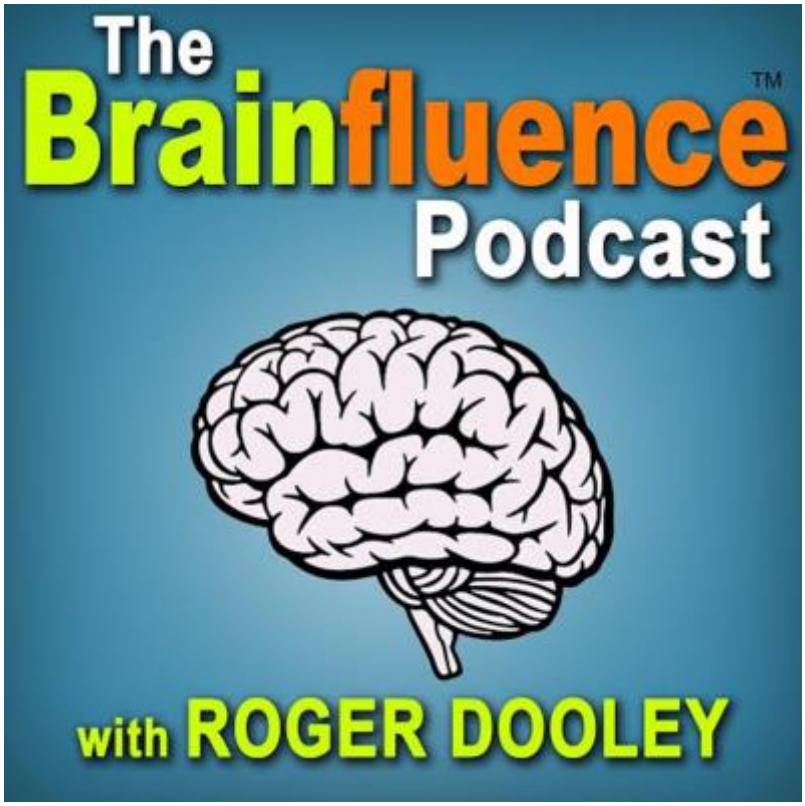
The New Science of Emotions with Lisa Feldman Barrett



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With Your Host

Roger Dooley

The New Science of Emotions with Lisa Feldman Barrett

Welcome to the Brainfluence Podcast with Roger Dooley, author, speaker and educator on neuromarketing and the psychology of persuasion. Every week, we talk with thought leaders that will help you improve your influence with factual evidence and concrete research. Introducing your host, Roger Dooley.

Roger Dooley: Welcome to the Brainfluence Podcast. I'm Roger Dooley. As marketers, as leaders, and team members, and in many other roles, we all know how important emotions are. The driving force behind neuro-marketing is the understanding that humans are not logical robots making rational decisions.

Our guest this week is a true expert in emotions. She's conducting original research that some say is changing our understanding of the science of emotion in the same way that relativity revolutionized physics and natural selection changed biology. She is a university distinguished professor of psychology at Northeastern University and directs the Affective Science Lab there and that's Affective with an A, by the way, although they are probably effected with an E there as well.

Her new book is How Emotions Are Made. The Secret Life of the Brain. Welcome to the show, Lisa Feldman Barrett.

Lisa Barrett: Thanks so much for inviting me on your show, Roger.

Roger Dooley: Great. Let me start by saying, Lisa, that scientists like you are making life really difficult for people like me, who try to turn academic research into practical business advice.

A couple of years, the replication crisis came along, which called into question the validity of a lot of the social science research that I and other people have been basing our teachings on. Then, after 30 years of six principles of influence, Bob Cialdini came along and added a seventh. Now,

you're telling us that a lot of what we thought about emotion, it might be completely wrong.

Let's start with a classic divide between reason and emotion. That's been part of science and philosophy for at least a couple of thousand years. What is wrong with that division in your opinion? I mean, there's obviously some merit, but why is that not necessarily the best way to look at things?

