

Evolutionize Your Life: Michael Dowd and Connie Barlow

Week Five

Connie Barlow: Welcome to Evolutionize Your Life. This is Connie Barlow.

Michael Dowd: And Michael Dowd.

CB: And here we are at the final session, session number five, cocreative instincts.

MD: Our prefrontal cortex's zeal for wholeness, transcendence, and contribution.

CB: So thinking mythically of these five sessions as a whole, we've come to the culmination of our hero's journey, and we've got good news in this part.

MD: And that's because we're talking about our prefrontal cortex, the most recently evolved part of our brain, and the part of our brain that's concerned with pretty much the basics of everything we identify with spirituality, the divine, wholeness, and all the positive aspects of our experience, of our lives, and the things that touch us most deeply in a positive way all have a grounding deeply in that prefrontal cortex part of our brain,.

CB: Everything that we associate with civilization has to do with the fact that even though the other great apes in addition to us -- that is, the chimpanzees, bonobos, and the gorillas -- have pretty much just as a big a prefrontal cortex as we have, our human prefrontal cortex has far more connections with the rest of the brain components than theirs do. And what that means is that we can live in highly social, complex, challenging situations.

MD: Because one of the aspects of the prefrontal cortex is handling all that complexity, and doing so in a way that allows us to sometimes do the harder thing. In fact, whenever we have to do the harder thing, not just do the easy thing, our prefrontal cortex is engaged.

CB: Doing the harder thing is basically the way that the primatologist and neuroscientist Robert Sapolski describes the prefrontal cortex. That is, if you're doing what comes naturally or feeling like you're on autopilot, you're really not needing to engage that prefrontal cortex, but if you're going against your deeper urges in some way and fulfilling a higher value that you have taken in and incorporated in your life either because you personally want to or because your society as a whole pretty much mandates that of you, then you are using your prefrontal cortex. You're using your executive function. What that means sometimes is that you're primarily just controlling your impulses, saying no to something you naturally want to say yes to.

MD: Otherwise spoken of as delayed gratification.

CB: The other place where it comes in is something that we easily call free will, and that is when we know we're making a choice. Evolutionarily, brain scientists suggest that there's two reasons why the great apes and us have developed a prefrontal cortex. One is social complexity -- that is, you really have to figure out challenging situations -- but the second one is that you have competing drives, competing urges. So whenever you have let's say your furry little mammal, your social part of your brain, urging you in one direction, but your lizard legacy, your base physical instinct, is urging you in another direction, the monkey mind is challenged, because it cannot fulfill both demands at the same time. So, the prefrontal cortex is called in. You come out of autopilot mode, you realize you need to make a choice, and you do make a choice. Also, within social contexts, you might have an obligation to one particular person in your social milieu and have a different obligation to another one, and those two may end up competing. And so again, your prefrontal cortex is brought in to make a choice. It's the choice-making part of our brain.

MD: That's one of the reasons why the prefrontal cortex is often referred to as the executive center, or where the executive functions happen in the brain. And as I mentioned in my Evolutionize Your Life program, which I'm assuming most of you have watched by now, it was in session two, the executive function of the prefrontal cortex,

what we're humorously calling the higher porpoise, is concerned with our sense of higher purpose. It's concerned with our sense of higher purpose, it's our sense of serving something larger than our own animal needs. It's also where our sense of good judgment or poor judgment comes from. It's the last to develop in young people. It typically doesn't fully develop until the age of 23-25, and of course parents know that and car insurance companies know that. That's one of the reasons why if you're under 25 and a man, you can't even rent a car, because you don't have a fully developed prefrontal cortex, you don't have good judgment, and yet you've got a lot of testosterone, so you're probably taking greater risks, and you're a danger for the insurance company.

CB: Now, even though parents and certainly car insurance companies have known about that a long time, that the judgment is impaired in teenagers -- even though their hormones are up, they have a physically mature body, it's not just that they lack experience, but they lack a fully developed prefrontal cortex. They're missing that online executive function. In 2004, the US Supreme court in a landmark case made it illegal nationwide for any state to institute the death penalty for anyone under the age of 18, no matter how horrible the crime, and basically what happened is that the neuroscience with functional MRI technology and other research had come to the point of basically being able to say, this brain is deficient.

MD: That is, it's not entirely their fault. There's a deep biological brain deficiency contribution involved.

