

Kieryn:

I'm Kieryn.

Eve:

And I'm Eve. This is Kitchen Table Cults.

Kieryn:

Where two [inaudible 00:00:21] escapees talk about our experiences in the cultish underbelly of the religious right. Hi Eve.

Eve:

Hey Kieryn. How are you?

Kieryn:

I am good. I went to the museum yesterday instead of watching the debates, so it was an extra [crosstalk 00:00:39].

Eve:

Beautiful.

Kieryn:

How are you?

Eve:

I'm good. I didn't watch the debates either, although actually I did watch it, but we had it muted with subtitles while some friends and I argued about poets and that was fine.

Kieryn:

That seems like a much better way to handle that.

Eve:

It was great.

Kieryn:

Yeah.

Eve:

We're joined by someone very special, my friend Rachel.

Rachel:

Hi.

Eve:

Do you want to introduce yourself?

Rachel:

Sure. My name is Rachel, and like Eve and Kiernyn, I grew up in a very conservative household with lots of children and homeschooling and the usual that I think I understand your audience is fairly familiar with, and I ended up taking a couple of twists and turns on my way to being a stay at home mom and actually accidentally became a neurosurgery resident instead.

Eve:

Oops.

Rachel:

Oops. I do tell my mom regularly that I blame her for everything and she says, "Well, if you are a neurosurgeon, I don't know how bad I'm supposed to feel." So, yeah, that's me.

Eve:

Short version.

Rachel:

Short version.

Eve:

So, yeah, you're a neurosurgeon and we are bringing you on because ...

Rachel:

Oh, because I have ADD.

Eve:

Yes. And you have a theory that I think our listeners really want to hear.

Rachel:

I have a theory about ADD that I am really excited to share with you guys. When it occurred to me the other day, I did the first thing that I do whenever I have a theory or an idea or something interesting for dinner, I call Eve.

Kiernyn:

Solid.

Eve:

Especially if things ... As a taurus, it's always the interesting things for dinner that I really want to hear, but this one was especially good.

Rachel:

Yes. Yes. So ... Oh, I guess it's kind of a ... There's a lot that goes into this theory, so please stop me if I'm making it too complex, but it kind of starts with my ADD diagnosis, which happened when I was working in a neurophysiology lab at the NIH and studying the function of dopamine in the brain, specifically in the reward circuitry of the brain, that one of my brothers called me and he said, "Rachel, you have ADD," and I said, "That's impossible. I'm a medical student." And he said, "Well, medical students can have ADD." And I said, "Yes, but I had a 4.0 in college and I scored very, very high on my boards. I don't know if you know that." And he said, "Well, people who have ADD can be good at tests, Rachel." And I said, "ADD is for little boys who can't sit still in class." And I was always good at sitting still because I just zoned out and daydreamed. So-

Eve:

Great, because if you didn't, you'd get spanked.

Rachel:

Yeah. And so he said, "No, here's this survey that I want you to take, and I just want you to answer it honestly." And, he sent me what actually turns out to have been an assessment tool for ADHD and instead of a list of all of the things that it looks like when someone else has ADHD, it was all of the things that you feel when you do have ADHD. And I started crying because those were all of the reasons that I hated being alive, all of the reasons that I woke up every morning wishing that I could blow my brains out because life was too hard, because everything was so, so hard, and for my whole life it had been so hard. And, I started to hope because I knew as a medical student, that there was medication available for ADHD and the hope that there could be a medication that would make my life not hell, was so terrifying.

Rachel:

So, anyway-

Eve:

Okay. Well, let's-

Rachel:

Sorry.

Eve:

Let's back up a little bit. No, no, this is good. Let's back-

Rachel:

Yeah.

Eve:

Let's back up.

Rachel:

Sure.

Eve:

So we have to get through why your life felt like hell.

Rachel:

Yes.

Eve:

Why having life feeling like hell stopped motivating you, and why you turned to meds in the first place after this diagnosis or this diagnostic questionnaire?

Rachel:

Sure. I grew up with a pretty stoic set of parents who always told me that it doesn't matter how you feel, you show up for work, you get the job done. Life isn't supposed to be happy. You're supposed to do good things, serve God, take care of your family and get to heaven, not go to hell. And the happiness was not ... It wasn't considered something that was even particularly possible, let alone reasonable to pursue. And this was sort of supported by all of the teachings in church, and so my parents really taught me how to function despite this sort of deep internal pain, to get myself to do things. So I didn't go to school, I was homeschooled my whole life, but then I was able to go to college and I was able to get myself to write papers and take tests, and to graduate.

Rachel:

And I was very, very religious, very motivated by my love for God, my fear of doing wrong. I always tried to do right by other people, and was really ... Wow, I don't know how far to get into this, but it was all very, very hard. Life was hard. I didn't know what I wanted, and in fact wanting something for myself, wanting life for myself seemed absurd. I feel like if it was up to me ... Even as a child, I felt like if it were up to me, I probably would have chosen just not to be born because I can't fathom this all being worth it. But I-

Eve:

Well, and I think that ... Sorry.

Rachel:

No, it's okay.

Eve:

With the theological basis for so much of our upbringing, I think this is a really common sentiment.

Kieryn:

Yeah. My parents definitely felt like this too.

Rachel:

Yeah. And so even though it was hard to get out of bed every morning, I managed to get out of bed because if I didn't get out of bed then I was a bad daughter, I was a bad Christian, I was a bad sister, I was a bad student. And so I sort of tortured myself into getting things done.

Eve:

All of high school for me was like ... Getting out of bed was because mom needed help.

Rachel:

Right.

Kieryn:

Right.

Rachel:

Right, oh yeah. Because-

Kieryn:

Yeah.

Rachel:

... like I said, if it was up to me, I would just die. But I didn't, and I ended up getting a nursing degree at Oral Roberts University, which I understand your listeners might be familiar with.

Eve:

Yeah. We really need to do an episode on it though.

Kieryn:

Yes.

Rachel:

Very, very much catered to my desire to serve others and God with my life, and I ended up getting a nursing degree and I really, really didn't like nursing school. But I persevered because my dad said, you got to finish it and then you can figure out what you want to do later. So, I ended up getting a job after I graduated nursing school in an ICU where I fell in love with medicine, and I fell in love with a boy as one does.