Lisa Barrett: I think that the distinction between thinking and feeling or emotion and rationality is a descriptive distinction meaning you have thoughts, you have feelings. They're different, but the question is whether those experiences actually reflect the structure of the brain and the structure of biology and how the brain creates those mental events.

Is it the case that you've got certain circuits or certain parts of the brain for thinking and other parts of the brain for feeling? The answer there is no. You really don't. Human brains, actually no brains, are structured that way. We have a theory of human nature, which we can trace all the way back to Ancient Greece, which says that we have an inner beast wrapped in the cloak of rationality.

Throughout the ages, there have been different stories that philosophers and scientists have told that pretty much follow that same story line, the idea that we've got these ancient circuits, which are dampened down by our more modern ability to think, but the brain's just not structured like that. It doesn't work that way.

Roger Dooley: Really, I guess, correct me if I'm wrong, Lisa, but the distinction that you're making is not that we don't necessarily have perhaps rationale and emotional elements to our thought processes, and I guess one of the favorite things that some marketers say is that we decide emotionally and justify rationally, although that's not necessarily always the case, but, those types of thinking aren't necessarily reflected in our brain structures and circuitry.

Lisa Barrett: That's right. I mean, you can look at the most modern take on this is, I think, Danny Kahneman's System One and System Two. Danny's pretty clear that he's using these systems as a metaphor, that he doesn't really believe that there are two systems in the brain and that's right. We have modes of experience that seem much more emotional and we have modes processing that are much more rational, but thoughts and feelings are a whole brain event.

This is actually important for us to understand when we're trying to change our thoughts and feelings, when we're trying to strategically influence other people's thoughts and feelings, when we're trying to make decisions about personal responsibility and the law. It really matters that we understand the cracked way that the brain is creating thoughts and feelings so that we plan our interventions correctly.

Roger Dooley: Right. I like the fact that you brought up the metaphor concept because many of the earlier theories of how the brain worked, the rigid right brain/left brain divide and localization of various kinds of activities or the trying the brain theory have been somewhat discredited from a neuro-science standpoint. I think that they can still be relatively useful metaphors.

A few months ago, we had a fellow named Jim Crimmins on. He wrote a book called Persuading the Lizard. It was based on the lizard brain theory, but really the point that he was making was not that that's how our brains are built, but rather that if you want to communicate in a way that resonates, you can't use complex rational messages. Simple emotional messages are often far more effective.

Lisa Barrett: Yeah. This is, I think, a really good example of where I might tweak things a little bit and maybe change the terms of the conversation. When we look at the way the brain is structured, we can see that the brain is doing three things all the time.

It's taking in sensations from the body. It's taking in sensory input from the world and it's trying to make sense of those using past experience.

This is true every waking moment of your life, whether you're having a thought or having a feeling.

The fact is that your brain really functions like the financial office of a company. In a large company, there's a financial office that keeps track of the revenues and expenses and develops budgets for those various accounts.

The same is true for your brain. Your brain is like the financial office of your body. Your brain, as it's creating thoughts and feelings and perceptions, it's also managing your body's budgets for every system in your body.

For water, salt, glucose, sugar, like simple sugars that we use for our primary energy source. There's a technical term for this. It's called allostasis, but we can just refer to it as our body's budget.

When you're exercising, for example, your muscles need more glucose than your digestive system, so it's your body's job to divvy up the resources appropriately. In order to do this, your body has to predict, I mean, your brain has to predict what your body's going to need.

That's true, all the time. It's true when you're remembering. It's true when you are thinking. It's true when you're having an emotion. It's just that when you're having an emotion, the sensory information that comes from your body, so as your brain is adjusting your body's systems to make sure that you have the resources that you need to do whatever it is you're going to do, the sensations that come from those adjustments, you feel and make sense of them as emotions.

Really, what's happening is that those sensations are always being represented by your brain. It's just that when an emotion occurs, those sensations are the forefront of your attention. What a reward is basically, the sensations that come from providing some kind of resource to the body.

