

Speaker 1:

So I have the distinct pleasure to introduce our keynote speaker for today, Dr. Bessel van der Kolk. So Dr. van der Kolk is the founder of the Trauma Center in Boston and an expert in the field of traumatic stress studies. His work integrates developmental, biological, interpersonal, psychodynamic and neurological aspects of the impact of trauma and its treatment. And he's pioneered the use of a number of innovative treatment methods for trauma, including neurofeedback, theater, and yoga, just to name a few.

Speaker 1:

He has published extensively on the impact of trauma on development, including numerous books. And this includes his most recently released book, *The Body Keeps The Score*, which he wanted me to be sure to let everyone know is outselling the DSM-5, which is very important. So Dr. van der Kolk has been involved in some of the foundational studies on PTSD, including the first neuroimaging study of PTSD. He was the co-investigator on the DSM-4 field trial and is the Chair of the DSM Work Group on Developmental Trauma Disorder. And so we are pleased to have him kicking off our day today. Dr. Bessel van der Kolk.

Bessel van der Kolk:

Thank you. It's a privilege to be here. I think that the work we do and I am very much, you might have, you might have heard Father Donahue talk. This is God's work. This is very important work. It's also very hard work. I like to say this is more difficult than the most complex neurosurgery, except you won't get paid anywhere close to what neurosurgeons will get paid for it. But it's very important work.

Bessel van der Kolk:

You know, the whole field of trauma tends to be out there focused on soldiers, because people go to war all the time and there's a lot of attention to trauma in soldiers. We learn both about the damage that trauma causes and treatments from soldiers. But it's important to know, which most people don't know, that for every soldier who comes back damaged from war, there's at least 30 kids right at home who are just as damaged, more damaged and they don't get nearly as much attention.

Bessel van der Kolk:

And so what's been exciting about the National Child Traumatic Stress Network is that we continue to grow and we learn. I was just talking to Brad Stolbach and his colleague who are doing glass blowing with traumatized kids. And we talk about, "So, what do you think happens in the brain that glass blowing may indeed someday be an evidence-based treatment and you'll get reimbursed for having glass blowing things?"

Bessel van der Kolk:

Very important part of the work that we do is to be innovative and to not prematurely think that we have the right answer, because this is very complex. And all of the things that we have learned very centrally in the past 30 years or so, we started off talking about trauma and about events. And slowly, what we have learned, is that with kids, the issue is not so much about traumatic events, but it's about relationships.

Bessel van der Kolk:

What we oftentimes lose track of is how our whole mind and brain is built to have relationships and that when you get traumatized, your relationships get impaired. It always gets played out between human beings because we are an intensely social species. And our diagnostic system really doesn't pay attention to that at all. So I'm part of a group of people who do Shakespeare part for traumatized kids also, and this is one of my fellow actors who recently had a baby and she sent me this little video. I thought it would be nice to share it with you.

Video :

Hi.

Video :

Hi.

Video :

Hi.

Video :

Hi.

Video :

Hi.

Video :

Hello, guys.

Video :

Hello.

Video :

Hi.

Video :

Hi.

Video :

Hi.

Video :

Hi.

Video :

Hi.

Video :

Hi.

Bessel van der Kolk:

What Louisa and her little baby Lennox are showing us, is that we are deeply interactive creatures. And what we say is much less important than whether we say it in the right rhythm, in the right musical tone of voice and that the core of our communication is rhythmical and motoric. Psychologists and social workers, we don't really talk about it. We tend to talk about content, but not about how we jive together as people. And this fully illustrated by this movie from the laboratory of one of my closest friends, Ed Tronick, who is an attachment researcher at Boston, who has been studying the rhythms between moms and babies and boys and girls for the last 40 years or so. And he has a particularly paradigm which has become quite famous. It's called the still face paradigm. And it shows what happens when two people are involved with each other and suddenly one of the people drops out and no longer responds to the interaction.

Bessel van der Kolk:

And the reason that I'm showing you that movie is not so much to pay attention to what happens on the screen, which I'm sure you'll do anyway, but to pay attention to yourself. And so I'd like you to notice when you see this movie, you'll probably feel some feelings, some emotions. And notice where in your body is this registered and how you respond to it. Oftentimes when I show this movie, I hear little sounds coming from the audience, sounds of agony or something. It's not an agonizing movie, but it's a little disturbing.

Video :

Here's your juice. Here you go. Oh, the dinosaur is going to drink the juice?

Video :

Mm.

Video :

Mm. Good.

Bessel van der Kolk:

So this is a typical human conversation. You know, most usually when we talk, we don't talk about very important things. They talk about alligators and giraffes. Chicagoans talk about the Cubs and the White Sox, which is actually more meaningless to me than about giraffes. But you guys can get all excited about bowls, hockey teams and all that sort of stuff. That means something to you, but not to other people. So it's not so much what you talk about, but whether what you talk about is of interest to the person you're with. And when you feel that you feel a connection with that person, hormones start flowing, body starts start flowing. And then as they're talking, she has a little bug in her ear and she's told to freeze her face and no longer respond to her two year old son.

Video :

Now if the alligator could eat the dinosaur. Help! Oh, you give the dinosaur a kiss. That's nice.

Video :

I did that. I boy. I do. I do. You do. I do.

Bessel van der Kolk:

Does anybody feel anything in their bodies right now? Can you show me where you feel it? Can you put your hands where you feel it? Yeah. Pay attention. That's the outflow of the vagus nerve, it is where the brain and the body gets connected and you experience feelings in your body. And when you get traumatized your relationship to your body and your bodily sensations get messed up. If you feel a little bit of what's known as heartbreak right now. And when you feel heartbreak all the time, it becomes a very painful thing to carry inside of. Not so much as stories, as that ongoing sensation of oh my God. That is what much of the work of trauma treatment is about helping people with those body sensations that are so painful.

Video :

Mom. Mommy.

Bessel van der Kolk:

And I imagine you feel the desperation in your body right now, your mirror, and neuro system allows you to feel some what that little boy feels. At some of what that mom is feeling, because mom obviously is very distressed as she's not allowed to respond to her baby.

Video :

Mommy. Mommy. Mommy. Mommy. Mommy.

Video :

Hey CJ.

Video :

Alligator.

Video :

The alligator? What did the alligator do? I'll give him a kiss. What can we make? Oh, you want to play basketball? Okay.

Bessel van der Kolk:

And peace and quiet has been restored and nothing has happened. And in fact, we know that these sort of experiences are very good experiences because what we all need to learn is that we can become distressed and sooner or later that distress will come to an end. And so we need to, as we grow up, activate some time clocks in our brain, localized in the dorsolateral-prefrontal cortex of the brain, that gives you a sense of time and gives you a sense that if I become upset, sooner or later, this is going to be over. When you have this experience all the time and it doesn't come to an end the timekeeper of your brain malfunctions and when you're distressed, you feel like it's catastrophic because it will never come to an end. So these early experiences of abandonment of union, frustration and connection, are the way that your brain gets organized to deal with frustration upset and with what to expect.

Bessel van der Kolk:

In the future, I'll get more into it. But at the same time, it's not a completely harmless experience. Six months later, this little boy comes back to visit his mom who happens to be a post-doc in electronics lab and they put a little [canyou 00:13:26] on his arm to check his stress hormones. And as he walks into this room, there's a little blip in his cortisol and stress hormones get a little activated. His body is telling him this is a place where something not so good happened. Very minor. There's no cognition anywhere. It's nothing like, Oh, this room really sucks and my mom stopped talking to me. No, there's something in a deeper part of the brain that has no timekeeping context that says, "This is good. And this, the other thing is bad." And we all get these imprints in our brain, that certain things we are drawn to it because it makes us feel alive and safe.

Bessel van der Kolk:

And other things are repellers because for some reason or another, and we don't know why, our brain tells us this is not a good place. But these are not cognitive things and I'll talk about it quite a bit. They're much deeper than that. They're deep down in our animal survival brain. And so there's, again, this whole nature of our interactive makeup was illustrated by this beautiful experiment by Andy Milsoft. When he was a young guy at the University of Washington 40 years ago, by now. He goes into a newborn nursery and sticks out is stung at a five hour old baby. And the baby sticks out his tongue and he opens his mouth and the baby opens her mouth and he frowns and the baby frowns.

Bessel van der Kolk:

I recently had a grandchild. I tried to do the same thing with her. It worked, although my granddaughter was not quite as responsive as this little kid is. But for all of us who know, who have had little babies know that little babies have no brain. They have no self. There's nothing there basically, except for, "I need to eat, and I need to steep, and I need to poop." And yet when you do something, they respond to you by imitation. We're a deeply imitative human beings. Our whole makeup is to become like other people. I'm sure you detected that [Vexema 00:15:37] has been at the trauma center for four years by now. And she's beginning to develop a little bit, a little bit of a Dutch accent because we pick up the things for each other or vice versa. And so we imitate each other and we move together.