CB: And that's where the mismatch between our instincts and modernity comes in. It's not that long ago -- some of us certainly have grandparents or great-grandparents who never received an education beyond eighth grade, and that was normal in their time. Eighth grade, you're an adult, you head out into the world, and you're not running around in peer groups anymore in a school situation where you can get into trouble. Basically, you're out in the adult work world. You've got a boss you're working for, you may be apprenticing to someone, and in the past, the fact that the prefrontal cortex wasn't really highly engaged yet wasn't much of a problem. But now with drugs, now with teenagers having very little to do with the adult world, it's really a mismatch.

MD: And not just drugs of course but all of the different supernormal stimuli that we've already discussed -- television, video games, internet pornography, and a whole host of ways that we can become addicted or entranced or waste time and energy and money in things that don't serve us because of things that we're evolutionarily programmed to pay attention to that our ancestors didn't have to deal with, yet we do have to deal with.

CB: So again, the prefrontal cortex is surmised to not fully develop until somewhere between the ages of 22 and 25. Now, not long after the Supreme Court ruling in 2004,

Michael and I were doing presentations somewhere where a high school counselor came to one of our programs. And the woman told us this story. She said as soon as that article came out on the Supreme Court ruling, she taped it to the refrigerator, and she told us at one time, her 15 year old daughter came in and said, "Mom, I want to go to this party and stay out until 1:00." Well, her curfew was at 10:00. Mom didn't even have to say anything. She just indicated come into the kitchen, pointed to the refrigerator, and the girl rolled her eyes and said, "Why does my mom have to be a guidance counselor."

MD: And so here what you've got is a situation where the wider community is helping to serve as the prefrontal cortex, or the external prefrontal cortex for this teenage girl.

CB: So yes, it may not take a village necessarily to raise a child, but it sure does take one to raise a teenager.

MD: So here we are talking about the higher porpoise, the higher purpose, our prefrontal cortex, which is that part of our brain right behind our eyes, right behind our forehead, basically. Let's just review where we've been. In week one, we discussed the big picture, our larger story, that we are the universe becoming conscious of itself, that humans are not separate from nature, we're a part of nature, that just as apples grow out of an apple tree, human beings grow out of the dynamics of the planet, we grow out

of the dynamics of the universe, that we're a fruit of the universe, and profoundly interconnected and interrelated to all of life. We also took a look at the hope that can bring, and the inspiration to be in action, because we know that we're part of something larger, something grand, and our lives can make a difference, no matter how large or small the playing field that we may think that we're on.

In week two, we discussed our reptilian brain, our survival instincts for safety, sustenance, and sex -- we call that our lizard legacy. Week three we discussed our social instincts, our relational instincts. This is our old mammalian brain, our furry little mammal's instincts for bonding, for attachment, for love, for relationship, for play, and for status. In week four, we discussed our neocortex, that is, our monkey mind's instincts for interpretation and for figuring things out and for predicting. And here in this week, our final week, week five, we're discussing our prefrontal cortex that we refer to as our higher porpoise, our higher purpose.

And so just to bring back a distinction that was introduced earlier in the course, the distinction between day and night language that I also talk about in my book, *Thank God for Evolution*, the day language is just descriptive, measurable scientific language, the everyday speech that we use to talk about the real world, the natural world, the physical world, without emphasis on interpretation. Night language is the language of our dreams, of poetry, of symbol, of myth, of religion. It's evocative, it's imagistic, it helps us to engage our emotions and our sense of meaning, our sense of values, which is

often trivialized if interpreted literally. And so obviously when we talk about our lizard legacy, our furry little mammal, our monkey mind, our higher porpoise, we're in the realm of night language, we're in the realm of poetry. But as there's pretty much one way, or a very narrow range of ways to talk about anything in day language, the descriptive, scientific type language, there are a multiplicity of ways to talk about things in night language. For example, as my son Shane introduced, Larry the Lounge Lizard, or as Connie talked about, our inner iguana are other ways of metaphorically -- that is, using night language -- pointing to what we initially called our lizard legacy, or our reptilian brain.