That's what's reinforcing, that's what rewarding. Motivation is working, is actually expending some energy revenue to get some additional energy revenue, sort of expending our revenues in order to get more revenues in the future.

Roger Dooley: Is this where misattribution comes from? I recall reading about a study a while back that had a researcher, a female researcher, greet male subjects, who were unwitting subjects, and ask them a few questions. Then, give them a card with her phone number on it. Half the subjects, she caught just as they came off a really scary rope bridge, where they would have had elevated body signals like heart rate and so on, because it was indeed a scary bridge.

Those male subjects were much more likely to call her back, presumably because they interpreted these sensations as, "Wow! I really found her attractive." Am I on the same page here?

Lisa Barrett: Absolutely. What I'm suggesting to you, though, is that those sensations that you're experiencing as feelings, they are happening all the time, not just in moments that are emotion, but also in moments that are thoughts and even moments that are perceptions.

For example, if you've ever been cut off on the highway. You're driving down the highway, somebody cuts you off, and you think, "What an asshole!" There is a moment where you're having a very strong set of sensations that you experience as properties of the person, right, as opposed to your reaction to the person.

When we meet someone for the first time and we like them or we desire a product that we want to buy that we think ... A purse is beautiful or a drink is delicious or a painting is lovely, what we're doing is we're taking the sensations from our bodies and we're making them meaningful as part of the perception of that object that we want to purchase or view or ingest, rather than our own reactions to the world.

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The idea of the ingredients that go into making a perception or a thought or a feeling are the same. It's just the relative amount of those ingredients and also how much you're focusing on those ingredients.

The misattribution research is very telling because it makes us realize that we are always making sense of the sensations from our bodies. Sometimes, we do it accurately and sometimes we don't. The truth is during life, there are many things that are influencing our bodies at the same time, so it's often really hard to tell.

Roger Dooley: Another area that you take on, really sort of the whole body of work of Paul Ekman and facial coding, has been really studied pretty extensively over the years. I think probably most of our listeners are familiar with facial coding because initially it was a discipline that required a lot of training and perhaps observing slow motion video to try and interpret facial expressions and codify them into those different categories that Ekman defined.

Now, it's being done even by automated means, by computer analysis of web cam images or even mobile device images. Not only is there a bunch of academic research here, but there is also considerable commercial resources being devoted to applying this to make sense of whether people are having a good website experience or bad website experience and so on. You really raise some questions about Ekman's research and what's followed it. Right?

Lisa Barrett: Absolutely. The first thing I should point out is that this is not just Paul's research. The idea that you should be able to look at a face and know how someone is feeling, that the idea that a face speaks for itself when it comes to emotion, is actually a very old idea that pre-dates Paul and on all of the modern researchers who study facial movements for their expressive purposes.

What we've shown in a number of experiments is that, and not just us, other laboratories too, is that a face doesn't really speak for itself when it comes to emotion. Let me tell you the idea and then I'll just give you an

example of how we know this. People smile when they're sad. They cry when they're angry. They scream when they're happy. A person can tremble in fear, jump in fear, freeze in fear, scream in fear, attack in fear, even laugh in the face of fear.

That is, fear is a population of highly variable instances. Variety is the norm when it comes to fear and when it comes to every single emotion. There isn't a 1:1 correspondence. People don't usually scowl when they're angry.

When's the last time you saw someone win an Academy Award for scowling when they're angry? It's just very unusual that we see these what are effectively stereotypes so facial movements are meaningful, but there's a lot more information that you require about the context in order to know what facial movements actually mean.

While it's the case that there have been hundreds of studies done to show that it's easy for people to perceive scowls as anger and pouts as sadness and so on, all of those experiments contain a cheat sheet for subjects and when you remove that cheat sheet, subjects don't see scowls as anger and so on.