Bessel van der Kolk:

Here's another example.

Video :

(laughing).

Bessel van der Kolk:

It is more likely that this kid will grow up and have a tattoo of a cross with the snakes through it, let's say than my kids, because we imitate each other. So we just become, what we see. It's all monkey do, et cetera. So this is how our brains get formed. Again from electronics lab. This is like a second and a half interaction, just taking all the little frames. And so here we see a two months old little boy, who obviously is delighted to be pulling his brother's red hair. And the reason that this boy so delighted is that he has no frontal lobe. So he doesn't know, "Oh, this the noise that I'm causing is a expression of extreme pain. And my mom is going to be angry with me. No, I'm just having a grand time because I'm just a little boy. And when I move my little arms and his enormous noise, all about me, I'm a one man orchestra."

Bessel van der Kolk:

And this kid is really, really happy. His mom starts off being happy also. But as the pain increases her frontal lobe such slowly go off of line. I'll talk about it in a little while. And so as you become more and more upset, you take leave of your senses. You lose all reality, all perspective as you started to survive. So you go into survival brain. And as all of us who have had babies know from experience, you have these fights to the death like fights with your little baby, which you always win. If we don't, we wouldn't be around any longer. And mom wins. And so the baby now, it's over. And now the little baby is startled because while he has no frontal lobe over here, he does have a little amygdala. The amygdala is little threat detector. A little threat detector sees this angry bear-like face of his mom.

Bessel van der Kolk:

And what do people do when they're distressed? They hide their head in the sand and make things disappear. And so now mom feels separated from her baby. And now she speaks the universal language of mothers and babies. I've heard it in China, India, Africa, and it goes ... Little baby, coo chee, coo chee, coo chee. And no significant cognitive content, as she tickles him and slowly the baby looks. If the coast is clear, he looks at the happy face. And now they're reunited. This is how the brain is built by these interactions that tell you what to expect, who I am. And what we do at this point is we form a map of the world. And our brain is a map of the world. All of us have a map of how things work and how things are, whatever the consequences of our actions are and we all carry a different map inside. That map is based off of our experience. It's not a cognitive map.

Bessel van der Kolk:

It's not a map by, "Hey, don't be stupid. You shouldn't feel that way." That is your map. And like, I've been trying to talk, Brad Stolbach into moving back to Newton, Massachusetts where he grew up, but his map by now is a South side of Chicago map and you see the world as a South side, Chicago person and no longer as a Newton person. And so we need to adjust our language to each other as you talk to people from different places. And so these interactions between us and other people create a brain and that's the work that we do. We deal with people with damaged maps, with damaged perceptions of who they are in relationships around the world; and what I hope to show you is actually how incredibly complex this is, because this goes very deep into the organization of perception.

Bessel van der Kolk:

And so, as we have interactions with people, we get to know other people, we get to know ourselves, we get to know what to predict, what to expect. And this is based on the rhythms and the movement that we have with people around us. And as with anything I'm really encouraging people, particularly in residential treatment settings to do, is to do a lot of moving, interacting, vocalizing, and doing things with people. And that's really where the brain lives. The brain doesn't live in the abstract notions. The brain is also very good in making up stories that don't make any sense. If you don't believe that, replay the Republican primary sometime. Sometimes people just say anything they want to say and what people say, including what I say to you is very dubious always.

Bessel van der Kolk:

So sharing rhythm and sympathy is the foundation of mental health or therapy or church movement, et cetera. And that builds our brain. And so that's how we know ourselves. That's how we are able to communicate, receive communications, have feelings for others, know how other people feel, and it gets hard-wired in our brain. So as we have done our studies in the past 30 years or so, some started by

me, but less so now, but continuing in other centers, we have learned to what degree we are, the brain really gets changed by early trauma.

Bessel van der Kolk:

You see, but see what tape I have here.

Video :

What's making you happy?

Bessel van der Kolk:

So a very important intervention that we have with people is to help to bring them in sync. And so here's a movie from a program at the Trauma Center called The Smart Program run by my colleague, Liz Boerner. And I recently showed this at a big conference and Liz said, "You know, you are talking way too negatively about the mother in this movie. What you don't talk about is the fact that she lives two long bus rides away from the trauma center. And she's very dedicated to take care of her kid. She doesn't know. She doesn't know how." And it's interesting that the mother, who you'll see, doesn't play a particularly sympathetic role here, is in fact, a very dedicated person. So you can be very dedicated, but still completely missing the boat about what's going on. And that's where we come in, hopefully in terms of helping to make some sympathy.

Bessel van der Kolk:

So let me tell you first how this whole program started. It's very interesting. The Trauma Center has a reputation as the place where we can do amazing things and we like to think that way about ourselves. And in fact, I'm always disappointed that's not actually true. And there is a particular, because of the sociology of where we live, we are basically a Medicaid clinic. And when we have to do something out of the Medicaid realm, it's self pay oftentimes, and because of the sociology of where we are and the area that we live, we have a lot of gay couples who adopt kids and they can have enough resources to pay for special things. And so we see a fairly large number of adopted kids by gay couples. Massachusetts probably was the first state that legalized it.

Bessel van der Kolk:

And, what of course happens to these couples is that they're very well-intentioned, they're very thoughtful people, very hardworking, but the adopt these kids and they think if we adopt this kid sooner or later, our love and our warmth and caring will rub off on this kid. And this kid will become just as loving as we are and much to their astonishment, it doesn't happen. And so we've run into adoptive parents all the time who are extremely frustrated, at a loss, scared about the fact that they really cannot get through to these adoptive kids. Again, because of these early brain changes that interfere with rhythmicity, movement, interaction with other people. And so this program started when a couple came to our clinic with a like, four-year old Chinese girl who had lived with them for two years and who still wasn't speaking. And she was brought to us like, "Hey, can you help this kid to talk?"

Bessel van der Kolk:

And so, one of our best clinicians was working with her and she threw everything at her, did everything. And after six months nothing was happening, the girl was still mute. And so, then I think one of the better things at the Trauma Center comes out is that rather than saying, "This is hopeless." Or let's do more "evidence-based treatment," which is all a hoax, it really is, they said, "So what else can we do?"

Because so much of this work should be experimental to discover new treatment methods. And what Debra Roselle finds out is that there's a group of occupational therapists outside of Boston who do sensory integration.

Bessel van der Kolk:

And we sent her for sensory integration, and in sensory integration settings, kids learn to walk with balance beams and they sit on swings and they sit on under heavy blankets and they activate the vestibular cerebellar system of the brain, a system that you probably don't talk much about it. For one thing, they're fancy words, but just the part of the brain that sort of puts most elementary sensations together so that people can engage the world.

Bessel van der Kolk:

And what we know from our studies about the brains of traumatized kids, is that basic rhythm movement integration part of the brain is quite damaged and many traumatized kids develop, for example, very severe learning disabilities. We are so preoccupied with controlling their behavior that we really oftentimes miss that underneath it all, they have major problems with movement integration, coordination hand-eye coordination, et cetera, et cetera. Because we are too preoccupied to just get him to behave, to see that when you get underneath that, there's all kind of other stuff. At the end of this morning, I hope to talk a little bit about neurofeedback because now that we're doing neurofeedback and are able to rewire some of the brain as we are doing, what we see is that kids' behavior becomes more normal. And the next thing that emerges is that the sensory integration problems become much more visible. And then again, we can work with that also.

Bessel van der Kolk:

So after, let's say two months at the sensory integration place, this Chinese girl starts talking. He said there was something about working with rhythm, movements, sensory input that worked. And this is Liz and Liz is sort of typical for a lot of the people I meet here. It's again, an interesting social issue. I notice that men basically have a straight career track and if we drop off the track, we never can jump back on. Women, these days have interesting different careers. They have oftentimes very, very intense careers when they're young and then they take time off to base their babies and they come back in workforce oftentimes in their late forties, early fifties, and they have the second career and use what they learned a generation earlier to apply it now. It's a very creative and interesting people, and Liz is one of them.

Bessel van der Kolk:

So Liz, as a young person was a psychologist who worked with autistic kids. Now she hears this story about this girl says, "Yes, I used to do the same thing with autistic kids. Let's start a sensory integration program at the trauma center." And we do, and what we see here is a brief session. One of the first things we learn as we are experimenting with it and we take these videotapes and we look at them together to see what actually happens.

Video :

I can't wait to see the face of my father, his face.

Video :

You can't wait.