Kieryn:

As we do.

Rachel:

And I discovered joy. I really, really, really loved my patients. I loved medicine. I loved the science. I loved the pace of it. I loved being in the hospital and I had so much energy. I felt like I showed up the hospital, and became a different person. It was like I was on, and I really loved Tassif, was his name. He was a neurosurgery resident from a conservative Muslim family, actually. And this sort of was mind blowing to me because Muslims were always other, they were forbidden, they were not Christian and I was taught to always fear everything that wasn't Christian. And Tassif and I ... We really, really clicked, and that started opening my mind to a world outside of the worldview that I had been raised in, because Tassif was a good person and he was a kind person. And oddly enough, he was a happy person, and he

really showed me how to enjoy life, to start enjoying life, to start having dreams. He convinced me to go to medical school, to apply to medical school.

Rachel:

And we had the conversation on and off over the years, of whether or not we should get married, how much we wanted to have a life together, to have children together, but how neither of us could see giving up our religion or our families for anything or anyone. And because the concept of doing anything because I wanted to was so foreign to me and the concept of embracing duty and embracing pain was so familiar to me, and because I had been almost primed to sacrifice my happiness for holiness, I gave him up, which was the hardest thing. I ended up going to Med school, he got engaged to someone else. I started learning more things about the world, learning more things about myself, really loving medicine, doing well in medical school, with struggles here and there. Actually, a lot of struggles. Looking back now, I had no idea how much better life could be. So the bearable misery that was my life was so much better than the unbearable misery that it had been before.

Eve:

Right.

Kieryn:

I feel that.

Eve:

Wait, it's one of those moments and I think we feel this a lot. I don't know if we've talked about it a lot, but the moment where something that was really bad, that was hurting us, disappears, we realize how bad it was and we had never any idea ... And I think this is why a lot of us have such a high tolerance for suffering and pain.

Rachel:

My dad always says, "It's like you didn't know how much it hurt until they stopped hitting you."

Kieryn:

Yeah.

Eve:

Yeah.

Rachel:

And ... Yeah. So Tassif got engaged to someone else. It was an arranged marriage to someone that his mother had picked out and I ... Gosh, that happened when I was studying for the first step of my boards, which is one of the most important tests you'll ever take. Step one of the boards, and I did what I always did and I took all that pain and I shoved it deep inside me where it made me work harder.

Kieryn:

Yes. That ...

Eve:

Oh, yeah.

Kieryn:

Yeah.

Rachel:

So, I only scored 90th percentile on my boards, but that is 90th percentile among medical students taking it. So-

Eve:

You suck.

Kieryn:

Only? Only?

Rachel:

And so I when I got my board scores back about six or eight weeks later, because Tassif had texted me about his engagement when I was studying for my boards, so it's probably about two months later, maybe three months, they take a long time to get your board scores back. Then that was the next time I talked to him is when I got my board scores back and I wanted him to know how well I had done, and he emailed me back to let me know that he was really, really proud of me, and to let me know that he called off his engagement. And we started talking again and we finally reached this conclusion that it wasn't worth it, that surely God, his God and my God, wouldn't disapprove of how much we love each other. So we decided that our families could deal with it and that we were going to do it, that we were going to be together. And, I felt like finally, finally, finally I had my happy ever after and life was finally going to be good.

Rachel:

And then the next day his airplane fell out of the sky, and I felt like I had endured all of that pain for all of those years for nothing. I was so angry. I was so angry at God. I was in so much pain, not just the pain of having lost him, but all of the pain of all of my years, of all of the fear, the anxiety, the internal mental anguish, and with Tassif having been the source of my few, few moments of real joy, I thought that I would die. I really thought I was going to die just from the pain of losing him, and I went to his funeral and ... Actually, I went to the park where his plane had crashed in suburban Chicago and there were still little bits of the airplane, all meshed in the mud everywhere. And I looked up in the trees were broken where the plane had come through the trees and I looked up and I had thought that I was just going to die at that moment and I didn't die.

Rachel:

And I had this thought, "You know I really like neurosurgery? If I can be a neurosurgeon, I'll keep living."

Kieryn:

And so that's how you accidentally became a neurosurgeon.

Rachel:

But I made kind of a deal with him, with myself, that I was not going to torture myself anymore. That if I was going to stay alive, I was going to have a good life.

Eve:

Because once you've tasted joy, you can't go back and you hadn't had it ever, and you were starving.

Rachel:

I was completely starving. And I really ... It's funny, with the pain of losing him, I also had this sort of deep, unshakable feeling that he was still out there and still loving me, and still wanting me to have a good life. And so I thought that the best way I could honor him in his life was not by throwing away my life, but taking the good things that he had taught me and running with it and learning how to have a good life, how to be happy like he was, how to fill other people's lives with joy and see the magic in this world. I really thought the best way to honor Tassif, to remember him, was to have the best life possible. And step one of that involved me going back to my therapist who I had seen sort of briefly and insisted to her that I didn't need help, and then she said, "Okay. Well, call me when you do."

Rachel:

And so I went-

Eve:

We've all been there.

Rachel:

I went back to her and I went back to her office, and I was like, "I'm sorry I lied to you. I've wanted to die every day of my life. I'm miserable. I hate being alive. I daydream about blowing my brains out, which is why I can't own a gun," and I just got really, really real with her, and she sort of took it in stride and I ended up ... I went back to school and I suddenly found that my motivations, my ability to do things ... It was just all messed up. That sort of screaming at myself that I had always done before to get myself out of bed, to clean my room, to do my homework, the telling myself I wasn't good enough if I didn't try harder, that didn't work.

Eve:

The fear based consequences stopped.

Rachel:

Yeah, it didn't work because I couldn't imagine anything more painful than losing Tassif. And so I thought, "Oh. Well ... " I decided to stay alive so that I can become a neurosurgeon, but if I fail out of Med school, I'll just kill myself and my suffering will be over. So I didn't know how to be afraid of that, but I really liked being a doctor. I liked going into the hospital and seeing patients when I was there, when I was seeing patients, when I was in the operating room, the pain became bearable as I focused on other people's pain. So-

Eve:

On alleviating other people's pain.