I'm saying all this because there are two *New York Times* bestselling books that use a different analogy, a different metaphor, different night language that's also really valuable, so we want to mention it here, because we highly recommend both of these books. One of them is Jonathan Haidt's book *The Happiness Hypothesis*. It's probably the best book out there on positive psychology, and he uses the analogy of the rider and the elephant, the rider being what we would call the neocortex and the prefrontal cortex, the relational part of the brain, and the elephant being the old mammalian brain and the reptilian brain, the emotional brain. And so this distinction between the emotional brain that is the elephant and the rider, and the relationship between an elephant and a rider is a very useful one, so much so that Dan and Chip Heath wrote another *New York Times* bestselling book -- in fact, it's currently on the *New York Times* bestseller list -- which is called *Switch: How to Change Things When Change is Hard*. And they take this

metaphor of the rider and the elephant even much further than John Haidt did in practical directions.

I just want to stay with this for a minute, because when you think about a rider on top of an elephant, think about a huge elephant with a human being on top with reins, trying to guide the elephant in a particular direction. Now, the rider thinks it's in control. That is, the rational part of the brain thinks it's in control of the emotional part of the brain. But in fact, the rider is only in control if the elephant doesn't have strong desires of its own. If the elephant wants to go in any particular direction, because there's an elephant it's attracted to, or because there's food and water in that direction or whatever, the rider will almost always engage in what it instinctually will do, which is to interpret its experience. And so let's say the elephant wants to go over that direction, for whatever reason. The rider will almost always say something like this -- we're going this way because, and then will make up a reason that will seemingly be plausible to the brain of why the elephant's going that way. But the fact of the matter is, the rational part of the brain often isn't privy to why the elephant -- that is, why the reptilian and the old mammalian parts of the brain are doing what they're doing. That's where the self-deception comes in. the rider thinks it understands, but in fact often it doesn't understand. And understanding this relationship between the rational part of the brain and the emotional part of the brain, between the rider and the elephant, can go a long way. Connie and I find this a much more useful model, a more useful set of night language than for example speaking about the shadow or the ego or the sinful nature or other metaphors that have been used throughout time.

CB: Again, when the going is easy -- that is, the furry little mammal or the lizard legacy aren't offering up any urges that are in conflict with one's higher values, one's higher purpose -- everything's pretty smooth. The rider and the elephant are moving together, and you can go on autopilot, it's not very difficult at all. But when you get in a situation in which the furry little mammal, let's say, and your higher purpose are in conflict, or the lizard legacy and the furry little mammal are in conflict, and they've each been sending up demands to the monkey mind to figure this out, go in this direction, and the monkey mind can't accomplish the goals of both at the same time, the prefrontal cortex comes in, the rider comes in, and this is why this part of the brain is so necessary to normal societal human functioning.

MD: It's also why there can be a respectful relationship between the rider and the elephant. The rider may never fully master the elephant in a masculine master sense, but the rider can certainly tame the elephant. The elephant can be tamed to serve the wellbeing of the person as a whole, and that's what we're seeking to do in this course, to really give you the knowledge coming out of evidence, coming out of what we know through a whole range of sciences, so that you can have an honorable and an honoring stance toward your instincts, and thus befriend your instincts. It's as though the rider's befriend the elephant, and the elephant in that sense becomes tamed in the sense of the elephant can then serve the rider, the rider serves the elephant, there's a mutualistic relationship so that everyone benefits, and there's not the conflict between the two.

CB: About three weeks ago, Michael and I went out to see the movie *Water for Elephants*. That's the one that Reese Witherspoon is in, and there's amazing images of Reese riding an Indian elephant in a circus, and the climactic scene comes when the elephant goes out of control and Reese can no longer direct the elephant, and it starts going wild. Finally, the elephant rushes out of the circus tent, Reese grabs the pole above the large door, starts swinging on it acrobatically, jumps off the pole and smiles to the crowd as if that was all orchestrated, as if that wild elephant was actually performing what it was supposed to do. And so remember last week, remember about justification, rationalization? It's a perfect example in that film how if you lose control, if you as the rider, the prefrontal cortex, lose control of your elephant, you can very well end up into rationalizing, justification, and even self-deception where you think you wanted the elephant to go that way.

MD: So, to close off this little segment here on the rider and the elephant, I want to read a couple passages from John Haidt's forthcoming book *The Righteous Mind*. About a month ago, he sent me the manuscript, and I'm loving it, and here's a couple quotes.