Bessel van der Kolk:

That when kids jump rhythmically up and down on a trampoline, something changes in the way they talk. Namely these kids and you all work with them, you know what it's like. They're sort of in the moment, agitated, freaked out, frazzled, disconnected, filled with feelings. And what we see oftentimes is when kids start jumping up and down, they start talking about yesterday and tomorrow. The capacity to think about yourself over time is a critical capacity to get a life for yourself. And so, you need to think about, "What happened to me yesterday. What's happening to me now and what am I going to do tomorrow?" I mean, you lose that sense of time you're locked in and a slave of the moment. And so what we see when the kids start jumping up and down, that time sense starts coming on line. So we love to have kids jump on trampolines because something happens in their ability to look at themselves and organize themselves.

Video :

Your father's face.

Video :

When I give him the PSP.

Video :

A PSP? What's a PSP?

Bessel van der Kolk:

And then as I've watched this tape, I'm a very body-oriented person, much of the work that I've done is about trauma and the body, I see. I always look at how people move together and doing a lot of talks like this, I'm also impressed how human beings are a little bit like Shoals of herrings. One person move their position and other people move their position. You don't notice. You just sort of automatically move together with people around you. And like on a morning like this, it is very unusual that a person will make a movement of their body that is totally out of sync with anybody else. That's very different for you when work with traumatized kids. Traumatized kids are just having their own movements and they're not very well in sync with each other. That may be very important for the work that we do. Maybe singing together, moving together with the kids that we work with might actually take care of a core neuro-biological function of integration and interaction between people.

Bessel van der Kolk:

And so I see this odd shape moving into the picture, whose body movements are out of sync with whatever else is going on. And I get a little alarmed.

Video :

Hey, let's do a hand PlayStation 2 just for the game.

Video :

Uh huh (affirmative), so you want to make your dad happy too. Making your mom laugh out there, making your dad happy.

Video :

He's goofy.

Video :

Huh?

Video :

I said he's goofy. He's goofy.

Video :

He's goofy?

Video :

Yeah.

Video :

Uh huh (affirmative).

Bessel van der Kolk:

And what she says is also out of sync. So I'm really getting all this lack of synchronicity in this boy's mother. There are not in sync with each other. It gets worse.

Video :

Now, I'm stuck.

Video :

He's good at getting me laughing. Sometimes.

Video :

It's a good thing.

Video :

It's a good thing, huh?

Video :

Yeah because I had a rough week. This is [inaudible 00:32:22].

Video :

Yeah, rough week?

Video :

I didn't want to come.

Bessel van der Kolk:

How many people were upset by what you just saw anybody? Ah, so we need to do some more body training. Let me play it back for you. I can't play it back.

Video :

Sometimes. That's a good thing, huh?

Video :

Yeah because I had a rough week. This is [inaudible 00:32:51].

Bessel van der Kolk:

You see it? So this is a diagnostic issue and that's why you want to see these interactions. The boy has been talking. Mom gets on her own agenda. She starts talking. The boy falls down. That means that in this particular family, people are out of sync with each other. There's only room for one person at a time to be the center of attention. It gets worse.

Video :

Rough week?

Video :

I didn't want to come today.

Video :

Two and two?

Video :

Felt really bad and I don't even know why. I don't know why.

Video :

Right now my feet are sore.

Video :

I get real, I feel like I'm [inaudible 00:33:36].

Bessel van der Kolk:

Yak, yak, yak on his part, yak, yak on his part. No connection.

Video :

[inaudible 00:33:44].

Video :

So you're having to get a new phone.

Video :

Where is that?

Video :

It's at the house. It came in the mail.

Video :

Just now today.

Video :

Oh cool.

Video :

Catch.

Video :

I had decided to get that safe link phone.

Bessel van der Kolk:

Anybody upset by what you just saw? Who was upset by it? If I lived in a family where this would be the habitual interaction, I'd become acutely suicidal, huh? If whenever you do something, people ignore what you're doing. If nobody viscerally engaged with you when you start talking about something and people change the subject. Where you move something, somebody moves in the opposite direction. You lose your context as a human being, and in energy you die inside. Huh? And I think much of the problems of this kid are attributable not to specific traumatic events, but to the fact that nobody is in sync with each other and nobody is seeing anybody else and their mirror neuro system are out of sync together. Now, this is part of the reason why I only want to do supervision with videotapes because this will never be reported. You can only see these things to see what people.

PART 1 OF 4 ENDS [00:35:04]

Bessel van der Kolk:

Will never be reported. You can only see things, to see whether people are in tune and in touch with each other.

Speaker 2:

They didn't have it on TV. It's student government. They put like \$84 a month on it, and it's a free phone for emergencies. And I'd rather for him to have that..

Bessel van der Kolk:

Yak, yak, yak, yak, yak...

Speaker 2:

-because now he's going to be going into the sixth grade. He needs it. I want him to start learning the phone and everything.

Bessel van der Kolk:

Everybody's living in their own world.

Speaker 2:

I really think he needs it.

Speaker 3:

Stop throwing it over there.

Speaker 2:

Because a lot of times he leaves his...

Speaker 3:

Key.

Speaker 2:

His key.

Speaker 3:

My key's- thank gosh.

Bessel van der Kolk:

I actually have edited this down. Liz works with him for about 10 or 20 minutes to get them to be in sync with each other. And now something is beginning to emerge. The implication, what I'm talking to you about, you need to have some basic tools in your office. One of them is a little trampoline, so people can jump up and down. The other one is to have a beach ball in your office. Very important to have a beach ball, so you can play rhythmic games together. So you're getting in sync together, and you get some of what you see now. So, as they start getting in sync with each other.

Speaker 3:

Snake eyes! No snake- snake eyes!

Bessel van der Kolk:

Now you just heard the first meaningful sound in this whole movie. Mom goes, "Haha." It's the sound of pleasure. The word pleasure is absent in most psychiatric textbooks. When my book came out, I proudly said, "I talk about pleasure all the time." I looked at the index, my editor had left the word pleasure out. So I immediately had to sort of re-insert it if you have my book. The first editions have the word pleasure not in it, and the later editions have 23 references to the word pleasure because pleasure is what life is all about at the end, and pleasure is so dramatically lacking when you're traumatized.

Speaker 2:

27.

Liz:

27. [inaudible 00:37:25] can hear a little something.

Speaker 2:

[inaudible 00:37:29]. You got me good. [inaudible 00:02:34]. I'm sorry. There you go.

Speaker 2:

I said a message here is when you're in sync with people, if you sing in a choir together, if you play music with people, if you play volleyball, if you do anything that requires you to adjust your ethnicity to other people, the feeling of joy is inevitable. You cannot feel miserable singing Handel's Messiah. You cannot feel miserable playing volleyball, because that's how our brain is geared is to be in movement with other people and to be in sync. And so this should be an essential part of all of our therapeutic interventions with traumatized individuals, particularly kids. So how do kids process trauma in general? It all depends on their attachment system. The first person who really studied this and the first great study to really nail this down was done by Anna Freud, Sigmund's daughter in London at the end of the second world war.

Speaker 2:

As some of you may know during the second world war, London was being bombed by the Nazis. Actually was just bombed. I would make the short story short. And large parts of London were destroyed by rockets, rockets that later on were the beginning of the U.S. space exploration people because we got these Nazi scientists to come over here afterwards and build rockets for us to send people to the moon, which had been used before to bomb London. And so these poor people in London, after they see the houses being destroyed, seeing themselves being bombed and in a very well-meaning way, they think, "We should get our kids out of here. So our kids don't get traumatized by all these bombs." And if you have been to England, the English countryside is one of the most beautiful countryside you can imagine. And he said, "If you just get our kids out of here, they going to be great."

Speaker 2:

And they got a large number of kids out of London and had posted them with farm houses and little villages and parsonages and stuff like that. One of those people was Oliver Sacks. If any of you have read the final autobiography of Oliver Sacks, he writes about being one of these kids who were sent out of London, away from his parents, and how it was one of the most traumatic events in his life. And so after the war is over, about half the kids who stayed at home, being bombed, living in shelters, seeing rubble and dead people. And the other half has been in the countryside all safe. Turns out that the kids who were in the countryside all safe, did much worse than the kids who stayed in London. And then being removed from your parents was more traumatic than being bombed. And that is something that we don't pay enough attention, to my mind, is that the primary source of predictability is safety for kids is their parents.

Speaker 2:

One of our postdocs at the trauma center, about 20 years ago, did a very interesting study. She followed kids who were being moved from foster home to foster home and how they reacted to it. And she discovered that the move from one foster home to another was as traumatic as the original traumatic event that caused kids to be removed from their parents, and in our system, and yours is Chicago must still be all the difference from ours and in Boston, and the terrible things that's happened to traumatize kids, is they get moved from one place to another, and his movement of being moved to one place to

another is the long range, probably more damaging to their minds, souls, and brains, than the original trauma. So people like us are continuously in this horrible dilemma of, is it worse to remove this kid from their home, which may not be safe, but it's a home, or are they better off going somewhere else where people do not have a commitment to be with them no matter what?