Rachel:

Yes, on alleviating other ... Not ... Yes, on helping other people, that made it bearable.

Eve:

Right.

Rachel:

And my friends ... I have wonderful friends in Med school who would ... When I just couldn't move, when I was catatonic with grief in my house, I remember more than once they would show up with Chipotle and Starbucks and sit there and force me to eat food, and drive me to school to make sure that I made it through the parts that I couldn't do.

Eve:

Amazing.

Rachel:

And my teachers were more than understanding. Like when I ... I remember I had a paper that was three months overdue and I just didn't care enough to even write it. And so I had always felt like I ... My whole life I felt like I had a broken brain, like I couldn't do things the way normal people could. I didn't see things the way normal people did. And it helped that most of the people in my family had this same broken brain. We would call it the family crazy gene, and you could look at our ancestors, our grandfathers, our cousins had varying degrees of the broken brain where we just couldn't function extreme-

Eve:

Normally.

Rachel:

Yes. Extremely smart, couldn't keep a job, couldn't finish college, and my father broke the mold by actually ... He recently reached retirement age, having never been unemployed, and he was the first man in his family in generations to have been able to do that.

Eve:

Wow.

Kieryn:

Wow.

Rachel:

And he was really proud of that. But he had sort of schooled all of his children to deal with the fact that our brains didn't work normally, and we just had to try harder. And so I started getting curious about why is it that we can't make good decisions? That life is so hard for us, that our emotions are always out of control to the point that in order to function we have to not have our emotions, but just divorce ourselves from them. And so I ended up getting lucky enough to start working in the Movement

Disorder Lab. And you may ask what is emotional control and motivational issues? What does that have to do with movement? Well, the truth-

Kieryn:

Yes, what does it have to do with movement?

Rachel:

... is that movement is what our brains were designed to make us do, and all of the calculation and thoughts and feelings and everything that we have, it all has the same purpose of deciding what direction we should move in, what direction should I go? Where can I get to the food? Where can I get to safety? What can I reach for that will bring me joy? All of that, that comes from the brain. The whole purpose of having a brain is to move, because the output function, the ultimate output function of the brain is to your muscles, which is movement. And I had spent so, so many days lying in bed staring at the ceiling saying, "Why can't I move? Why can't I move? I know I need to do my homework. I know I need to do the dishes. I know I need to go put gas in my car. I know I need to do the laundry, but I can't move." So the project that I was working on looked at decision making. The decision to pursue an action typically comes from your reward circuitry or your learning circuitry is sort of the same thing, a different phrase for the same thing, and that's the classic Pavlovian concept of training a dog with treats, with food to expect food with a particular stimulus, to expect a treat with a particular stimulus.

Rachel:

So, there is a circuit in the brain that uses dopamine sort of as the beads of its Abacus to calculate whether or not something is good for you. So if something is good for you, you get a surge of dopamine, which is the pleasure of reward chemical in your brain, that also gives you that good feeling you get when you accomplish something or when you eat something really good, or when you figure out a tough problem, all of that is your brain using dopamine to weigh whether or not something is good for you. And if something is good for you, then that learning circuit then feeds into your movement circuit to tell you to move towards that thing that is good. Does that make sense?

Kieryn:

Yes.

Rachel:

And then the chemical that mediates all of that is dopamine.

Eve:

Right. So you and I got our dogs around the same time and we've watched this be a real strong thing that we realized about ourselves at the same time as we were training our dogs. Because if you yell at the dog or get aggressive when they do something bad, they're only going to learn to be afraid of you, they're not going to learn about the actual behavior.

Rachel:

Right.

Kieryn:

Right.

Eve:

You have to create a reward circuit in order for them to comply with the behavior pattern that you're trying to establish.

Rachel:

I can train them to do with rewards the thing I want them to, and I can train them to not do something because they are afraid. But it is very, very difficult to get them to do something because they are afraid.

Kieryn:

Right.

Rachel:

Right. So with all of this studying of the reward circuitry, I was baffled because I was like, "That is not how life works for me. My brain doesn't work that way, actually." And this is one of the fundamental things that psychology is built on, is the fact that you reach for the things that are good for you.

Eve:

Well, I'm just going to pause here for a second and talk about I don't know if I've talked with either of you about this a lot, but anytime I feel like I'm happy, it feels like a threat.

Kieryn:

Yes. Oh, my God. It freaks me out. I feel panicked. I self sabotage because the idea of reaching for something that brings me pleasure at all, is terrifying. And the instant I do, I'm like, "No, I'm in trouble. This is bad. I need to get out of this right now."

Eve:

Right. It feels threatened, it feels physically-

Rachel:

Right. Well, if anything, it is always followed by a horrific crash of self-loathing and overwhelming just darkness.

Kieryn:

Yes.

Rachel:

And so, I in fact was very, very often afraid to reach for the things that gave me joy. Like when I discovered in college that I really, really loved Biology and studying the sciences, I just knew that meant that God wanted me to be a nurse because I really hated nursing school. I was miserable.

Kieryn:

Right? Oh, my God.

Rachel:

And when I fell madly in love with a boy who understood and cared for me, I knew that meant I had to give him up.

Kieryn:

Right. Obviously.

Rachel:

And it was just sort of this sort of gut reaction and the moment-

Eve:

And if you're lucky that it's God's will that you were supposed to be together, he'll give him back.

Kieryn:

Right.

Rachel:

No, no, that was never going to happen. But so then I decided to doubt that and start believing that I could have something good that can give me joy, and then less than 24 hours later, he was dead. And that was really, really quite scarring to me. But it also just had ... I just gave up on so much. I just didn't want to fight anymore. I didn't want to sit there and scream at myself until I wrote that paper and I didn't want to keep myself from saying the things that other people found offensive, and I didn't want ... I was no longer-

Eve:

So you're at NIH and you suddenly realizing that none of these things are working for you and you don't work normally.