"When I began writing *The Happiness Hypothesis*, I believed that happiness came from within, as Buddha and the Stoic philosophers said thousands of years ago. You'll never make the world conform to your wishes, so focus on changing yourself and your desires. But by the time I finished writing that book, I had changed my mind. Happiness

comes from between. It comes from getting the right relationships between yourself and others, yourself and your work, and yourself and something larger than yourself. Here in this new book, I explain why happiness comes from between. In this last section, I introduced Darwin's idea of multilevel selection. We evolved to live in groups. Our minds are finely designed to help us win the competition within our groups, and also to help us unite with our groups to win competitions across groups. Here I push the idea a step further. I present the hypothesis that human beings are conditional hive creatures. I argue that we have the ability under special circumstances to forget our self-interest and lose ourselves temporally and ecstatically in something larger than ourselves. I call this ability the hive switch. I link the hive switch to Durkheim's idea that we are homo-duplex. We live most of our lives in the ordinary profane world, but we achieve our greatest joys in those brief moments of transit to the sacred world in which we become simply a part of the whole."

CB: So, for this introductory part to session five on the prefrontal cortex, that is, what is the prefrontal cortex, its role in executive function, problems for teenagers with it, we've got several resources that we recommend on the main resources page for session five. There'll be a couple short videos with neuroscientist Jonah Lehrer where he's explaining the prefrontal cortex and what we've learned about it very recently thanks to functional MRI, and we also have two contrasting examples of how things can go right, very right, with the prefrontal cortex, and how things can go wrong -- that is, where the rider really has lost control over the elephant and starts engaging in self-deception.

The first one, of what can go right, is something that happened in 2009. It's a story I'm sure we've all heard about, and it was the Airbus that lost both engines soon after takeoff at LaGuardia Airport in New York City and had to land in the Hudson River. And Captain Sully Sullenberger exercises what he called deliberate calm, and that is that his prefrontal cortex had gained such control over all the possibilities in training of what can go wrong with a plane that when the amygdala started flashing fear for everyone in that plane, he was able to reroute his thinking to ignore the fear and get straight on with, what can I do now, and engage the monkey mind in helping him figure out, and the rider was totally in control.

MD: And I think what that points to is the absolute necessity of exercising our prefrontal cortex. That is, when we give our higher porpoise an opportunity to practice doing the harder thing, it's like exercising a muscle so that when we need that muscle in times of stress or times of unexpected chaos or whatever, that strong muscle is there. We can do the harder thing and do it much easier than if we haven't exercised that. For example, that's why Connie and I recommend the spiritual of fasting -- that is, choosing to go without something that you normally go with, whether it's fasting from television if you normally watch television, or fasting from speech for a day, or fasting from food for a day, or even fasting from food for one meal or two meals, fasting from sex if you're in a sexual relationship -- going some period of time without doing what you would normally do, what you would instinctually do, what you would effortlessly and easily do.

And choosing to do that, it's like exercising that muscle, that prefrontal cortex. It's like giving your higher porpoise a workout so that when you need it in times of stress or chaos, it's there to serve you.

CB: So, what can go right with the prefrontal cortex, Captain Sully Sullenberger can go right with it. But, the other resource we're pointing out is what can go very wrong, and it's a very sad article just about five months before the self-help author M. Scott Peck died at the age of 69. He was engaged in an interview that was published in the *London Times*. Now, M. Scott Peck is the bestselling author of *The Road Less Traveled* and subsequent books, and the sad part about the interview, which was titled "Gin, Cigarettes, Women: I'm a Prophet, Not a Saint," is that the very things that Scott Peck was urging upon his readers, he himself was incapable of doing, and he admitted it.

MD: In a very real sense, Scott Peck is the poster child of where cluelessness of our instincts will lead, because his book *The Road Less Traveled* to this day holds the record for the most weeks on the *New York Times* bestseller list, and one of the things it's known for, and one of the things he was known for preaching, is that a huge aspect of spiritual growth is delay of gratification, and yet he was incapable of this himself in large part because he still had mythic understandings of what was going on under the hood. He lacked an evolutionary understanding of his own instincts, and thus he died miserable, and a lot of the people around him, even his own family, found him difficult if not impossible to relate to.