We've done research in Nubia, rural Nubia, and also rural Tanzania, with hunter gatherers. I can tell you that these facial expressions are not universal, but we've also learned that part of how a human makes sense of the facial movements of another human, is using emotion concepts or emotion knowledge.

You have to have knowledge about emotion in order to be able to recognize it in someone else and even to be able to feel it yourself. You have to know what anger is in order to see anger in a scowl. If you don't have a concept for anger, then you won't yourself experience anger and you also won't be able to see it in other people.

I think this has incredibly important implications for the emotional economy that you mentioned. I think that part of my concern is that we

have our brightest scientists and our most nimble companies spending millions of dollars trying to create technology to read, to try to detect these stereotypes in people's faces when, in fact, these stereotypes occur very infrequently. Instead, this incredible technology could be used to try to map the emotion vocabularies of individual people.

That is, Roger, you and I don't know each other very well. We were having a conversation. I was looking at your face. I would use my stereotypes at first to try to make sense of your feelings, but very quickly, as you and I interacted, I would start to realize that you have your own personal way of expressing emotion.

When my husband is concentrating, he makes a classic scowling face. He's not angry at all, but that's the face he makes when he's concentrating. We are able to perceptually learn about each other. Friends do it. Close couples do it, in romantic relationships. People do it at work with colleagues.

The technologies that these companies are building would be fantastic to actually build an ecology of emotional expression to try to learn for a given individual, what is his or her vocabulary of expression and then examine what is generalizable across people.

Roger Dooley: I think you've got to be careful what you wish for there. We're probably just a few years away from Google being able to identify your exact emotional state at any point in time and then serving you up the exact right ad that'll make you buy.

Lisa Barrett: Yeah. I guess that very well may be true. I think we're probably a couple of ... More than a couple of years away from that, but I think people have an incredible diversity. Our data shows and if you think about it in your everyday life, people have an incredible diversity of what they feel and how they express what they feel.

You don't just capture the movements on the face themselves. You have to capture the context in order to make sense of that information. You

have to know in part what is inside the head of the person. What knowledge, emotion knowledge, is actually active when they're making those facial movements.

I think we're ... It might horrify me as a consumer or a citizen, but as a scientist, I find it incredibly intriguing that we have this technology that could be used actually for serious scientific discovery with benefits for industry. The current path, I think, is misguided.

Roger Dooley: Mm-hmm (affirmative). While we're speaking about science and society, I'm curious that we, just a few months ago, finished the U.S. Presidential Election, Lisa. I'm curious if you, from your scientist's standpoint, watched the candidates, their expressed emotions, the emotions in their messaging and whether you have any takeaways from us as we're trying to improve our communication effectiveness?

Lisa Barrett: I think I would ... There was a lot of impassioned messaging during the election. I think there were a couple of things that I found really intriguing. One, is there were very subtle but persistent gender stereotypes being applied to the two candidates. We've done research on this actually showing that when a woman is angry, people experience her as basically a bitch. Untrustworthy, unlikeable, really not competent.

But, when a man expresses anger, people usually assume that he's justified. Something terrible must have happened to make him so angry. A woman's anger is usually seen as saying something negative about her. A man's anger is usually seen as reflecting. He's just reacting to the situation. It's telling us something about the situation.

I think that we saw that on display really consistently throughout the election, regardless of what your political view is. The fact is, that it matches the data beautifully.

I think also though, one of the things that we saw was just that there are varieties of anger that people express. Some of those angers or

versions are destructive, but others were very empowering and brought people together and really spurred people on.

I think we often think about negative emotions as being harmful and positive emotions as being functional but, in fact, even negative emotions, unpleasant emotions can be very functional, can bring people together in the service of a goal. I think we also saw that very, very clearly during this election.

Roger Dooley: Interesting. I suppose in times of say, national threat, you see that clearly if your nation is under attack by another nation. That's going to produce a lot of negative emotion, but it can also produce amazing teamwork and self-sacrifice too in response to that.