Speaker 2:

And I had a slide that I left out here, which I've shown, I think here in Chicago before of, I was in the hearing in the Senate a few years ago of the foster care committee. And there were four kids there, were foster care kids who had just graduated from high school. They were served exhibit a of how great the foster care system is. And these kids said, when I asked him, "Would you like to tell us something about treatment?" They said, "Treatment was always a punishment for my behavior. We were giving these crazy diagnoses. And these diagnoses is who we became and nobody saw who we were anymore behind our diagnosis. And then people were going to Medicaid, these diagnoses, and many of these medications could not make up for not having love and consistency." And so these kids were quite exceptional kids who survived this horrendous system, but they said, when they graduated from high school, there was nobody there in their lives who have known them for longer than six months.

Speaker 2:

To my mind that's just mind blowing. You are a person who has been completely unknown to anybody right now who doesn't know what you look like a year ago or five years ago or 10 years ago. And you are starting fresh all the time. So the kids that we worked with have very rough and horrendous lives. And of course, when there are political issues going on programs like ours are always the first ones to be cut because we think that people say, they think that this is sort of a luxury of treating kids the way we do it and that we should just let them find their own way. In fact, of course, we are doing some of the most important economic worth virtually in the world. What we know is that there's about between two and 3,000,000 kids a year who get traumatized and trauma is still the kids forget about their trauma or are very resilient. They overcome it.

Speaker 2:

And so what we know is that in the long range that having been abused as a kid is the single most preventable cause of mental illness. So having been abused as a kid is the greatest source of alcohol and drug abuse, is the most important source of becoming HIV positive and any other sorts of illnesses like Hepatitis C, has to do with lack of taking care of yourself. And it also has long-term effects on people's health. And it's probably one of the reasons by the American health system is so much more expensive than the healthcare system where a public policy makes sure that kids are not living in poverty and are traumatized. So it's one of the our most expensive things. Overall, the cost of child abuse is higher than cancer or heart disease. This is the work that you do, and that's why you call it God's work.

Speaker 2:

So let's talk about what happens to trauma, to kids who are exposed to a trauma. And my poster child for that, no longer a child is a boy who is called [Noam Sole 00:10:19]. And there's a picture I took of him on September 14th, 2001. Noam at the time was five years old. He had just started primary school in New York, in P.S. 234, which is a primary school at the bottom of the World Trade Center. So he goes to school at quarter to nine in the morning. And seven minutes later, he witnesses this from his classroom, only it's much closer because he's right underneath. And so he hears the explosion. He feels the heat, et cetera, et cetera.

Speaker 2:

And then, sort of, a process happens, to my mind, really illustrates what happens when people are exposed to a potentially traumatic event. His dad has run back to the school as have the other parents, they have just dropped him off, and now they start escaping from the disaster. So these are pictures that we have all seen. And when I showed this to mental health professionals and they asked them, "So what do you see here?" They almost always say, "I see very scared people. I see panicked people," because mental health professionals are trained to pay attention to emotions. In fact, as a scientist, I'd like to say, no, you don't see scared people. That's something that you infer. What you actually see is that I see people who are running, but because you have trained as a mental health professional, you ignore the most obvious. Happens to me all the time also because we all get these funny maps of the world, and we ignore the most obvious in favor of our ideological preferences. These people are running.

Speaker 2:

And the issue of running when you're traumatized is terribly important because this is the fight or flight reaction. And when you're traumatized, as many people in this room get exposed to danger from time to time, and you can move your body, you can do something to get away from the danger you're going to be okay. So running, and fighting, and moving, the fight flight response is actually very good for us. And as long as you can engage that particular behavior, the likelihood you get traumatized is very slim. In fact, the data after 9/11 in New York is that there were very few New Yorkers who were traumatized by the events of 9/11 because their response was so fantastic. Nobody had to hide anything. Nobody said "You're to blame for it." Or nobody said "You're exaggerating," or nobody's said, "Shut up. It's your own fault," all the stuff that the patients we worked with all the time get was there an outpouring of generosity from all over the world to take care of people, said, "Yow can we help you?"

Speaker 2:

And as a result, less than 5% of people in New York got PTSD in response to 9/11. And the people who did get PTSD, almost all had severe prior trauma histories. So the running issue was important. The running issue is very important for Noam, this little boy, that's what we're going to come back to.

Speaker 2:

And so as this event evolves, and it quite evolved in it, I have a flashback to the last page of my anatomy textbook in medical school here at the University of Chicago. I hope you all have flashbacks like that from time to time. And I think, yeah, that exam book showed what happens to when people get exposed to trauma and they activate our bodies to fight or flight. But I researched it, also had shown is that when people get scared, frightened, upset, they lose their frontal lobe. This stopped, they started becoming irrational and they activate our bodies. Now, people in our profession tend to ascribe things to their patients and the people you work with and rarely talk about themselves. We be like to sort of distinguish ourselves who are perfectly healthy from these really messed up people we worked with. But let me ask you, you don't have to raise your hand. You probably wouldn't do it anyway. Has anybody in this room ever said something really mean, nasty, and horrible to the person you love best in the world? Well, anybody?

Speaker 2:

Do you ever take leave of your senses? Do you ever become a complete asshole, as it were? And yes, we have all been there. And then, so we are, that's part of what our relationships are about. And so let's say

you have been a bad person. No, let's say your spouse has been the bad person. Let's blame the other person now. So your spouse has lost it, has said terrible things to you, but you love your spouse. And so now you get to work when it's over and you say, "Oh, honey, I know you were really upset because something's happening with your mom, or you work at the Mercy Home, or you work at the trauma center, or the people are treating you badly or you're not paid ton of money, or how you make some sort of rational explanation of why you've misbehaved. After a while, it turns out that those explanations are not enough because we can also discover that there is a boring sameness to the eruptions.

Speaker 2:

Have you ever noticed that? It's always the same words, the same movements as a boring stuff that happens in your relationships. Not nearly as interesting, creative as everything else you do, but your normal frame of mind. And so what you really should say to your honey is, "Honey, I noticed your frontal lobe doesn't mean these things, but when you get upset, your frontal lobe shuts down, your limbic system takes over, the very primitive part of your brain that was created when you're a kid to help you to survive. And then you become this primitive animal type person who says, whatever they said, so let's get you not some frontal lobe therapy to talk sense to you, but let's get yourself some limbic system therapy, have some therapy that helps to change these core defensive structures in your brain." And then I recently looked this up on the internet because I suspected if you typed a limbic system therapy, my name would come up, but I typed it in, and when you type in, limbic system therapy, nothing comes up.

Speaker 2:

So the most important thing that we need to do in our work, namely a limbic system therapy to change this core emergency systems that lie deep down in our [inaudible 00:52:16] brain are still largely on the [inaudible 00:52:18]. And so that's the big issue is how can we stay in charge of our frontal lobe? And how can we, that background noise, the emergency system back there becomes a background noise and they'll take us over. Of course, in your case, that background noise takes over from time to time. Hopefully not too often. In the kids we worked with, it takes over all the time. And then the big question is how do you build these front lobes. All of us have raised kids, and we notice when your kid is a three-year-old, your kids have temper tantrums all the time. Your kid has meltdowns all the time. And then slowly as they get the frontal lobe, the meltdowns go down and don't blow up as often because their frontal lobe is beginning to sit on top of these animal brains, has being able to manage that to some degree.

Speaker 2:

And now the question becomes, how do you build up a frontal lobe where you can sort of guide your emotions and your emotions do not guide you? We will get back into that also. But the important thing is that the vegetable brain, the inside part of the brain, the understanding part of the brain, the cognitive part of the brain, cannot abolish emotion, sensation, and thought. It can help us to manage it to some degree, but there are no direct pathways from your rational thought. I'm actually flabbergasted why cognitive treatment has become such a prominent treatment because I don't know if you've ever tried to talk sense into your spouse and point out the error of his or her ways. I have found that to be not a particularly helpful treatment. My wife actually says, you are such a corporative, behavioral, CBT person. Whenever we get into an argument, you try to straighten out the error of my ways.

Speaker 2:

And she says, we need to do better than that. So understanding why you feel something doesn't change how you feel. It helps you to some degree to manage these to lessen, some degree. So how do people calm themselves down? They calm themselves down by becoming safe. How do people calm themselves down, how do we calm ourselves down when you're upset? The most important thing that helps us to calm ourselves down is voices, faces, and touch. Hugging and being held is still the most elementary way in which we feel safe. In environments like ours, we don't hug and hold our patients, but somebody better hold them and hugged them. And so in certainly in my practice, I have a very close alliance with very good body workers who can make it safe for people to feel held and to be touched and to continue to get the comfort of touch, which is the most elementary human thing.