We see this same thing among religious leaders of all kinds, east and west, this inability to actually live in deepest integrity, to be a shining example of what they're trying to teach, in large part because without an understanding of our evolved nature and an honorable stance toward our own instincts, we fall victim so often to being self-deceived and being actually hypocritical, out of integrity with our own message, because we can say it, we can think it, we have difficulty living it unless we understand our instincts and honor those instincts, and then know what it takes to live in right relationship to our world in light of that.

CB: Now, when Michael talked about exercising our prefrontal cortex's capacity to choose to do the harder thing, one of the things that can be very helpful in this regard is simply using the prefrontal cortex to develop a witness capacity. Of course airline pilots like Sully, that's what their training is about. It's tremendous training for exercising that muscle. A lot of people do it through meditation, insight meditation. What Michael and I have found is just this evolutionary perspective makes it possible for people to use their understanding, their monkey mind, in a way to give them that witness capacity.

MD: Yeah, and I draw your attention back to the end of that first half hour of my Evolutionize Your Life video, which is on the resource page for session two, the story that I tell, and the quote that I have from Connie's niece, Halsey Barlow. So, if you haven't seen that in a while, you might want to go back and check that out, because

there you see the witness capacity that Halsey as an 18 year old had just by coming to understand her evolved brain.

CB: We called it the Parable of the Pickle Jar.

MD: Right, you'll remember it, the Parable of the Pickle Jar.

CB: One of the things that delights Michael and me about this evolutionary perspective, this perspective of using evolutionary insights to understand our brain, what's going on inside of us, is that it's something even children can do, and do very well. For example, a high point of my work with children was one context where I had shown kids the picture of all these animals within the brain and then brought out the puppets and given them the basic understanding of the functions of each of these four parts of the brain. A couple weeks later, I received an email from the teacher, who also happened to be the mother of one of the children in that class -- it was her first grade son. Now, Michael tells the story better than I do, so...

MD: When we talk about our reptilian brain, our lizard legacy, to first and second graders, as Connie does with her puppets, we obviously don't talk about sex, we just talk about safety and sustenance. And of course our monkey is always trying to figure things out, and the thing about the reptilian brain, our lizard legacy, is that you know

when you find yourself gravitating toward the refrigerator when things get stressful, and you open up the refrigerator and take out the ice cream and you think, no bowl needed. It's because for 99 percent of our history as mammals and humans -- 99.9 percent -- if you were stressed out you might need a lot of energy, you didn't know when you were going to eat again. So, eating when we feel stressed out makes sense, and that's why for the vast majority of us, it's something that's there for us.

Well, this first grade boy comes home from school about two or three weeks after Connie had done her program, and says to his mother, "Mommy, we had a fire drill in school today." Try to remember your first fire drill ever. This is the kid's first fire drill in his entire life, so this was a big deal. So, his mother said, "Tell me about it, what was it like?" He said, "The sirens were all blaring and we all had to go out into the street, and I told myself, monkey mind, calm down, lizard legacy, you're not hungry." Monkey mind, calm down? Lizard legacy, you're not hungry? This is a first grader. And the thing is, what part of the brain is doing the witnessing? Even though this little boy, a first grader, his prefrontal cortex was hardly fully developed, it was enough developed in this first grader, because that's where the witness capacity happens.

CB: Now, there's a really important practical lesson to learn, and an opportunity here when it comes to understanding the role of our prefrontal cortex, and that is that when you have a value, when there's something you want to accomplish, or a way of being you want to have yourself move toward even though you have urges urging you in

another direction, you want to transform your life in a way in which you have a new behavior or objective, it's not enough to just commit to it, to give that to our prefrontal cortex and take it in there. The prefrontal cortex needs assistance, and the wisest thing it can do is find ways to make the furry little mammal and the lizard legacy want to go along for the ride. That is, you find ways to give them benefits from transforming in the way that you want your life to go. Basically, your higher purpose needs to get the buy-in from the furry little mammal and the lizard. The rider simply cannot do it unless it can get those powerful, deeper parts of our brain to go along with the program.

Now, the good news here is that there's already a lot in teenagers' lives that give them an opportunity to exercise their prefrontal cortex, to grow that muscle at the very time that their brains are transforming -- hugely important thing to do, and that can keep them out of trouble during the process. And that is, all of the things where teenagers are willing and interested to invest their time in an activity, even if it goes against their urge to be lazy, to eat whatever they want -- and I'd say probably the best example we have of this are some of the sports that are offered in junior high and high school. I have a nephew who was willing to get up, his last two years in high school was willing to get up at 5:30 in the morning every day in order to practice with the swim team. That's a huge exercise of the prefrontal cortex.