Lisa Barrett: Absolutely. I think one of the reasons why we have such a divided country at the moment is that right now, we have segments of the population who are living very different realities. You know, your brain basically is running an internal model of the world.

It's not the case that your brain detects objectively what's going on out in the world and then makes decisions about it. Your brain is running an internal model. It's guessing at what's going on in the world and then its guesses are basically confirmed or corrected by the world.

What you feel and what you think is based on what you believe. Your feelings and your thoughts are driven by your beliefs and then corrected by the world. I think one thing we can see right now in our country is that there are very different versions of reality that people really don't share.

As a consequence, they are having a hard time. They're evoking really strong emotions in one another, but they're having a hard time reaching across the chasm to really actually communicate. There's a lot of talking at people, not a lot of communication amongst people, I would say.

Roger Dooley: Yeah. I think that's probably been at no time more true than in the last six months or so. Say, let's change gears, Lisa. One sacred

cow that you talk about is the idea that specific areas of the brain reliability associated with specific emotions. To some degree, that's a fundamental principle in the concept of neuro-marketing, at least certain kinds of neuro-marketing that use say, technology, like a MRI or EEG.

You see people's brains lighting up in a certain way or measure their brain waves happening in a certain pattern in a certain area, then you can say what they're experiencing emotionally. Now, I guess one of the probably most common association that our listeners might be familiar with is that fear happens in the amygdala, but how good are the links between specific emotions and very specific brain areas?

Lisa Barrett: It is absolutely the case that there are no dedicated brain regions or circuits for individual emotions. That's just ... There is no consistent evidence for that in brain imaging, in the brain imaging literature. Even in the animal literature, there's evidence that there are circuits for actions like freezing and fleeing and aggressing, but not for emotions, per se.

This is a myth that has been very hard to dispel because people have believed that individual emotions live in different parts of the brain really for centuries, spurred on by this theory of human nature that gives us parts of the brain for thinking and parts of the brain for feeling and so on.

There's really no evidence for this. Where there is evidence for is that your brain contains a set of kind of all-purpose networks that work together in various ways to create variety of thoughts and feelings and perceptions that you have every day of your life. Emotions are not wired into the brain at birth in particular regions. Instead they're made on the spot, as needed, with incredible variety, by these all-purpose networks in the brain.

Roger Dooley: There's really a both of lot academic and commercial research that's trying to identify patterns that are in some way useful either ... In a commercial sense, it might be, "Gee, does this person like the product they're seeing?" Or, "Are they likely to buy it?" In the academic sense, it might have some totally different purpose.

Are these efforts doomed to failure or is it just that you have to recognize that there are individual differences and look at things more from a statistical standpoint then a highly predicted standpoint?

Lisa Barrett: I don't think that. I think that the endeavor is very valuable. I'm not saying that you can't predict what someone will do and eventually predict even what's in their mind at a particular moment in time. What I'm telling you is this particular approach is very misguided and is doomed to failure.

The brain is not wired in a way. It's just evolution didn't give us a brain that is organized as a set of mental organs. That is a highly inefficient way to run a brain. I guess again, I would say it's exactly like the emotional economy point. That it's very possible to ask the question, "Can patterns of brain activity tell us something about what someone is thinking or feeling or what they might do in the next moment?"

That doesn't mean that you should be looking for blobs of activity in individual brain regions. That's an incorrect way to think about it. I would say that we should be taking individual differences much more seriously than we do.

You mentioned the replication crisis. I think part of the replication crisis comes, by the way, it's not just in social science. It's really all sciences have an issue with replication. Replication is part of the process of science. That's a whole other conversation, but what I will say is this. That part of the problem in psychology, I think, has been that we started with a set of mental categories like anger, sadness, fear.

We went looking for them for their physical location in the brain asking, "Where are these emotions located?", instead of starting with the structure and function of the brain and asking, "How does a brain that's structured like this create feelings of anger and sadness?" Or, "How does a brain that is structured like this create wanting, desiring this object, or working hard to get that object?" Or, "How does a brain that's structured like this control behavior in a complex world?"