Rachel:

Yeah. So I don't work normally, and so I spent a lot of time at NIH, unable to be afraid enough of something to get myself to actually work, and I would just try and try to make myself more afraid. So I ended up basically giving myself an anxiety disorder and unable to find joy in anything. And people might say, "Well, you were depressed, maybe you should go to therapy and try an antidepressant." Well, yes. I was calling my therapist every single week and trying different antidepressants and reading all sorts of books and talking about my feelings and reaching out to friends, and nothing was working, nothing was working. And so in the midst of all of this, my brother says, "Rachel, you have ADD," and I said, "I have depression, I have anxiety, I have so much pain, but dammit, when have I ever gotten a B?" And so as it turns out my brother was right and I had started saying that my reward circuit is clearly broken, as a part of my ...

Rachel:

I was doing all this research and I remember remarking to the research fellow more than once as we're doing this study, looking at reward functioning in people, and I was like, "My reward circuit clearly doesn't work because this is not how my brain works." They kind of laughed at me, and I said, "I wonder if there's a word for that disease because I'm pretty sure that's what's wrong with my family. I'm pretty

sure that's the thing that's broken." And so when my brother said it's ADD, and I was like, "Wait a second, the thing that doesn't work in me is that dopamine driven reward circuit. I know that from my research, my experience of life, I never thought about what it would look like to other people when you don't have a functioning reward circuit, and I never thought about what life could be like if you did."

Rachel:

And so I ended up frantically terrified to hope, made the soonest available appointment with a psychiatrist that I could find because I don't have patience and I have no faith in my ability to follow through on a long term plan. And I was talked about it to like eight friends because I had no idea what to make of this so I had to process it out loud, and they all reassured me that they had known for years that I had ADD and they were shocked that this was the first time it ever occurred to me. And then so I went in to see the psychiatrist after having not slept the night before because I was so terrified I would oversleep with my-

Eve:

This is so [crosstalk 00:29:49].

Rachel:

... triple shot latte from Starbucks because caffeine is the only thing that ever calms me down.

Kieryn:

Yeah.

Rachel:

It helps me when I'm anxious, it makes me much calmer and-

Eve:

This is why I drink so much coffee for so many years.

Rachel:

... clutching this latte and word vomiting all over this poor psychiatrist, saying, "I don't know if you're even going to believe me because I know I'm a medical student and I'm an NIH research fellow, and I have all these great grades and I already took my steps and I don't need help studying, but I can't drive because I zone out and I hit things. And I have to have three months worth of underwear because I cannot do laundry and I pass out at work because I can't remember to feed myself because I don't get hungry."

Kieryn:

Yeah.

Rachel:

And I said, "My life is miserable because I can't take care of myself. My whole life is chaos, not just my bedroom, not just my car. If you look at my life, I live somewhere different every single year. I have a new best friend every year. I've got just so much ... There's just so much chaos and instability in my life as a whole from micro to macro." And I said, "And I think it's because I have ADD," and the psychiatrist

... I just remember he said, "Well, people like you ... " And then that's when I realized he believed me. I don't even remember what he was saying about the people like you, but he stopped and he said, "Yeah, people with ADD ... " and he told me, he said, "Not only do you have ADD, I think you have really severe ADD. And I think the only way you coped is that you're very, very bright and you've learned all these coping mechanisms, but it is so hard for you to cope and I think you deserve a chance at a level playing field."

Rachel:

And I was like, "I swear I don't need it for tests. I don't need it to stay up all night. I just want to be able to sit in a crowded restaurant and be able to focus on what people are saying and not have to run away to the bathroom because I'm so overwhelmed. I want to be able to drive without having to call someone to keep me attentive to what I'm doing, so I don't daydream."

Kieryn:

This is why I listen to music.

Rachel:

Yeah. And ...

Eve:

Music's too overstimulating for me. It's too much.

Rachel:

It's so distracting.

Eve:

So distracting.

Rachel:

When I'm not medicated, and so he said, "Okay, I think I know the right drug for you. The problem is that your frontal lobes aren't getting enough dopamine so you can't focus, you can't figure out what to focus on. ADHD is not the inability to focus, it's the inability to figure out what to focus on because you can't tell what's important and what's not important, because your little reward calculator ... If you think of your reward circuit as an Abacus, with those beads that slide back and forth, you don't have enough of those beads to add up to something that's good for you."

Eve:

Well, it's interesting because until we started talking about this, until someone else mentioned dopamine in relation to ADHD or ADD, I had no idea that it was a dopamine related disorder.

Kieryn:

Yeah.

Rachel:

Yeah. A lot of people don't realize that, but all of the medications that work for it are the ones that can boost your dopamine. And actually, if you look at the genetics of people of familial ADHD, one of the genes that they've identified is one that has a dopamine receptor that is relatively insensitive to dopamine, meaning that you need higher levels of dopamine to get the same response.

Eve:

Because you've genetically reinforced that so many times.

Kieryn:

Right.

Rachel:

Right. And so I started the medication, and it was like I was given a new lease on life. So many things got better. It didn't cure my ADD, but it took it from off the charts to severe, or moderate to severe.

Kieryn:

Progress.

Rachel:

Right. I still have pretty bad ADHD, and the last time I saw my psychiatrist, I mentioned maybe trying one day to try a lower dose of the meds and she was like, "So we just barely got you to maybe moderate and you want to cut back on the meds?" And I was like, "Fair point." She's was like, "Maybe not right now, Rachel."

Eve:

You was like, "Okay, fair point. We'll wait."

Rachel:

Yes. So-

Eve:

Okay. But this-

Rachel:

This is all background.

Eve:

Yeah. Well, you were saying this is why ADHD is related to thrill seeking and these kinds of things, but keep going, we're so-

Rachel:

Yeah. So-

Eve:

Eating and baseball.

Rachel:

Right, exactly. Well, things that had never been enjoyable for me before suddenly started being fun and then I realized why people do them. And so, it started getting much easier for me to eat, much easier for me to drive. I still couldn't get myself to really ... I wasn't very good at writing papers or things I didn't like to do and I couldn't get myself to do anything that I didn't want to do. It was like that whole motivational circuit that I had before of, "I'm scared of this, I'm scared of a bad consequence, therefore I will beat myself up into hating myself enough to get out of bed and go do this thing I don't want to do," that didn't work anymore. It just didn't. And guiltting me into doing things didn't work either, to some degree obviously. My love for medicine, the joy I got from taking care of patients really, really motivated me.