Speaker 2:

So good luck to you in your system to see how you can introduce the notion of touch as a therapeutic enterprise. Of course, in New York, after 9/11, I was down there much of the time, people were hugging each other all the time because that's what we do when people are frightened. Not only hugging helps people calm themselves down, a kind face, a voice. With [inaudible 00:20:46], movement will do it. So let's go back to Noam.

Speaker 2:

Noam is this boy who gets exposed to this is horrendous stuff the morning of 9/11. And on the morning of the 12th of September at 9:00 AM, he draws this picture. A few days later, visited by friends, and he proudly shows me a picture. And I say, "Boy, that's an amazing picture. I'm writing a book. And I would like that picture to be in my book because it's so great. Can I have it? Would you give it to me for my book?" He says, "Oh no. I'll sell it to you."

Speaker 2:

I say, "Okay. How much do you need?" He says 100 dollars. That's pretty stiff, but I want that picture and I'll show you why I want that picture. And so I give him 100 dollars. I proudly own this picture now. And then he learns a lesson. He lives two blocks from the World Trade Center. He starts drawing pictures like this all the time. He sells them to the tourists who come to the World Trade Center. He becomes a very [inaudible 00:57:00], that's the American way. To transform your trauma into some private enterprise. Good for him. And 100 dollars wasn't so bad, was well worth it. Why was so I eager to get this picture? We can see here is this picture of this five-year-old boy. And what he saw was the plane, or what he thought he saw, [inaudible 00:57:24] reconstruction, plane flying into the World Trade Center, no smoke or fire, people jumping out, firefighters. And I say, "Hmm."

Speaker 2:

So what's that black thing over there? He says, "No. When the fireball came, that generated a lot of heat, and the heat came through our classroom window and I thought we were going to burn up." It's like, yeah, that's how people remember trauma. Not as a story, as a sensation. They remember this smell. They remember this sounds. They remember the images. That is trauma. Trauma is not a story. It's an imprint of unintegrated sensations. I don't have time, actually very important issue in terms of treatment, but I don't have time to talk about it. Also, but, it's about the imprints, and so has everybody who I've met who was in the World Trade Center that day is triggered by sounds, because as they were running down the steps, they felt this gigantic building was beginning to come apart and the joints were beginning to creak. And they were running against the sound of the disintegrating building. And that

sound, the sounds are the triggers., just like the sound of gunshot wounds or the sight of blood or something, police uniforms, or something will be to trigger for people.

Speaker 2:

It's not a story. It's sensations. And then I asked this kid, "So what's this thing over here? And he says, "Oh, that's a trampoline." And I say, "What's a trampoline doing here?" He says, "So that when people have to jump, they'll be okay." And my mouth dropped open. And that's why I wanted to have this picture, because imagination is everything. As long as you can imagine new outcomes. That is so horrifying about when our president came on the news a few days later, I was eagerly awaiting what he would say. And what he said was, "We'll kill them dead or alive." And my heart sank in my shoes. I thought, "He is a limbic man." That is a limbic response. If somebody hurts you, and you hurt him right back. That's the response of somebody who doesn't have a frontal lobe, and the reason...

Speaker 2:

It's true. So we need to have frontal lobes. If you don't have frontal lobes, we are reactive. And we become dangerous to everybody around us because we'll just do whatever our feelings tell us to do. The reason why we're humans, we have a frontal lobe. If we think about the consequences of our actions, and we think about new possibilities. Now, as you have noticed, the kids who we work with are very limbic. They're very reactive. Also, they have no imagination. Let's say you came this morning and there is something about me that really bothers you, and you think to yourself, "Why the hell did I come here." And now there's two possibilities. If you don't have a frontal lobe, all you feel is your feelings of being bothered by me. And the possible embarrassment of having to get up and running out of here, or getting up and confronting me. So you have to do something.

Speaker 2:

If you have a good imagination, you can just sit there and wonder would it be like to throw arrows at me, you can imagine what it'd be like if somebody was coming to assassinate me, be nice to think about when you next vacation the Caribbean, you can think about making love to somebody, and you can spend your time perfectly here having a great imagination and not being bothered by me. If you have no imagination, you are a victim of where you are. The building up of imagination is a critical part of treatment. And so any treatment, to my mind, that builds up people's imagination when you're traumatized is by definition, a good treatment. And so one of my favorites treatments that I may show you a video about is theater work, where people they get to imagine what it's like to be another person other than who they are. To imagine playing a role of another creature. They're feeling, "Oh, that's what it feels like to be somebody else, oh that's how that person would move, or what that person would say, which is different from what I would say and how I would move."

Speaker 2:

So anything that helps people to move their imagination into new possibilities is by that definition, a good trauma treatment. Okay. So I'll give you a break after this. So, when I first started to work with kids, I was working with a woman by the name of Nina Murray, who was the wife of Henry Murray, the inventor of the TAT, which some of you have heard about. And she also had studied with [John PIJ 01:02:35] in Geneva, and she taught me a lot about child development and brain development that we started to explore together. And so what we did is we cut out some pictures of the local newspaper or magazines and made our own little TAT cards. That's our projective cards. That made sense for the kids we were working with. And our population was a group of kids who were going to Inner City School,

close to our hospital, kids from the housing projects, kids who were exposed to a lot of bad stuff, but who came from largely intact families. And our other kids were traumatized kids on our inpatient unit.

Speaker 2:

So when we showed this card to the kids in the school who were not traumatized and not symptomatic, they saw this card and immediately picked up how dangerous it was. And he would say, "Boy, you better be careful, terrible things may happen." But these kids all saw this picture, and at the end, came up with the story of the car is going to get fixed and dad and the kids are going to drive off the McDonald's. And so our natural inclination is to give things a good twist. You notice when you're burnt out, when you become cynical about the work you do, and you can no longer give a nice twist to all the hard things that you do and when no longer able to imagine a good outcome. If you cannot imagine good outcome, you might be more realistic than what we do because the work that we do is extraordinarily difficult, and oftentimes it does not lead to good things, but because we are by nature optimistic, we keep seeing that silver lining around that cloud has all these normal kids did.

Speaker 2:

Then we show this to our severely traumatized kids, kids who had seen their parents being murdered, kids who have been raped, assaulted, et cetera, et cetera. And here we had a very interesting and different response from what we expected. The younger kids, they will tell a story. The younger kids, the kids on the age or so who saw this picture, started to act and started to tear dolls apart and throw things around. So their bodies became agitated and they started to, this figures sort of a memory of danger, and they started to behave if they were in danger. And the older kids who had a little bit more mental development saw this card and said, "Oh, this boy is smiling because he's about to drop the car on his dad and just [inaudible 01:05:18] blood all over. The girl is smiling because she's going to bash her brother's head in." And so the traumatized kids only saw murder and mayhem. That is the perception of the brains and minds of traumatized kids, is that the only possible outcome is murder and mayhem.

Speaker 2:

And so here we are faced with a very great challenge is how do we change their map of the world that lives inside of them? To my mind, it's only by having them actively involved in experiences that regularly contradict the horror and helplessness that they grew up with.

Speaker 2:

Here's another card. It's a card from a book called "The [Femineity 01:06:04] of Men" that came out when UNICEF was founded. My parents had this on their coffee table when I was growing up. And I come from such a sexually repressed environment that as a kid, I never noticed that this woman was pregnant. That was not a problem for the kids in Boston, they all immediately saw those kids as pregnant. And again, the difference between the traumatized and non-traumatized kids is a very dramatic. The non-traumatized kids said, "Oh, her man has gone off to war or her man has gone to prison. Or her man is working and out of town," and they told fairly sad stories, but at the end, it all turned out okay, because we are by nature, optimistic creatures. The sexually abused girls told a story that really startled me. And there was very much at variance with what my good friends and at the time very close collaborator was teaching me and everybody else around her about sexual abuse.

Speaker 2:

I made friends with Judy Herman, and Judy Herman talks about sexual abuse as a world of perpetrators and victims. That is not a picture that we got from this card, the sexually abused girls in response to this card that was given to them by Nina who was a 65-year-old, extremely distinguished and very intimidating looking person, in the fault of whom I, who have been known to have a farmhouse would never utter a four-letter words. These kids would ask Nina, how many guys she had humped, what her favorite positions were, and they were clearly getting very sexually aroused by this particular picture. Now, if you get sexually aroused by this picture, you're in trouble. That means that there are stimuli everywhere that make you sort of lose some sense of focus and control. So what we learned for these tests is that traumatized kids' internal world is just filled with trauma. And then the question is, how do we open it up? And that's really in the context of which we started the trauma center. This was maybe our first study ever to see how we could change these internal worlds.