Those are two very different ways of approaching things. If we really spend all of our effort and money on the second approach, the, "How is the brain doing this?", asking this question, looking at individual people and then trying to generalize on that basis instead of starting with an assumption that emotions live in individual blobs in the brain, I think we would be much further ahead than we are right now, both in science and in industry.

Roger Dooley: Early in the book, Lisa, you talk about simulation and how our brain fills in the blanks given a particular stimulus. One story that was really amusing was your daughter's birthday party and how you altered how the guests perceived the foods they were served. Why don't you explain a little bit about that? I think there's a good lesson there.

Lisa Barrett: Sure. The idea really is that your brain is not reacting to events in the world. Neuro-science has revealed that the brain is predicting. It's proactive. It's using your past experience in every moment to make guesses about what's going to happen next. We call those guesses, simulations. Those simulations become your reality. This happens largely outside of your awareness, but you can harness this in order to probably even, in industry, it'd probably be a very useful thing.

In our case, we used it to plan a birthday party for my daughter when she was 12-years-old. We had all of her friends over. For example, we served pizza that was doctored with little green food coloring so that the cheese looked fuzzy and moldy. I made a peach gelatin that was laced with bits of vegetables so that it looked like vomit. Actually, a couple of the kids actually gagged. I mean, a real, full-on body gag when they went to each the peach gelatin.

We served white grape juice in medical urine sample cups. I have to tell you, even though I poured the white grape juice into these cups, I could smell the urine.

Roger Dooley: Remind me not to come to dinner at the Barrett house.

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Lisa Barrett: The ultimate game though, in the birthday party, was we asked her friends to identify foods by their smell. What we did was, we took diapers and we used mashed up baby food, spinach and peaches and so on, and we artfully smeared the food on the diaper so that it looked exactly like baby poo. We picked foods that had a green, brown color or sort of a peachy, like an orangey, light brown color.

We would ask the guests to take the diaper and hold it right up to their nose and smell and identify the food by smell. Even though the guests knew, obviously, that the smears were food. They were simulating the smell of poo. It was a grand exciting time for everybody. People were exuberantly disgusted, I would say.

Roger Dooley: Right. I think there's probably a message there for marketers because people will not always evaluate your product objectively. A good part of it is the presentation. Now, here's an extreme example. People were evaluating this baby food in a totally different way because it was presented in a way that it evoked other emotions and other sensory expectations.

That's why it's so important that what goes on or around your product, the context that it's in, and whether it's the packaging, the environment, the sales environment or whatever, that really can change perception of reality. People are not always going to just see what you think they're going to see.

Lisa Barrett: Yeah. In fact, Roger, I would even go further and say that people never objectively perceive anything, any product. You're not changing the reality by setting the context. You're creating the reality by setting the context. The brain is not structured to perceive reality. It's structured to perceive what you believe. It's corrected by information from the world. Sometimes, a lot. Sometimes, not very much.

The product alone, you as the seller may be focused on the product, but the perceiver, the purchaser, is seeing that product, experiencing that product, in an entire context.

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Even if you were just to present the product alone on a screen, the purchaser or perceiver will be creating a context for that product. It's in your best interest to try to set the context in a way that will create the kinds of simulations in your purchasers that you're looking for.

Roger Dooley: That's really interesting and very, very useful. Let me just get to one last point that's also kind of a fun point. A few weeks ago, we had Paul Zac on the show, the oxytocin guru. We mostly talked about trust in business but we took a little diversion into cats and dogs. He found that dogs snuggling with humans experienced an increase in oxytocin, just like people do. Cats, not so much.

You've got a chapter that talks about dogs among other things. What can we learn about emotions from dogs and animals?

Lisa Barrett: That's a fantastic question. Here's what I would say. We know that animals, non-human animals have very similar ... Some aspects of their experiences are very similar to ours. They feel pleasure. They feel pain. They can get really worked up. They can get really calm. This is true of almost all of the animal kingdom.