MD: Basically every time that your teenager or you or anyone you know of does something that's difficult, that's not easy, and especially that's working with others or in

some way because of a commitment to a team or a commitment to something larger than themselves, some project or goal or mission or purpose that's larger than just their own animal needs, they are in fact, you are in fact exercising your prefrontal cortex. It's like giving that higher porpoise a good workout.

CB: Here's a story. I was working with a group of young teens, and had just finished introducing them to the idea of higher porpoise. And so I asked the kids, do any of you have a higher porpoise that you're following now, some activity that's really important to you, and that you sacrifice for? One girl pointed over to another and said, "Her higher porpoise is running." That girl immediately said, "That's not my higher porpoise, that's my dad's higher porpoise. He got me into it." And I said, "Why do you stay in? What keeps you going?" And the first girl said, "She's a great runner. She gets trophies for it." And so I looked at the running girl and I said, "So your furry little mammal gets higher status, feels good?" And the girl smiled, nodding her head, and everybody just burst out laughing.

MD: So, another practical take-home lesson is this, that willpower is a weak way of producing behavioral change. What's required is an investment of your goals or standards with benefits to the furry little mammal and the lizard, or to go back to the rider and the elephant, there needs to be benefits to the elephant. For example, that's one of the gifts of 12-step or other recovery programs that work. One of the reasons why they work is because it draws on our furry little mammal, our sociality, that when I

say I'm committed to something, and there's a group of people that I'm accountable to, there's the energy of wanting to look good, fitting in, having the support of a sponsor, the support of others. It engages the full brain.

CB: More than just the accountability that a recovery group can give is the fact that if you slip, there may be consequences for your family, for your intimates. There are no consequences to your support group. You won't be banished, you'll be welcomed back.

MD: So, here in this session five, one of the things we're dealing with that's really important is how the prefrontal cortex is essential for giving us an honorable relationship to time and death.

CB: Basically, once we become aware of death and what it means for us and our loved ones, we have to find a way to deal with it. Michael and I won't be saying much in this introductory audio about the content of this evolutionary understanding of death and the practical ways for coming to terms with it, but you'll find a lot on the main resources page. And for this page, you'll find it's mostly me. This evolutionary understanding of death is probably one of my main contributions to this epic of evolution, meaningful evolution movement. It's something that I've produced a number of videos on. You'll find some songs and some litanies.

MD: And what I think is her greatest contribution is a children's story, "Tree Talks About Death."

CB: I've also written an evolutionary parable on death and stardust, and it's called *Startled: The Story of an Average Yellow Star*, and that's actually been used in intergenerational church services. I find it's a wonderful way for all age groups to talk about the naturalness, the creativity of death. That is, there's nothing wrong here with death. Without death at every level in the universe, there could be no life. Everything that we love and value in life is here because of the creative role that death plays, and this is only knowable thanks to science.

MD: And this is what I discuss in the second segment of my Evolutionize Your Life program. I get into *Death: A Sacred, Meaningful, Inspiring Way of Thinking About the Reality, the Existence of Death and Chaos in the Universe*. It's important to get that, coming to not only tolerate the reality of chaos and death, but actually honor the reality of chaos and death, to have this deeply respectful relationship to the reality of death and to our own mortality is one of the most important things we can do to have a great life.

CB: Now, on this topic of an honorable relationship with death and time, I'd like to hark back to an exercise that we introduced last session for the neocortex, and that is the exercise of restorying a painful event in your life -- that is, finding a way to interpret it

such that rather than being resentful or feeling like a victim, you actually can find a way that it contributed to your life. and for me, probably the main event that I've done that for is something that happened to me at the age of 13, and that's that my father died. He was actually buried on my 14th birthday. It was a terrible rite of passage for me, but now I attribute all the work that I've done, all my energy and interest in not only finding an evolutionary way of celebrating the fact that death happens in the world, but finding ways to bring this to children. Importantly, this approach of understanding death as natural and creative is not intended to lessen the grief we feel when we experience a loss, not at all. What it does is provide a cosmic container, a safe cosmic container so that rather than railing against the universe, we can fully and healthfully grieve.

