultural life, so I would say the same thing for meditation, you know the poster you just read to me was of something you found in a church. Well, the church is a community with social practices, with rituals, and that's really the level at which we need to understand

something like meditation, so it's not just that you can't investigate what's happening in the brain when someone is meditating that sign, but it really isn't going to illuminate what meditation is and to my way of thinking what it's value is. The way to understand what it's value is looking at people's behaviours and the social life and how it improves our lives as human beings in relationship to each other. So from a scientific perspective that would be to say that a better way to come at the scientific study of meditation is not through an exclusive brain focus, but through what sometimes is called 4E cognition or 4E cognitive science, that is the 4E stands for the idea that cognition is embodied or the mind is embodied, that it's embedded in a social environmental context, that it's extended so that the mind isn't just in the head, it depends on the body and tools that we use, other people, resources that we have and that it's enactive, that is that we create meaning through these kinds of embodied social practices. So of course, you know you need to look at the brain to understand that, but the brain isn't going to give you the whole picture. Just to give you one more analogy, this is another analogy I like to use, it's a bit like thinking that you could understand what it is for something to be say a gothic cathedral or what the meaning of gothic cathedral is if you were to just go and look at the stones and how they're sort of put together. You need to look at the stones, you need to look at how they're put together, but the meaning of it resides in history, iconography, social practice, community, so by analogy yes, you need to look at the neurons and their connections and the circuits, but if you just look at that you don't have in view what the phenomenon of meditation really is.

[0:12:09.7] Aaron: In investigating cognition and investigating mental activity scientifically, besides some information about meditation coming from neuroscientific investigations into what's happening in mostly the brain, there's I think a contribution to understanding the mind, let's say, by meditators. Examining meditators, we find out about more than meditation, can you talk about some of the ways that that's true?

[0:12:56.9] Evan: Yeah, so this is really the idea which compliments what I was just saying, I think, that there's a difference between treating meditation as an object of a scientific study with say an exclusively brain based focus and seeing meditation as a kind of skill and practice in which individuals who have some experience, depth of experience in that practice, are able to provide us with information about cognitive processes like attention or awareness, and they're able to report on those with some degree of precision in a way that individuals who don't have that kind of mental practice wouldn't be able to do so easily, so if you think of how the database of western experimental psychology has accumulated, a lot of it depends on experiments with say college graduates who are going to be running an experiment to get a credit in a course, and that's a perfectly fine thing to do, but it's only really one developmental slice of the mind, whereas if you can work with individuals who are skilled in meditation, and ask them to report in say challenging experimental paradigms more on a more fine grained time scale about say subtle fluctuations in their attention from moment to moment, things that meditation provides you with the kind of facility with over some time of practice. If they can then provide information about for example when they first notice a thought arising, this is something that I collaborated in an experiment that was done in a laboratory of Calina Christoff in the University of British Columbia, and this was conducted by her PhD student Melissa Elinel, and this is a published study, where the idea was that we were interested in spontaneous cognition, how thoughts just spontaneously pop into our heads and that individuals who are trained in Vipassana meditation will in general be able to report more quickly than say other individuals when they notice a thought first arising and be able to categorise it as a narrative self-thought or an affect emotional thought or a body sensation, and they're be able to this in a way that relatively, that's reliable and fluid so that then on the basis of those reports one can actually investigate in more detail some of the, and this was a neuro science study, some of the neural activity that leads up to the thought and because they can report the arising of the thought

earlier you can actually track back in general activity earlier than you could with an individual who didn't have that capacity and one of the things we found was that certain kinds of memory systems involving the hippocampus and para-hippocampus are active very early in what looks like the antecedent activity to a thought, so these thoughts are in a way arising out of ongoing memory processes, so this is the kind of thing that working with meditators you can investigate in a way that you couldn't investigate so easily with other subjects and the term for this that the neuroscientist, Francis Covarella, introduced was neuro-phenomenology, so the idea is that you're using individuals with meditative skill as phenomenological experts so that you can then have a back and forth collaboration with neuroscientists, so it's a bit, just to give you an analogy, it's a bit like all human beings are able to move in various different ways, and if you study movement you can study it in many different settings, one way to study movement is to study say individuals who are highly accomplished dancers, for they have much more precision of movement and they can describe what they're doing and why they're doing it and how it feels in very refined ways that others can't do, who don't have that kind of training, so the analogy would be that certain kinds of meditative skills provide an ability to make those kinds of reports for the ongoing stream of mental activity, involving let's say for example fluctuations of attention.

[0:17:27.5] Aaron: Great, thank you, so it sounds like a collaboration that meditators know what they know, have a method, it's like they come with their own microscope.

[0:17:43.1] Evan: Yeah, I like to think of it as a skill, they have a skill, a practice, a discipline, and the interesting thing about the skill or practice or discipline is that it involves and artists, to some extent of course also have this kind of skill, depending on the artistic practice, they have a skill that involves sensitising them to subtle shifts in attention and awareness, and they can describe that in a way that for a neuroscientist or a psychologist studying cognitive function, that's very important and relevant information, so it's a way of thinking about the work with meditators not so much under the guinea pig model, you know put them in the brain scanner see what lights up, rather as collaborators, that is as individuals who have a certain kind of skill and discipline that's relevant to the cognitive science questions and we need to work together to enrich our understanding.