Dogs, in particular, also are very sensitive to the physical cues that humans make. We've bred them essentially to be very sensitive to us, even more so than other animals, but I think it's a mistake to assume that because you perceive your dog as sad, that there's some circuit in the dog's brain that's actually triggering sadness.

I think what the book really demonstrates is that emotions don't exist separate from the perceiver. You have machinery in your brain that allows you to construct the experience of emotion and also construct a perception of someone else being emotional, including your dog.

What this means is that from your perceptive, your dog may be sad but from your dog's perceptive, your dog may be just feeling unpleasant or your dog may be feeling worked up or your dog may be feeling pleasant.

There's a whole interesting science of showing that human pet owners assume that their dogs are displaying dominance when, in fact, their dogs are having attachment issues and are feeling very worked up and unpleasant, what we would call anxious because of separation. Their behavior is not meant to show dominance. It's actually meant to express that they feel lonely and anxious.

Roger Dooley: Right. That's really interesting because my dog, when he was a puppy, if strangers approached, he would look at them and back up to me and sit on my foot. Traditional dog trainer interpretation of that is that he's expressing dominance when it was very clear to me that he was a little concerned about this stranger approaching and wanted to be sure he was in contact with me in case there was a threat there.

I think the other thing is that it underscores, just as we can't always reliably read people's true emotions from their facial expressions, we have a lot of problem interpreting what dogs expressions and behaviors is accurately as emotion.

You talk about dog Rowdy, who jumped up on a stranger and it was interpreted by the stranger as an attack when really he was just being overly friendly. In that case, that led to some consequences, but I think that probably happens all the time.

Lisa Barrett: Exactly. I think the take home point here is that no matter how confident you feel about what you see, your brain is guessing. Your brain is taking a guess. That guess may be correct or it may not be correct. It's important to remember that sometimes you need to gather more information.

The other thing that I point out in the book is that even if there's a lot of evidence that dogs don't feel the same emotions as humans, that being said, I think it's really useful for us to see them as having those emotions.

It actually helps us be more loving and more caring and more responsible for our pets when we perceive human emotion in those

animals. There's a reason why we do it even if it's not exactly what you would call accurate from a scientific standpoint.

Roger Dooley: Great. Well, we're just about out of time. Lisa, I'll add one last thing. One thing that I always appreciate in a book is when the author includes good notes for the interested reader who wants to dig deeper. I think you really outdid yourself on this one. You've got like 40+ pages of bibliography and then another 40+ pages of end notes.

If someone's looking for a gateway into the science of emotion, this book is really a good start.

Lisa Barrett: Thanks very much. I actually also have web notes in addition so there are about 900 web notes.

Roger Dooley: If anybody wants to devote the rest of their life to the science of emotion, you've provided the methodology for doing that.

Lisa Barrett: Yeah. Luckily, the book actually just contains the distilled tidbits so people don't actually have to go and do all that reading.

Roger Dooley: Great. Let me remind our listeners that we're speaking with Lisa Feldman Barrett, author of the new book, How Emotions Are Made. The Secret Life of the Brain. Lisa, how can people find you and your content online?

Lisa Barrett: They can go to lisafeldmanbarrett.com. It's all one word. lisafeldmanbarrett.com. They just can Google me with my name and they'll find the website if they can't find it otherwise. All the information about the book and other activities are available on that website.

Roger Dooley: Great. We will link there and to any resources we talked about during our conversation on the show notes page at rogerdooley.com/podcasts. We'll also have a text version of our conversation there as well. Lisa, thanks so much for being on the show and good luck with the book.

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Lisa Barrett: Thank you so much. This is a fascinating conversation. I appreciate it.

Thank you for joining me for this episode of the Brainfluence Podcast. To continue the discussion and to find your own path to brainy success, please visit us at RogerDooley.com.