Rachel:

But fast forward a couple of years, somehow I ended up matching into a neurosurgery residency. I get to spend all day, every day taking care of patients, operating, problem solving, and it's super fun and I love it except that they also want me to do research and write papers and I can't do it. And they're like, "Rachel, you're just not trying hard enough," and I'm just like, "Okay-"

Eve:

Where have we heard that-

Rachel:

"Okay, this is ... " And I said, "You guys are not going to fix the fact that I have ADD, you're just not," and they're like, "Well, you need to try harder," and I'm like, "Okay. I sit at the computer for hours and hours and I panic and I can't start. And I try to start, but I can't start." And so I've been thinking a lot about why I can't write, why I can't do research, why I can't do these things that I don't particularly want to do, but in the grand scheme of my career would be probably really good for me to do. And I thought, "Well, what is the reason? What is the molecule of motivation?" And it's dopamine. And what does that do? It ends up basically, when you decide something is good for you, then it sends this signal into the deep nuclei of your brain called the Basal Ganglia, which mediates action. And, when you're-

Eve:

[crosstalk 00:36:55] had drawn a little cartoon of Basal Ganglia.

Rachel:

Yes, yes. That is not exactly what they look like, but it is close. So the Basal Ganglia, through a very complicated circuitry that I can't promise that after four years of Med school, a year of NIH neuroscience research and two and a half years of neurosurgery residency, I can't claim to really very fully understand it, but ultimately what happens is your Basal Ganglia decide to release the signal to the rest of your brain to move, to reach for something, to walk in a direction, to start writing a paper, to cook yourself dinner.

Rachel:

So what the reward circuitry does is your reward circuitry makes this calculation and says, "This is good for me," and sends a signal to the Basal Ganglia saying, "If we reach for that chocolate chip cookie that's

sitting there, I'm pretty sure it's going to taste delicious." And so then your Basal Ganglia sends a signal to your arm by way of the thalamus and the motor cortex and whatnot, saying, "Reach for that cookie and put it in your mouth," and then you do, and then you get all these little dopamine firings that say, "That was a really good cookie and it was gluten free."

Kieryn:

Yes.

Rachel:

I know, right? So that is sort of the crux of how motivation typically works. Now, learning in general, how do you get yourself to move? You realize something is good for you, and then you coordinate your actions around that. Now, there's more than just reaching for good, another known circuitry or sort of motivational thing is harm avoidance, avoidance of pain, fear, there's different ways to describe it, but basically, it is when something hurts you, you run away from it or if you think something is going to hurt you, you run away from it. Or if you think something is going to hurt you, you just don't engage it, you avoid it. And this-

Eve:

Fight, flight or freeze.

Rachel:

... is known to be distinct from the reward based learning in psychology, and if you take Psych 101, you will learn that classical learning theory, it's different from punishment learning or negative learning, or ... I don't even remember the terminology to be honest. But so I was thinking about why is it that I can't motivate myself to write a paper? And I thought, "Well, it's not because deep down I don't think it's good for me, it's because I'm not used to organizing my actions towards what is good for me."

Kieryn:

Right.

Rachel:

And then I thought, "Well, how could I write papers in college?" It was because I was so freaking terrified. I convinced myself that the world would end if I didn't write this paper, and it was incredibly painful every single time but I got it done, and then my world actually ended, and then I stopped being scared of the world ending. And so I-

Eve:

Well, and you have this conversation with your brother at this point about A's and B's.

Rachel:

Yeah. Okay, so ... Well actually, so this is when I had this ... So it was a couple, maybe a week or two ago, this is when I had my theory about ADHD and motivation and I realized that it may have been that in my life, the reason that I succeeded despite having severe ADHD with a reward circuit that didn't function properly to direct my behavior, that maybe I just compensated by making myself afraid, and using fear, and using that harm avoidance circuitry, bolstering it to drive my actions in a way that protected me so

that I could at least move, even though I couldn't move towards the things that were good for me, I could at least move away from the things that were bad for me, and then set up all of these safeguards to make sure that I had all of these guardrails to bounce me along the right path, of moving away from things that are bad for me. And so I called my younger brother, the one who discovered for me that I had ADHD, and that he does too, and since then, I think five of my eight siblings have been diagnosed with ADHD.

Rachel:

I said, "Paul, you and I both got straight A's in college, right?" And he said, "Yeah." And I said, "Did you ever like getting A's or were you just scared of getting B's?" And he said, "Oh, scared of getting B's. A's never felt good. I was just too scared of what would happen if I got a B." And I was like-

Kieryn:

Yes.

Rachel:

... "That doesn't even make sense. Getting a B is not actually harmful. It was fake harmful, and that's how we managed to make ourselves to get A's. And so then after that I called Eve or I texted Eve and I said, "Eve, I have a theory about dopamine and ADHD and motivation, and I want to run it by you." And so she was like, "Sure, give me a call." So I called her and I said, "What if the way we decide to do things, our motivation for things is supposed to be from our reward circuitry and figuring out what's good for us, but when we have ADHD, it doesn't work? What are the other ways you can get yourself to move?" As a human being I have found that being afraid has made me able to move ... To avoid pain, I can move, and also for people I love, I can move. I call it altruism.

Rachel:

There's a lot of different ways you can put it, but I can't cook dinner for me. I can cook dinner for my brother, I can cook dinner for someone I love. That is very easy for me. I can work a 30 hour shift ... Well, technically 24 hours plus four or six for charting, I think, are the rules. But I can do it. And people say, "How can you work that many hours in one go?" And I say, "Because I love my patients so much," and that's the truth of it. But if you ask me to make myself dinner, I am very often just paralyzed and overwhelmed, and this, I have found is a common experience for many people with ADHD. And if you look at the things that ADHD people tend to have with their ADHD, they tend to be very loving, caring, giving people, and they also tend to be very anxious people. And my theory-

Kieryn:

I am both of those things.

Rachel:

... about ADHD is that ... My theory about ADHD is that in order to get ourselves to move, to get that signal from our Basal Ganglia, from our pre-planning, send it to the Basal Ganglia and say, "Let's move towards something." If our rewards circuit isn't there to tell our Basal Ganglia, "Please move because that chocolate chip cookie tastes good," then we have to hijack another circuit that was only meant to be a guard rail or a bumper to keep us out of trouble, and we have to make it drive us because otherwise we will starve to death and die.