Speaker 2:

And shortly after that, we got our first, here's a good first example of how you change that. And what happened is there was a boy who was 13 years old who had been referred to the children's hospital in Boston at age eight. And he had continuously broken bones and bruises, and so the pediatricians realized that he was being physically abused and he was moved from, into a foster home. And the foster parents were very nice parents and they thought, "Oh, here's this terribly bruised and abused kid. And so if this boy comes to live with us, he'll sooner or later, adapt, adopt our safety and our values, and he will become just as nice as we are." What they didn't realize, is that this boy had his own perception of the world.

Speaker 2:

And what he had learned is that the toughest guy always wins, and sooner or later when the chips are down, only if you're strong and independent and the strongest person in the room, can you win, because people are out there and they go to mess you over no matter what. And so the internal structure of this kid was running the show and he was brutalizing all the other kids in the nursing in the foster home. And before long, he was moved from one foster home to the next and next and the next and the next, because he was a very violent, aggressive kid. And so finally the DSF doesn't know what to do with him. He's not bad enough to be sent to a-

PART 2 OF 4 ENDS [01:10:04]

Bessel van der Kolk:

[Jeff 01:10:00] doesn't know what to do with him. He's not bad enough to be sent to a juvenile detention place. And so they're thinking about sending him back to his dad and before doing that, they send it to us for an evaluation. He gets seen by one of our clinicians Maureen Monaghan, who I always suspected had been a juvenile delinquent herself when she was young, because she was so terrific with these kids. And so she comes to see Maureen and Maureen has a big chart from this kid with all kinds of terrible things. And most people would at that point start finger wagging and say, 'if you keep doing what you're doing, terrible things could happen to you.' But Maureen knows intuitively what we have learned since that time from our brain scans, is that the brain scans of these kids have no finger wagging receptors. Had the part of the brain... I'll talk about after we break, part of the brain that has to do with taking in information and stopping yourself doesn't get developed very well. [inaudible 00:01:09] gets it all.

Bessel van der Kolk:

So telling them that they'll get a death penalty if they do this or terrible things will happen to them, does it make any difference. We are wasting vast millions of dollars on finger-wagging programs that are contradictory to what we know how the brain of these kids works. Maureen, and this is actually before we knew that, is much smarter than those people, as she says back, 'yeah, I get the picture. You're a very smart kid. It's very clear that you know that unless you are the strongest meanest kid around, you're going to get hurt. And so you know that wherever you go, you need to be in charge of things. He did make sure that everybody's scared of you. And I get it because the world is a dangerous place and it makes perfect sense.' And the kid says, 'wow, nobody's ever said that to me before.'

Bessel van der Kolk:

And she's beginning to like her. And so Maureen says, 'let's make a picture of you as the toughest kid around.' And there he is. He does have arms. She can see, 'Gerrr!' No guts, no glory. Toughest kid around. And Maureen says, 'so are you as tough as Sylvester Stallone?' And the kid says, 'aah, he's a pussy.' 'How about Arnold Schwarzenegger, just before he became governor of California?' Said, 'well, Arnold see he's sort of, a lot bigger than I am.' But [inaudible 01:12:39] Arnold says, 'I'll be able to lick him also.' And Marie says, 'good, but I hear this one guy who's even tougher than you are.' And the kid says, 'no way.' And Maureen says, 'how about your dad?' She said, 'yeah, my dad is meanest kid around.' Let's take a picture of your dad. That's the dad.

Bessel van der Kolk:

So now we're beginning to get a meaningful diagnosis, as opposed to a DSM diagnosis. This was living inside of his head as the thing that's always there to threaten him. And now we know what this kid is dealing with. And it gets worse as. And so Maureen says, 'we have an issue. And the issue is that, I really admire you for having me as strong and powerful as you are, but you're only 13 years old and you still need to live somewhere. And we can't find a place for you to live, and nobody wants to have you.' He said, 'no problem. I'll be living in the streets.' She says, 'no, we can't let it happen. And so people are talking about sending you back to your dad.' And the kid says, 'I'll kill myself or runaway. I'll never go back to live with my dad.' And so she says, 'let's draw a picture of what would happen to you if you went back to your dad.' And that's him. And Maureen says, 'I get it.'

Bessel van der Kolk:

So now the question is, how can you make yourself feel safe so that he cannot get to you? And now she starts to work... Up to now, we've done the diagnosis. Now we start doing the therapy. The therapy is using your imagination to create new realities inside of your mind. So she says, 'so what can we do to help you to make yourself feel safe?' He says, 'well, maybe if I put myself in a diver suit, drop myself 500 feet below the ocean, I'll be okay.' And Maureen says, 'that's very good. And you know eyes over here. I like it. We can always steal an air hose. So we have to be careful. Is there anything else you can do?' And the kid goes wildest imaginations because, 'maybe if I hide myself in the light bulb, nobody can see me. Or maybe if I hide myself back in my [inaudible 01:15:09] tummy I'll be okay.' And so that's the beginning of treatment. The activation of imagination to find new possibilities in your life.

Bessel van der Kolk:

Did he show you... I think I'm going to show you a bunch of video tapes at the end, but if first one to cram in some of the information. I was a medical student at Billings Hospital in Chicago. He had many years ago. And as part of the experience, I delivered about 30 babies to 14 and 15 year old kids. I was 23 years old, if I had a startling experience for a young boy. But also struck me is that the girls didn't have

any visitors or hardly any visitors. So being yet the even innocent, I asked these girls, 'so how are you 14 or 15 year olds going to raise this kid?' And their response freaks me out. They said, 'don't worry about it, doc. We're going to be okay. I've always wanted to have a baby and we'll go home and take care of each other.' And even as a 23 year old boy, I realized that there's something very vulnerable about that statement, because I always suspected that kids don't take care of their mothers and indeed that's not what happened. And so does this set up for disaster.

Bessel van der Kolk:

And so it was an observation like that, that got my colleague Karlen Lyons-Ruth to do a study at Cambridge Hospital. She followed about 125 young single mothers who raise their kids. Went into their home two years later and look for the kids looks like. And she found out that 86% of these kids had major behavioral problems, largely of the aggressive variety. When you're a two year old pain in the ass kid in our society, your chances to ever get off that curve are not very good. And so Karlen, who was a brilliant person, I greatly admire things about her a lot. And she looks at the literature and realizes that the single most effective mental health intervention ever discovered is something that was discovered by David Olds, which is home visitations for new mothers. If I were commissioner of mental health, which I will never be, I will not license any clinic unless they have a program to intervene with early mothers and their kids and help them to monitor their kids, because kids brains are very malleable.

Bessel van der Kolk:

And the payoff for very early intervention is vastly greater than at age seven and vastly greater than as time goes on, because your brain becomes less and less malleable. So Karlen starts a home visiting program. And after six to nine months, the problems with these kids have markedly diminished. So helping these mothers to monitor their kids, has a tremendous positive effect. Then something happens, that's happened to almost anybody who has done this work, to Karlen, to me, to Frank Putnam, who I'll talk about next, you do a very good project with very good results and suddenly your funding is cut. It's happens with enough regularity that is not a statistically accidental issue, but we won't go there. And so Karlen's funding is cut. And so she has hardly any money left, but she uses what little money is left to continue with a third of the old sample for another a year. And for another year, that figures go down to be almost the same as the control group. So, that's an extraordinary effective intervention.

Bessel van der Kolk:

Then Karlen takes videotapes, which I cannot show you, but I'll tell you what they show. She takes videotapes of these young moms coming into the room, by then two year olds are playing. And the kids are playing in the floor. Mom comes in, mom comes over, picks up the kid, very eager to show what a wonderful mother she is. And if you look very carefully, but you have to look at it the way that we looked at a tape of this mom and the ball, quite carefully. What you see is that the infant moves back just a little bit as if to say, 'Hey mom, I was playing, and this is for you and not for me.' But you need to really pay attention to see that. Nothing alarming. Six months later, same interaction. Mom comes to the room, pick up the kid and the kids are moved back. I said, 'ah, this is bad.'

Bessel van der Kolk:

The other six months later, mom comes into the room, baby sees the mom, starts smiling, start crawling, starts crying. Mom picks up the baby and the baby turns away from the kid. Very powerful movies. And these were the movies that made me understand something I didn't know before. Namely, I've always been puzzled by how do people get to abuse their children? Because whether you're Catholic or they're

Indian or Hindu or Muslim, the goal of life is to raise healthy children. That's really the most important thing you can do. So abusing your children is unnatural. It's against the law of God and man. So how do people get to do that? I mean, you see these videotapes, you see, 'Oh, this is how it happens.' You're supposed to love your kids and your kid is supposed to reciprocate. And then you're supposed to really have that love being fed.