Another vital aspect of the prefrontal cortex is that it's what makes civilization possible. That is, our prefrontal cortex in combination with symbolic language is what makes civilization possible. Without these gifts, we would only be able to accommodate cooperative, friendly relations with a group no larger than about 150 people, that would be it. But in order to be able to cooperate with larger groups of people, we have to expand our circle of care and concern, and that's where we see that our prefrontal cortex really does serve us.

MD: For example, two of the best books that I've read in the last five years are on exactly this topic, Jeremy Rifkin's book *The Empathic Civilization* and Frans De Waal's book *The Age of Empathy*. And you'll see a link to my over the top blog post on both of

them, as well as several videos, and I can't recommend these two books too highly, Jeremy Rifkin's *The Empathic Civilization* and Frans De Waal's *The Age of Empathy*.

CB: I love this quotation by primatologist Dario Maestriperi. He writes, "The paradox of a highly social species like Reece's monkeys and humans is that our complex sociality is the reason for our success, but it's also the source of our greatest troubles." Ain't that the case?

MD: So, the final component of this audio introduction to session five is related to our higher purpose, our higher purpose, our calling, basically our legacy, how we'll be remembered, what difference did our lives make, how are we a blessing to our world, how did our actions ripple forth to impact others in some kind of positive way?

CB: We're not going to say much about evolutionary legacy in this audio either, because we have an entire audio dedicated to that. It's a collage that I put together of four conversations/interviews Michael and I have had over the past year and a half, and it's all about this understanding of evolutionary legacy, including evolutionary activism. There'll be a link to that from the resources page, and it's called *Passing It Forward: Attending to Your Evolutionary Legacy*.

MD: And definitely take time to listen to that, it's great. Turning now to the exercises, the practices, where the rubber meets the road, where we actually put this stuff into practice in our lives in ways that help it become habitual. Typically a habit requires not just willpower, it requires the support of others. Peer support and accountability are two of the things that are essential for an effective habit change for most of us, with rare exceptions. For most of us, peer support and accountability are really vital, and typically about 21 days, it takes 21 days typically to break a habit or to start a new habit, to start a healthy habit. And so one of our goals in this course is to give you not just the knowledge of your own nature so that you can have gratitude and an honorable stance toward your instincts, but also so that you can have the tools to develop healthy habits in your life. Now, you're not going to necessarily do that without the support of others, so we encourage you to enlist the support of others, and to make use of the resources and certainly the exercises that we're talking about in each of these sessions. But again, healthy habits is something that's going to require exercise, and we certainly encourage you to do it, because you'll benefit the rest of your life as a result.

CB: As with the previous two sessions, you'll find on the session course homepage a link to a PDF that describes these exercises. The first exercise is called Menagerie of the Mind, and it was something that I stumbled onto several years ago when I was in conversation with someone who was telling me about a very traumatic event in his life. Now, one of the gifts that Michael and I have of traveling around the country is, we enter into a lot of conversations with people, and often about very deep issues. I was in conversation with someone who three months earlier had witnessed a terrible murder

and who was suffering from PTSD, and who also was suffering from the what-if's -- that is, thinking about if he'd only done something differently, maybe the killing could've been stopped. As he began to tell his story, I asked him to not use the word I, rather to use one of the four parts of the brain, depending on whichever part of the brain seemed to be in control at that moment. And the amazing thing was, we both witnessed how his actions during that time worked exactly up in the way as evolution had happened with our brain, starting off with the fear response in the lizard legacy, moving up into the social cooperation mode, the furry little mammal, the monkey mind then trying to figure things out, and then finally moving into the prefrontal cortex, where he was proud of what his actions were.

Not long after that conversation, I had an opportunity to talk with someone who was a counselor in a Veteran's Administration hospital working with PTSD soldiers returning from Afghanistan, and when I told her about this exercise, she got very excited about the prospects of taking it back. So anyway, this is something that you too might benefit from, and you'll find it as exercise one, Menagerie of the Mind.

MD: The next exercise relates to the death component of session five. We're calling it Making Peace with Death Day. You'll see a full description of it in the PDF for the exercises, but I want to say just a little bit about why we see this exercise as so important. Many spiritual practices speak about having death, or the awareness of death, or awareness of the possibility of death, or your own mortality as a guide, as a

counselor, and a very easy way to think about that is, if you lived each day with the awareness that this could be your last day, or if you lived each year with the awareness that this could really be your last year, how would you live? What would you do, what would you clean up from the past? What would you say and who would you say it to, to the people that mattered most to you so that you could be at peace knowing that you are going to die in a year, or tomorrow.