[0:18:37.2] Aaron: Is there reason to think that those processes would be different in meditators? That is the question of whether you can generalise what happens to meditators to everybody.

[0:18:49.0] Evan: Yeah, so again the analogy would be a bit like the trained dancer, so the trained dancer has a skill that is open to varying degrees to everybody who has a certain range of movement and even individuals who are disabled can still learn and become accomplished in certain forms of movement practice, so I don't mean it to be restrictive to so called normal, able individuals, so the analogy would be that there are skills and practices and disciplines that provide information about the full repertoire of human possibilities. So of course you wouldn't want to say that someone who's practiced meditation for twenty years, that you can just generalise off of such an individual to someone who hasn't practiced meditation, that's not really valid, but rather the point is that meditation is part... the skills, the cognitive skills that go into meditation practice are part of the full repertoire of the human mind, so in studying the human mind it provides important information that we wouldn't be able to get elsewhere. The other one qualification that I would want to say is that in terms of really hard, scientific evidence that these attentional capabilities are a result of meditation, that's still in some sense an open question because you might say well, individuals who have certain attentional inclinations or capacities are going to be more likely to be drawn to meditation, as is individuals

who have certain movement possibilities are going to be more likely to be drawn to certain forms of dance or sports or martial arts or whatever it might be. So there's a complicated relationship between the antecedent individual differences and then what happens to training.

[0:20:45.6] Aaron: Thank you, so given that a lot of, at least a lot of the scientific investigation of meditation that I know of is in <inaudible 0:21:03.7> of the brains of meditators, the activity of the brains of meditators, do you think that science at this point, and I would say the western tradition, including not specifically laboratory investigation, science has inside sort of tools to offer meditators at this point?

[0:21:24.2] Evan: I think potentially yes, but I think we need to be cautious. I think meditation is first and foremost a kind of practice that takes place in a community with individuals that have experience that they can pass on instructionally or through modelling a certain kind of practice to other individuals and I think that as we gain more scientific information about all of the things that go into that practice, the biological, the social, the cultural, and that can feed back into ways that we can alter meditation practices for whatever ends or aims that we might have, but I would be cautious about for example the idea that well we can create meditation apps or neurofeedback technologies that will help us be better meditators, I'm very sceptical of that because meditation in the Buddhist sense of <inaudible 0:22:35.6> of mental cultivational practice, is a way of trying to familiarise yourself with your mind, and the minute that you put in any kind of instrumentation, there's a way in which you are moving away from that intimate familiarity and you're viewing it through a kind of instrumental reason or instrumental perspective, so this is also why I don't like the analogy of meditation as a kind of inner telescope, because it takes an instrumental metaphor and uses it for conceptualising our relationship to our own minds, which I don't think is instrumental in that way, I mean it can be instrumental on occasion, but I don't think it fundamentally is instrumental. So I'm very cautious about that. So the summary answer to your question would be yes, in principle, but it wouldn't just be neuroscientific, it would have to be much richer and it would always be in the service of some end or aim or purpose, it wouldn't be stateable in scientific terms, it would be a matter of ethics, of our aspirations and motivations and those are what we really have to keep in place when we try to bring to bear any kind of scientific information into our understanding.

[0:23:55.1] Aaron: Thanks, it makes me think that the idea for a sense of bio feedback to assist meditation reduces meditation to a brainwave pattern. So the biofeedback can help you get the brainwave, but the point of meditation is largely the process you go through to get that pattern, so it's sort of like flying in an airplane and saying you can fly, so big deal.

[0:24:20.7] Evan: Yeah, or you know in the case of big expensive technologies like FMRI, where you can do some interesting experimental work with neurofeedback, the idea that you would want to use something like that to improve meditation is a bit like you know using a chainsaw to cut butter, it's just his huge technological structure that's not really meant for that, that's not its purpose.

[0:24:47.9] Aaron: So I'd like to ask you about one sentence near the end of your book, Waking, Dreaming, Being, that is very evocative and very packed to me and just ask you to explicate it, the sentence is this: The waking world isn't outside and separate from our minds, it's brought forth and enacted through our imaginative perception of it.

[0:25:28.0] Evan: Okay, so one level would be let's say experiential and that is that whenever we talk about the world and what we find in it, it's always relative to some perspective, to some place of interaction, to some context in which we find things meaningful, very much also again social and cultural, and it's not as if there's a world out there that we perceive because it is the