Bessel van der Kolk:

But if your kid comes to perceive you as a dangerous person, you start to see that the kid is a bad person. And then all rules start disappearing. As another video tape that my friends, Beatrice Beebe, another attachment researcher, showed me is a tape of a mom playing with a two months old baby boy and having fun. And at some point, the baby moves back as if to say, 'Hey mom, I'm tired. I need a little break.' Just like when I look at all of you guys, you guys look tremendously attentive, but a few people look away to look at their cell phone and look at a piece of paper, because we cannot expect that anybody pays attention to you 100% of the time, all the time. And we need little breaks. And so you see this kid taking a break and mom doesn't theorise that the kid needs a break.

Bessel van der Kolk:

And she seems to interpret it as my kid is upset and I need to do more for this kid. So you see the mom move in, they see the kid go, and mom doesn't get it. And she becomes intrusive. I mean, I see that, I go like, 'ah, this is terrible,' because if you don't pick up these signals of rhythmicity and movements, then before too long, your mom becomes a harbinger of intrusion and danger and that bond gets broken. And so in order for trauma to occur in the family, the bonds gets broken first. And that's the whole issue of attachments that in our field has barely begun to be paid attention to, but as time goes on, it becomes very clear that the security and the rhythmicity of the attachment system is a much more profound issue that we're dealing with that is specific traumatic incidents.

Bessel van der Kolk:

And so Karlen does her studies and what she finds is that these kids learn not to respond to their parents and get overwhelmed, and what happens next is that her study life follow for about 14 or 15 years. And the next thing that happens is that priest abuse scandal in Boston breaks out. Turns out, a lot of priests in the archdiocese of Boston have been abusing kids and it has a big ripple through all kinds of systems. All of our clinic gets closed down and all the facility for those people who talk about it, but part of what happens on the movie spotlight, you may have seen. I mean, when I saw the [inaudible 01:24:02], I was like, 'yep, that's exactly what happened there.' I knew all the lawyers, I knew all of that. And so because of this priests abuse scandal, the issue of child abuse, again, becomes a legitimate thing to study.

Bessel van der Kolk:

Karlen applies for a grant. And now she looks at which ones of the kids that she saw at age two, have ended up in the juvenile justice, mental health or social services department, and more than half of them have. But she turns out, is that the great predictor, the greatest predictor of whether these kids have dissociative borderline instability, what I would call development internal problems, is predicted by what she observes in her videotapes from 15 years ago. And when she sees that is a V-series effect, as of miscommunication, role confusion with parents, but the kids to take care of them instead of the around. Parents who withdraw, parents who have inappropriate responses back at age two, to a very significant

degree, predicts how these kids look at age 16. So again, it's early intervention and it's early attunement thing, becomes important.

Bessel van der Kolk:

Most importantly to our field is, when Karlen also gets all the trauma history of all of her people and what she finds out, that the great predictor of that what she goes borderline symptoms, aggressive clingy, self self-injurious behavior, is absence of maternal care and not a trauma. So actually, I had done the early experiment that linked borderline personality disorder with early trauma, but because her methodology was so much better than ours, she relieves and said, 'no. It's not trauma that causes it, it's disruptive communication.' And so the whole issue Barry started off with today in these two videotapes of getting accurate communication between parents and children, is the critical issue for our society and for our work. And so collecting trauma stories is of some interest, but of maybe even more important is, who do you feel safe with growing up? Who saw you as a special person? Who was in tuned with you? Who could you go to? Who respond to you? And all these things that I write about in my book, we don't have much time to talk about it.

Bessel van der Kolk:

Another study that's of great interest to me is the study that was started by my friend, Frank Butner, about 25 years ago. We used to go to the American Psychiatric Association and talk to people about childhood sexual abuse as a precursor for dissociative problems. And our colleagues, psychiatrists, would say, 'oh, you guys are obsessed with childhood trauma. You serve some sort of pervert. Don't you understand that this are genetic? That if you have divide genes and you get raped when you're four years old, you'll just be fine. But this is all genetic issues has nothing to do with the environment.' And we go to these meetings and believed them enraged. And we said to ourselves, 'who are these monsters who can completely discount the reality of child abuse in our patients' lives?'

Bessel van der Kolk:

And that eventually, for me, gives rise to how to national child traumatic stress network gets bored, because rage is sometimes a beautiful emotion. It's this pure one own for to great deeds. And for Franklin has [inaudible 01:27:48] is to start a very sophisticated longitudinal study of sexually abused girls in the district of Columbia. Extremely well done. He's a very careful scientist at that time at the National Institute of Mental Health, and he measures hundreds of sexually abused girls. Matches them by race, family income, family constellation, et cetera, with not a girl [inaudible 01:28:18] not been sexually abused. Measures every possible variable in their hormonal system, in their learning system, in their movement system, in everything they can and what he finds, and then he does it again, four years later, eight years later, 12 years later, 16 years later. Right now they're at a 24 year followup and they have data on three generations, extremely complex data. The best longitudinal study of sexually abuse people.

Bessel van der Kolk:

And I'm just going to show you one little slide that sounds firstly, very uninteresting. And as we get closer to it, it gets more and more interesting. It is at time three. These girls now are between 15 and 18 years old. And they're looking at peer relationships with members of the opposite sex. And what you see is that, the abused girls before the onset of puberty have no contact with boys on average and during their adolescence have lots and lots of contact with boys. The non-abused girls have one boy. My daughter had one boy who served as a spy in the opposite camp. Who would tell her what this weird

creature, boys are. I imagined they'd made him play some doctor games or something like that. Like who are these strange creatures and many normal girls find some boy to play with and talk with about who they are.

Bessel van der Kolk:

And then they go into their adolescence and they slowly increase their contact with boys. Boring, until you look at what's behind us. You look at normal girl's developments, which is really very interesting. As most people, this you know because you have been girls yourselves and you have girls at home, the girls between the ages of seven and 11 are not very nice people to each other. They tend to be competitive, nasty, finds people to exclude. It's always fun to see people nod. I presented these data in Cape town and people go, yep. I presented in Beijing, people got, yep. That seems to be in every culture that girls are mean, form little cliques. They betray each other, and it's a hard life. Actually it's hard enough for girls. Nobody talks about it. And when you think about it, I almost become a non-Darwinian, because whoever invented that system was just brilliant.

Bessel van der Kolk:

Because, what happens to girls at that age, is that they are safely at home and their parents adore them. In the meantime they're experimenting with all the meanness that happens in the real world. And they learn to trust people only to a certain extent. They learn how to form friendships. They learn to talk about their feelings. They tend to stand up for themselves. They learn to text and call people up and say, 'look what you did to me.' They form alliances and they learn all the stuff that you need to do in order to become a healthy adolescent girl and negotiating sex is tough enough as it is. But if you have no skills in standing up for yourself, knowing that people go to mess you up and you can't believe everything they tell you may not be true, you're going to have a very tough adolescence. So it's a learning ground to learn resiliency. It's beautiful. Whoever invented that, is just brilliant.

Bessel van der Kolk:

The sexually abused girls have a very different development trajectory. They don't only have no boys to hang around with, they also have no girls to hang around with, because they're oftentimes too weird, too explosive, too shoved down, too dissociative, too out of touch and out of tune with their peers. So kids leaves them alone. Our kids shun them. And at one point I see an editorial in the Journal Dissociation by [Rick Loft 00:22:25], a guy who knows a lot about dissociation. And he writes, I remember these girls from my primary school. And I read that essay. Oh, we had a girl in my class too. We had a very small class and there was one girl who nobody played with who was always crying and weird. And she didn't get invited to people's homes because she was just too bizarre. And in that perspective of course she fits in so well with what happens there.

Bessel van der Kolk:

And so, abused girls miss this whole developmental things about friendships and who you can trust and forming alliances and forming cliques and being special and doing all of this stuff, as standing up for yourself that other girls do. And then the next insult comes, and that because Frank is such a terrific researcher, he measures so many things. And one of the things he measures is sex hormones. The hormones that make you want to do it. And what he discovered is that sexually abused girls mature on average a year and a half earlier than the non-sexually abuse girls. Not only that, but they secrete between three and five times as many sex hormones than the other girls. And thank goodness, I was not secreting three to five times as many sexual hormones at age 14 than I was, because I would never have

been able to learn anything, because I was only using 2% of my brain to study math and physics and chemistry, because the rest of my brain was thinking about sex as a 14 year old.