Kieryn:

Yes.

Rachel:

And so that, I think, is So that is my theory as to why people with ADHD tend to have a lot of anxiety and fear, because we have had to ramp those things up to get ourselves functioning. And that is why we tend to be extremely loving people because if we ... We can't do it for ourselves-

Kieryn:

No, that's-

Rachel:

... we can do it for other people, and if it's about us, sometimes I can feed both of us, even if I can't feed myself.

Kieryn:

Yeah.

Eve:

It's like when you have an injury of some kinds of all of the other muscle groups around the injury build up in order to compensate.

Rachel:

Exactly.

Eve:

And that's functionally what we've done to ourselves.

Rachel:

Right, we have built up our brains. And so I was thinking about this theory, of having three different motivators for action. I was trying to Google them and to try to flush out, see if anybody's actually looked into this before. And there is actually a psychologist named Cloninger who developed a tri-partite theory of personality that he ended up adding a fourth part to, but his four parts of personality, which is used in a standardized personality assessment now, it's a validated tool that is used in many different realms of neuroscience. The TCI assessment tool. I don't remember even what TCI stands for, but Cloninger is the name of the guy who invented it. His four parts of personality that he identified are novelty seeking, reward responsiveness, harm avoidance and persistence. Now, in my theory, novelty seeking would be that rush, that thrill, that joy that you get from dopamine, from the things that are good for you.

Rachel:

Reward responsiveness, if you look into his definitions of it, has to do with the social cues, doing things that are good for you socially, whether or not it helps you by making you friends. And then there's harm avoidance, which is that fear-based thing, trying to move away from things that will hurt you. And then

persistence would be more of your ability to form habits, to do things without sort of great reward now, but to sort of plow through and-

Eve:

[crosstalk 00:46:09] in autopilot [inaudible 00:46:09].

Rachel:

Yeah, exactly. And so this is in terms of looking at it as personality, and they've done studies that show that people who are more novelty seeking tend to have less receptive dopamine responders, people who are more harm avoidant ... Now, everybody has these factors. It's like what is the relative strength of it? So people are more harm avoidant, have changes in their serotonin responsiveness and their serotonin receptors, and interestingly, people who have inattentive ADHD tend to be more harm avoidant than the standard person. And so there is some science behind neurotransmitter receptors being drivers of personality. But instead of looking at it in terms of personality, I think I parsed it in my head as what are the things that make it possible for me as an organism to move towards something? To organize my actions towards something. And these are the different calculators that you have or the different drivers or things that can give direction to our movement.

Rachel:

So if you can imagine it like a car going down the highway. If your desire to go to the movie theater to have a good time with your friends because it's fun, is the steering wheel that helps you stay between the lanes and the gas that helps you go in the right direction towards the theater, and those guard rails on the side, on the left and the right, are harm avoidance, "Don't fall into that ditch," and your sort of social responsiveness of, "Don't veer into the other lane or go into the traffic that's coming the other way." If those are your guardrails, if think about it, if your steering wheel doesn't work and the only way you can keep yourself going in the right direction or going in any direction at all is having those guard rails built up really strong and responsive.

Rachel:

So that you hurl yourself at fear as a guardrail on the right, knowing that you'll bounce off of that and then bounce over and bounce off of your desire to not hurt people and against your utter fear of getting a B, you just make yourself more afraid so that you can move. So you can bounce along like a kid in a broken bumper car to the movie theater and maybe you get to the movie theater but your car is totaled.

Kieryn:

Yeah.

Rachel:

That is how it feels to me, to have ADD.

Eve:

Right. And this is where I see this tying into our upbringings and fundamentalism, is if you're talking about this being a genetic predisposition-

Rachel:

Right, which there's a lot of science that says it is.

Eve:

... the theology behind these teachings that we all grew up with helps build up those walls, those bumpers.

Rachel:

Yes.

Eve:

It makes the bumper walls more strong and so it will-

Rachel:

Which is good.

Eve:

... we're predisposed to seek those kinds of systems out.

Rachel:

Yes, and that's sort of the crux of it is that maybe all of us people, all of us kids of these various religious movements that grow up and are suddenly discovering, and I've talked to lots of people that are like, "Oh, my God, I have terrible ADD," maybe it's that our parents had a genetic predisposition that made them less responsive to dopamine, and they needed a structure in life to make them successful, that capitalized on fear, on avoidance, on-

Eve:

And I just [crosstalk 00:49:48].

Rachel:

... altruism, altruism on love.

Eve:

And I just had a realization. Well, if we've built up the reliance on fear, this is why we all have complex PTSD, because we have these high sustained levels of fight or flight response.

Kieryn:

Yes, fuck.

Rachel:

Because it's the only way we can move.

Kieryn:

Yeah.

Eve:

Yeah.

Rachel:

Because being terrified is the only way that I can function. And how many times ... Oh my God, how many times has my dad said to me that being terrified is the only way he's made it through adulthood? And-

Kieryn:

Yeah.

Rachel:

But imagine this, guys, can you imagine a life where you were driven towards joy, with your fear of harm [crosstalk 00:50:31].

Kieryn:

No. No. I have no concept of this.

Rachel:

[crosstalk 00:50:34] was defined by joy.

Kieryn:

You mean about being a Roomba? Yeah. What you described is basically the entire school experience that I had, where I was just running around like a Roomba, just bumping into walls, trying to figure out where the fuck I was supposed to go, what the fuck I was supposed to do, how I was supposed to cope because I had no idea. I had no idea what was going on or how to move forward, and the only way I got through my fucking homework was because I was harassing myself into it out of like, "I'm going to fail and die," and stuff like that stops working apparently.

Rachel:

Yes. No, at some point, then you've just become an anxious, traumatized mess.

Kieryn:

Me, this last months.

Rachel:

Yeah. But this is just removed so much ... This new way of looking at why I do what I do, understanding and hypothesizing upon my understanding of neurophysiology, of psychology and my own life with ADHD, I feel a lot less guilty about my inability to do things that are good for me, about the fact that I procrastinate. Because one of the things about harm avoidance is that it's only you ... Your harm avoidance system is only supposed to activate when you have an imminent threat. And so if you can't move until there's an imminent threat, that's why you procrastinate, because you're reliant on a circuitry that doesn't engage until the threat is imminent, and that's why you don't write the paper until the night before it's due.