way it is independently of us, rather how it shows up for us is a function of how we perceive it, and how we perceive it depends on our ongoing imaginative configuration, so of course in the case of a dream by analogy this is very vivid, everything in a dream is a kind of imaginative construction, and the point isn't that everything in the waking world is an imaginative construction in that sense, but rather that our perception is shaped by the kind of meaning that we bring to it and meaning is something that has to do with the images that we have of things, the emotions we feel, the body resonances, the way we experience the world because we have a body with a certain kind of structure, so those are on the experiential level. On a more scientific level I would say that, I mean this is a bit of a caricature but a classical cognitive science perspective is that you know the world is the outside world, it's independent of us, it has certain features or properties, the job of cognisism is to represent them in an internal map or an internal symbol or an internal representation and the view that cognitive science has really evolved to over a number of decades is much that anything that as it were comes into the cognitive system, that stimulates it, has the meaning it has because of the ongoing endogenous activity of the system, whether it's the brain, or the brain and the body working together. There's experiments just this year published that show that brain rhythms are coupled to heart rhythms and when you present a stimulus in relationship to not just the brain rhythms but the heart rhythms affects whether the stimulus is seen or not seen, so there's a whole somatic, rich somatic context within which anything shows up for us, and so it's not as if its stimulus, internal representation, output. So that would be another level and then in the end of the book there with that sentence I'm trying to weave in a sort of summary way, some of the things that I've talked about in the book, that are from a neuroscience or cognitive science perspective and that are from the experiential or phenomenological perspective.

[0:28:28.0] Aaron: So I think it's intuitive to anybody that, like I have a cold today, the world is not quite as intense and bright and my body kind of looms large in my reality today because I have a cold, and if I get very bad news that changes my experience of the rest of the day, if I get very good news it changes is. It seems that to say the waking world, I mean even to say waking world opposed to the world that's there whether you're asleep or not, implies that we're creating something and there's this word that you use of enacting, that's more than just colouring things, it includes, I think, that I have a cold so my world is different, it's more than that, it's more profound than that and at the same time you're not saying that the computer I'm looking at is a hallucination.

[0:29:42.1] Evan: Right, yeah so enaction is the idea of bringing forth something through action. So the idea that cognition is enaction is the idea that when we perceive or when we imagine, that the meaning is created in the action of the perceiving and the imagining, it's not dictated from the outside in a sort of classical stimulus response manner. It's not to say that the outside world is an illusion, that it's just a kind of fabrication of the mind, it's to say that when we try to find what the mind is or what the world is, and we try to pin it down analytically, the other one always pops up for us, there's a kind of co-dependency or to use a Buddhist idea, dependent co-origination, where when you try to trace you know a light stimulus and how it becomes experienced as a world of colourful objects, well of course it depends on the physics of the light and the optics, but it also depends on the structure of the body, the associations that have been created through a developmental history of the individual, of the organism and also of the species, and so the world in an experiential sense, what we experience as being, so we experience space as having up and down and left and right and forward and backward, if you were just to look at the world from the perspective of a kind of god's eye view, from the outside, there would be nothing that would make space have that kind of structure, that structure gets sculpted out of our having the kinds of bodies that we have. So that's the idea of enaction, enaction is a sort of word that's meant to cover that whole idea that we create our, or let's put it

this way, that our world is brought forth through the coupling of ourselves with other beings and with the cosmos or the universe.

[0:31:54.5] Aaron: So that's sort of the end point you get to in the book, but it's also the starting point, because in a world like that how could meditation be inside your brain?

[0:32:04.1] Evan: Exactly. That's right, exactly, that's nicely said.

[0:32:08.2] Aaron: So a last question, which is mostly really for you as a yogi, for you as a practitioner, you have spent a lot of calories and a lot of time in your philosophical investigation of reality, thinking about how things are and finding ways to say how things are as accurately as possible, yet you also have a meditation practice and a dream practice and I'm sure other contemplative tools, <inaudible 0:32:46.9> etc. and some people do that as a practice and some people don't. I'm interested in how those go together and how you see your path as a practitioner, contributing... what's the contribution of your philosophical investigations and creations to your path as a practitioner?

[0:33:17.1] Evan: Well, I see them as very much complimentary. I see really philosophy in its deepest inspiration as being a kind of contemplative practice, if we look at philosophy in the ancient world, whether its Greece or India or China, philosophy is a kind of contemplative questioning that's oriented towards how to live the good and wholesome life, and meditation in the way that we sort of use it today in a more restricted way, oh you're meditating when you're sitting on a cushion, in a group or in a sangha, I mean that's important to me because it's a way to quiet the mind and to share a practice with others, and when you quiet the mind to do that, all sorts of things can happen in terms of your just creative activity as a human being, so it's a sort of inspiration and creativity for me, but I also see it as a necessary practice to tap into that contemplative depth of philosophy. Of course philosophy in the modern academic world is about argumentation and writing and a lot of it is very much bound up with science and I think that's all, you know I have no quarrel with that, I think we learn a tremendous amount from doing that kind of intellectual work, but I really see it as needing to tap into that kind of deeper, contemplative inspiration, so in that sense it's the sense in which I see them as complimentary. I would also say that I think you know we're a mystery to ourselves and the world is a mystery and we can... if we were to just practice meditation without keeping hold of our critical perspective or critical faculties, I think we could very much get a distorted understanding of what's happening in meditation, what's happening in meditation is of course what we experience, but we can learn a lot about what's going on when we experience things through other kinds of investigation, philosophical, scientific, anthropological, I think that's especially important as well, so I see it all in really enriching our human self-understanding ultimately.

[0:35:49.3] End of audio.