The third exercise we're calling Letters of Gratitude: Communications that Transform Lives and Relationships. The fourth exercise is Your Great Joy, the World's Great Needs. It's finding those places of connection where your joy, your great joy, and the world's great needs intersect. I describe that exercise more fully in the Passing it Forward audio you'll be listening to. And finally, the last exercise in this session is Mentoring. One of the great gifts that we can give ourselves and our world is to simply teach another something that we know, or a skill that we know.

CB: So closing off this introduction to session five, Cocreative Instincts: Our Prefrontal Cortex's Zeal for Wholeness, Transcendence, and Contribution, here's the intent we have for this session, learning and appreciating the vital function of our distinctively human prefrontal cortex, and establishing priorities and putting the brakes on harmful tendencies of the deeper ancestral drives. Also, appreciating the inevitability of death as empowering us to live now, and in a way that will leave a sweet legacy.

MD: And our desired outcomes for this session include ascent. I accept that there are competing urges and drives within me, and that setting and living my priorities is vital, even if doing so is sometimes neither clear nor easy. I accept that death is a natural and generative part of the cosmos.

CB: Appreciation. I am grateful for my ability to reflect and choose carefully, and also for the nature, nurture, and life experience that helps me choose more wisely and compassionately as I age. I'm also grateful for the impetus and poignancy that death awareness offers me in living and loving fully.

MD: Honor. I honor my larger self, my ancestors, future generations, and my legacy every time I choose to live wisely and fully, ever mindful of the possibility that this year, this day, may be my last.

CB: Witness. I periodically remind myself of how brief a single life is. I bring to mind those loved ones who have already died, and I remind myself that the good and bad consequences of my own actions and ways of being will continue to ripple onward and outward long after my own life is over.

MD: Joy. I remind myself that I am an expression of this amazing 13.7 billion year process. I'm not separate from nature, I'm a fruit of nature, and I'm alive at this amazing time in cosmic, earth, human history. What a privilege.

CB: Societal benefit. I look for opportunities to put my gifts into action, and thereby honor my ancestors and bless the generations to come.

MD: We'd like to close this session with a litany. Is this a universe we can say yes to? Stars are born and stars die. Along the way, these stars fashion the very atoms of our bodies. Is this a universe we can say yes to?

CB: Mountains are born and mountains die. Along the way, these mountains create the particles of sand and clay that blend with dead plants to become soil. Is this a universe we say yes to?

MD: Glaciers come and glaciers go. Along the way, they grind rocks into new soil and sculpt ponds and lakes. Is this a universe we can say yes to?

CB: Species come and species go. Along this odyssey of evolution, marvels emerge -- eyes, limbs, feathers, song, terror, love. Is this a universe we say yes to?

MD: Cells are born and cells die. Along the way, the winnowing yields fingers and toes, fins and wings, and the miracle of healing from injury. Is this a universe we can say yes to?

CB: Forests of cells are born and die, but not let go. Along the way, these ancestor cells stiffen into wood of uncommon strength and endurance, allowing the living green cells to reach for the sky. Is this a universe we say yes to?

MD: Baby animals are born in abundance, and myriad plant seeds are cast to the wind. Along the way, most of these children become food, supporting the vast ecological web of life. Is this a universe we can say yes to?

CB: Humans are born and humans die. Along the way, each may blossom with love and accrue wisdom as elders, and then by their passing make room for generations of children now and forever more. Is this a universe we say yes to?

MD: Ideas are born and ideas die. Along the way, they nourish the human journey onward, inward, and outward, in an arc of wonder that now embraces 100 billion galaxies. Is this a universe we can say yes to?

CB: Love comes and love fades, dies, or endures. Along the way, we experience the richness of existence, sanctified by laughter and tears. Is this a universe we say yes to?

MD: Each of us is born and each of us will die. Along the way, our awareness of death urges us to live fully, to give fully, and to not take one moment for granted. Is this a universe we can say yes to?

CB: I say yes.

MD: I say yes, too.

CB: Signing off, this is Connie Barlow.

MD: And Michael Dowd.

[End of recorded material]