Kieryn:

Yeah.

Eve:

Right. And this is why pleasure feels so difficult because we have to learn how to stop initiating these circus of hating ourselves in order to engage a pleasure moment.

Rachel:

Right. But you know what? It also gives me such compassion towards my parents who had to embrace these structures because it was the way that they could survive. And if you look at these high control religious environments that capitalize on the two things of being afraid and of doing the right thing, like an altruism, doing things for society and not for yourself-

Eve:

They were doing the best they could. [crosstalk 00:52:58] choice that they had.

Rachel:

Doing the best they could, they were just building up those stronger and stronger guardrails to keep themselves on a path moving forward when maybe their brains were also struggling like mine because their circuitry just towards doing things that are good for me weren't strong enough. And so I would say, if I can start wrapping up-

Eve:

Yeah.

Rachel:

One of the things that I have started trying to do in the last couple of last week, maybe since I had this sort of light bulb moment, is to try to start thinking about what are the things that do give me joy? How do I move towards joy with the guardrail of harm avoidance not being there as a dominating brick wall, but just as a gentle guide to keep me out of trouble as I moved towards joy with the people that I love. So I really don't ever want to become ... I'm so terrified of becoming a self centered person honestly.

Kieryn:

Feel it.

Rachel:

And so I just feel like I can hear my parents telling me that this whole talk of doing things that are reward responsive is going to make me [crosstalk 00:54:08] but it's not even about hedonism. We can be good to each other and we can build a good with each other. And I think that our sense of societal connectedness and altruism, and love for each other is meant to be combined with the joy and the pleasure and that reward sensation that dopamine gives us with fear only as a guardrail, and I think that where we have gone very, very wrong as a species in general, but particularly as poor kids with generational ADHD, PTSD and all of the other D's, is that we have allowed that fear-based circuitry to make our lives miserable, and we just have to start forgiving ourselves for all of that misery and say, "This was how I had to cope. My brain allows a better way. My brain can be trained with medication and

with habit and discussion and puppies, to learn how to find joy in life together and let our lives be about joy."

Kieryn:

Yes.

Eve:

Right.

Rachel:

And that is what I hope that we can find a way to do.

Eve:

So how is this ... Yeah, sorry. How is this looked like on a tiny, little little pieces of change level for you?

Rachel:

So for me, I have started trying to eat because I enjoy the food that I am eating instead of because I will pass out if I don't.

Eve:

Right.

Rachel:

And the biggest thing is I'm so freaking messy and I have spent so much of my life hating myself, being ashamed and I sit in my messy apartment, I look around, "It's no wonder you're single Rachel. It's no wonder your friends don't want to come over, because your place smells like dog pee and there's piles of laundry everywhere, and you're just never going to get anyone to want to even spend time with you if you don't get your shit together." And so I have this internal monologue of hating myself until I hate myself so much that I do my laundry.

Kieryn:

Yeah.

Rachel:

But the truth is that now that I've gone on this medication for several years and things are easier, and I'm like, "Maybe my reward circuitry is starting to work in ways that it never did when I was a child." So what if I look at my apartment and I think, "Man, I have such a nice apartment. I really like it better when it's clean." All of a sudden it just so much easier to clean if I'm doing it because I like having a clean apartment. And so just on those teeny little steps of going, "I have to drive home from work," and instead of, "Oh, my God, I have to drive home from work, it is such a slog." But when I get there I can go to sleep and finally not have to engage in the world. Instead I'm like, "Oh, I'm so excited to go home because I get to see my puppy." It's like I'm not escaping the world, I'm going home to something good.

Eve:

You're moving towards something, yeah.

Rachel:

And then I find myself less exhausted at the end of the day, less emotionally fried because I'm feeding in those small bits of just paying attention to what gives me joy, and feeding that-

Kieryn:

And the world hasn't crashed down on you.

Rachel:

Well, it's only been a week. Only been a week.

Kieryn:

Yeah.

Rachel:

But just looking at my experience of my life and the obsessive ADHD Google search that I did, and pub med search for those of you nerds. I use pub med, not Web of science, please judge me if you dare. And talking with my friends like Eve and then my new friend Kieryn, then to playing with my puppy, it just really makes sense. It makes sense. So that's my theory and I want to hear what your viewers think of my theory. Okay?

Eve:

Yeah.

Kieryn:

Yeah.

Eve:

Guys, email us, give us feedback. But I really think this is radical for a lot of us understanding ourselves because I ... Passive suicidal ideation is something that I think a lot of us struggle with-

Rachel:

Defines my life.

Kieryn:

Yeah. Yes, for sure.

Eve:

I'm not actually planning-

Rachel:

Show me a day-

Eve:

I'm not actively planning anything, but if it ended now I'd be okay with it.

Kieryn:

Right. Yeah, there is. Just this week I was like, "I just want to shrivel up under a rock and live there and not exist anymore because everything is overwhelming."

Eve:

Well, and it's because it's this two fold reason. Like we didn't expect to get this far, so we don't have an imagination capable of envisioning what could be next and there's nothing to be afraid of anymore, so we just stall out.

Kieryn:

Yeah. Yeah.

Eve:

Yeah, which is actually one of the fucked up things about the Trump presidency for you and me and Kieryn, is that it feels nice to have an apocalypse looming again.

Rachel:

I know, right?

Kieryn:

Yeah.

Rachel:

I know what to do-

Eve:

Just a little bit.

Kieryn:

A little tiny bit. It's like I was prepared for this.

Eve:

I am so good in crisis.

Kieryn:

I am ready for this shit. I am who you want when shit goes down.

Eve:

My skills have a place to go now.

Kieryn:

Yeah.

Eve:

Oh, my God.

Rachel:

Man.

Eve:

It's fucked up.

Rachel:

That's not the life that I want anymore.

Eve:

No.

Rachel:

I don't want to be living crisis to crisis. There is joy to be had in this world and that is one of the things that Tassif really, really tried to teach me and in his memory I'm going to keep going after that.

Eve:

Yeah. I want to learn how to get excited about growing things rather than by trying to get everything done just in case I die pretty soon.

Kieryn:

Yes. Yes. I would also like that.

Eve:

I want to be capable of having a vision of thriving rather than just getting through something.

Kieryn:

Yeah, I want to have an idea of my future beyond like this year, honestly. I want to have goals and things that make me happy, instead of just being like, "Well I don't know, the country might die in November."

Eve:

Right.

Rachel:

Right. Right, and that sort of goes back to ... So the understanding of your perception of time a lot, how you perceive time has to do with your reward circuitry-

Eve:

... which is why I'm always late for everything.

Rachel:

And so if you are unable to sort of judge time ... And time blindness is a thing for people with ADHD. If you're unable to acknowledge something that's happening until it's a crisis, until it's an imminent harm, then of course you're just always going to be late because you literally cannot get yourself to get the keys and get to the car because that signal is not going strongly enough into your Basal Ganglia until you are already late, and now it's an imminent threat.

Kieryn:

Right.

Eve:

No, and this is the thing that my mom-

Rachel:

And that's why you can't do it.

Eve:

As a child, my parents used to tease me because I would forget to go pee until it was a crisis, and it was time blindness related. I very much relate to that description. I just really don't keep track of it well. I have to be-

Rachel:

I have an app on my phone that buzzes at regular intervals to let me know what time it is.

Eve:

Right, and they used to make fun of me because they used to say like, "Oh, you're going to be on your wedding day, you're going to be walking down the aisle and you'll be like, 'Oh, shoot, I forgot to pee,' and you'll run and make everybody wait until you come back to finish what you were doing," because this is how bad it is all the time. And, it's exactly a function of that. It's exactly what it is.

Rachel:

Yeah. And I do think life can be better, guys. I really do.

Eve:

Well, and-

Rachel:

And that is the message I want to send out.

Eve:

Right, and we've been talking about this since December because I started a new medication that has some dopamine in it in order to address my mental health because I was in a really bad place in November and December. And so I started this new med in December in order to try to nudge me in the right direction, and that's when I took my own list in to my psychiatrist and was like, "What about ADHD in conjunction with this?" And he kind of took the notes app from ... He took my phone and scrolled down and scrolled down, scrolled down, and was like, "Oh shit," and it was this moment of, "Okay, so this is real." And as soon as I started that med, I suddenly had energy to do things and I could remember things that I wanted. So-

Kieryn:

I want this life.

Eve:

... I was at the grocery store and I was wanting to make this recipe that sounded delicious but I had this routine list in my head that's all the things I need to survive. All the high protein foods that I usually keep in the house because if I don't-

Rachel:

Peanut butter.

Eve:

Eggs, cheese, because if I don't ... Yogurt, if I don't eat them, then I'm going to pass out, right? And-

Rachel:

Oh, my God. We are the same person.

Eve:

... suddenly I was like, "But there's this chicken recipe, this Alison Roman chicken recipe with olives that I really want to make. What is the name of the kind of olives in this and what are the other ingredients?" And I seen it about a week ago, read it once and I was able to recall the names of things, the specific ingredients necessary and get them and make it.

Rachel:

What?

Kieryn:

What?

Eve:

And I was like, "This has never happened before."

Kieryn:

Oh, my God, I need that in my life. I want that.

Eve:

So weird.

Rachel:

I have to say one of the biggest things that changed about my life after I started the ADHD medication, was the number of times that I broke down into tears because I couldn't find my keys went from twice a day to just once a week, maybe twice a week.

Eve:

Oh, my God. Right?

Kieryn:

Wow.

Rachel:

And the ability to remember where my keys are, so that I don't have to, as I'm panicked, rushing out late, break down because I can't find them yet again, even though I just had them, that is such a-

Eve:

[crosstalk 01:04:27] big deal. And it's a big deal because when you have to use that fear-based crisis motivation to get to the point to get the keys to get out the door, you're already well on the way to a panic attack, and then if something goes wrong on your way out, then it really actually happens.

Rachel:

How many times have you been told that you are overreacting when really all you're trying to do is just muster up enough of a reaction to make you move?

Kieryn:

Yeah.

Rachel:

So-

Eve:

I think that's a really good note to end on.

Kieryn:

Yes.

Rachel:

I think so. Thank you so much for having me. And please, I would love for all of you listeners out there to email in or add us on Twitter and let me know what you think of my theory, and-

Eve:

What is your Twitter handle? Where can people find you?

Rachel:

It's ... I am @Racheljoyhunt, R-A-C-H-E-L J-O-Y H-U-N-T, but it shows up as Yorkie mom, because that's who I really am.

Kieryn:

That's legit. Yeah.

Eve:

Very good. Thank you so much for taking the time to explain all this and join us. I think this is going to be radical for a lot of people.

Kieryn:

Yeah, I've been taking notes to bring to the third psychiatrist I'm seeing next week about this exact thing, so thank you.

Rachel:

All right. Well, best of luck and hope, joy and love to both of you and to all of your listeners out there.

Eve:

Thank you.

Kieryn:

Thank you.

Eve:

Bye. Dear listeners, thank you for joining us today. I'm glad this wasn't a trauma based episode. Finally, we had a little bit of a break at it. This is a hope-based one and I really ... That makes me so happy.

Kieryn:

We need more of these in our life, honestly.

Eve:

Yeah.

Kieryn:

Well, if you like this episode, like share, subscribe, do all of the things ... Support us-

Eve:

Rate and review.

Kieryn:

Yeah, support us on Patreon. If you're not already, it's patreon.com/kitchentablecultpod. Email us your thoughts about everything Rachel talked about because I felt like she suddenly lived in my head, and I feel like probably other people do too.

Eve:

Our email is kitchentablecult@gmail.com.

Kieryn:

And thank you Dave for editing this podcast as always.

Eve:

The music on this episode is from the band, The Heavens, and their album's DiNozzo. Thank you so much for sharing that with us.

Kieryn:

And thank you for listening, and hopefully you have an enlightening and entertaining week.

Eve:

All right, we'll talk to you next time.

Kieryn:

Bye.

Eve:

Bye.