Bessel van der Kolk:

So what happens here is that these girls have no skills, no frontal lobe, no cause to engage as a rule, but always true, but sort of on average. And then they get overwhelmed by all this sex hormones. And then they have all this contact with boys. It's not deliberate. It's not thoughtful. It's not like, 'yes, I like this. I don't like that.' It all happens. And all of us who have worked for sexually abused adolescents, know that their lives is just filled with stuff that happens. There's no internal locus to control, know something. And then they come to our attention at some points and we say, 'oh, they are borderline.' Or we call them bipolar. Or we call them all these other completely meaningless non-scientific diagnoses that we have at DSM. And maybe they meet a nice person who knows about trauma. I say, 'oh, I know what's going on with her. She was sexually abused.'

Bessel van der Kolk:

It's much more complicated than that, because the majority of people get sexually abused, had problems with their attachment system in the first place because their mothers were too traumatized or too something or another, to make sure that her kids were okay. So the boundaries were in there, and we see this in our clinic all the time when we do sexual abuse evaluations, is that the mothers of these kids oftentimes are not very attentive to taking care of their kids. So that's where it starts really no security in the attachment relationship, nobody to make sure that you're going to be okay and nobody messes with you. And then sexual abuse occurs. And it took me years to really, sort of, get the grasp about sexual abuse. Because I grew up of course, with Judy Herman and my feminist friends who all said, 'men are pigs and women are poor victims.' And we live in a world of victims and perpetrators.

Bessel van der Kolk:

And then our research didn't quite fit with that and our data didn't quite fit with it. And so you have to listen to what your patients tell you. And what is also very helpful for me, that's where it comes into be inserted in the history of our field, I read a lot of dead white men. For those of you who know me well, I love to quote people from 1880 and 1870, and I'll have to talk about Charles Darwin, because there were a lot of smart people who are no longer around. And so one of these smart people who is no longer around was called Sándor Ferenczi, who bought a paper in 1929 called The Confusion of Tongues, but in the adult and the child, the language of intimacy and the language of passion. And what he says that kids are little love machines. And all of us who have had kids, know that kids are little love machines.

Bessel van der Kolk:

Little kids will make you love them. And they'll draw your picture for your birthday and they'll give you gifts for thanksgiving and say, 'daddy I love you. You're the most wonderful dad in the world.' And I say, 'actually, I'm at best average.' My kid says, 'no, you're wonderful.' And so your kids will make you love them. And that's their job. Because, as long as they love us, we'll love them back and we'll protect them and take care of them and pay for tuition at University of Chicago and knock ourselves up at Brutus house at Hartford. And that is the way that the world is supposed to be. But adults, he says, are sort of, sex people. Their greatest pleasure is to get sexual gratification. And as long as adults try to find sexual gratification with other adults, that's okay. But when these two worlds collide and adults seek sexual

gratification with their kids, all hell breaks loose, because the kid wants to love and the parent wants to have sex.

Bessel van der Kolk:

And then the kid who just wants to love gets messed up. And the kid goes like, 'am I special? Does this mean that I'm the most wonderful person in the world? Does this mean I'm exceptionally powerful? Or does it mean that I'm a terrible person and that I'm damaged? That I'm not good. I don't know. But I've all these feelings in my body. As people are messing with me, I don't go what that means.' And so the great thing about sexual abuse, unlike physical abuse or emotional abuse is so damn confusing. And it's so filled with shame about who you are and what this means. And an important thing that actually was misused by psychoanalysis a little, but that's very real also, there's certain things that give other people pain, start giving you pleasure, and certain things that give other people pleasure, starts causing pain inside of you.

Bessel van der Kolk:

So you start having a very confused relationship to what happens in your body, but turns you off and but turns on, that's different from the people about you. And that becomes a deep, shameful thing deep inside of you. So that's the next thing that happens by age four or five or six. Then you lose what, to my mind is, maybe the most important developmental step, was very important for me, is to go out and play with other kids and have friends and to go out of friend's house. And to see that other people have insane parents just like you, but they're different in an insane way. And you get to see that all families are different and that people do things differently and you can be close to your friends. I say to your friends, 'my parents are sort of crazy.' Say, 'my parents are sort of crazy too.' 'I don't think your parents are crazy as all your.... But I don't think your parents are crazy. I think...' That's where you have all these great things with your friends and you form your alliances.

Bessel van der Kolk:

And I think in many ways we grossly overestimate the power of parents because after age eight, your friends are the most important people in the world. Of course, parents don't want to know them because they have pay the tuition during that time. I want to think that they're still the most important people. But your friends are terribly important, which is something that you lose if you are a frozen, frightened, upset, angry, and raging out of control prepubescent kid. And then you have this adolescence that is filled with stuff that happens. And so our models of, Hey, let's just resolve that sexual trauma, is grossly inadequate and only kept us just a tiny little piece of this incredibly deep and complex picture. And that's what we're dealing with. Okay. So I want to show you... Okay. So this is an important part. People talk about trauma as an event that happened back there in the past. But what's really important to know is that event that happened a long time ago is over.

Bessel van der Kolk:

What happened back then is fundamentally no longer relevant. Going over that old event, over and over again, is not really the biggest issue in trauma treatment. The biggest issue in trauma treatment is that event that happened back then has left traces in yourself experience. Has traces in your sensory system has left changes in the way that you deal with other people. All trauma is being replayed right now. If I had a week with you guys I'd show a whole bunch of treatment tapes to you. It shows that trauma treatment happens in the present. It happens right now. It is about being in the presence and the illness

of being a traumatized person, if she cannot be fully alive in the present, and that's very... Actually where I'm going to ends my presentation, which is running very fast and I've hardly taught you anything.

Bessel van der Kolk:

So next thing is that... Maybe you guys heard about trauma relatively recently and that's not true for me. And because I read law of all stuff, it's very clear to me is that people have known about trauma and its effect for about 150 years. And when you read this old stuff, people were very smart and very observant long time ago. And then as happens with these things, they disappear in the midst of history. And so a lot of our knowledge comes and goes, and for every piece of knowledge that've be gained, there's usually another piece of knowledge that we lose. But changes people, is the technology that we have available. Because technology changes what we can see. And so when I was a medical student here at The University of Chicago, people were just discovering how to measure brain chemicals. And because measuring brain chemicals are so exciting, our whole field became a field of chemicals, and mental illness was a chemical imbalance, and we're going to fight chemicals for the imbalance.

Bessel van der Kolk:

And then that was about 30 or 40 years ago. And we have discovered that it was a sadly primitive and stupid way of looking at the brain. And we spent billions of dollars on finding drugs, and they basically have not yielded very much. But, hey, we do what we can. And then in the early '90s, we started to be able to take pictures of the brain. And because we could take a picture of the brain, we got to see a lot of stuff, that sort of allowed us to see things clinically also. Because we perceive seeing things in the brain, and you go like, 'oh, now I understand why I feel this way. Or why my patients feel this way.'

Bessel van der Kolk:

And so this technology opened some things up. However, they have always been also been surprised by, is that despite it, billions of dollars spent of brain research and all the articles that come out about it all the time, is that the core issues of brain research have not percolated down into the clinical field. And that many of the treatment methods that people apply, sort of, go like, yeah, but that's not how the brain works. That's not really how we organize information. So let me just tell you a little bit about the brain. So here's our brain and when you meet me and you say, 'hi, my name is Jennifer,' I think to myself, 'oh, the name of her prefrontal sliver is Jennifer.' That's the part of her that can tell me stories and tell me what she likes and what she doesn't like, and where she has been and where she's going. And what she stands for. It's a very important part of the brain. But it's a very tiny part of the brain. Very fragile for those of you who have demented grandparents.

PART 3 OF 4 ENDS [01:45:04]

Bessel van der Kolk:

Very fragile for those of you who have demented grandparents. But that goes. This part of the brain is out of our knowledge and out of our control. This is where the map of the world is located. It tells us what is safe and what is dangerous. That part of the world is not conscious. That part of the world automatically makes us fall in love with other people. It makes us fall in hate with other people. It makes us love broccoli and hate spinach, or vice versa. That's not something you control. It's the part of your brain that makes you fall asleep. And you probably cannot make yourself fall asleep, but I could. If I'm just boring enough, I can put you to sleep, but you cannot put yourself to sleep, et cetera, et cetera. Can

you make yourself not hungry and say, "I'm not going to be hungry for the next four days," "I'm not going to have loving feelings towards anybody for four days." All that stuff takes place over there.

Bessel van der Kolk:

That's also the part of the brain where trauma is located. Trauma goes deep into how you see the world, how you perceive the world, and how you react to the world. It's important to sort of unpack this. So we come into the world with a brainstem. Anybody who's had babies know what a brainstem can do, still what our brainstem does as adults. It allows us to go to our sleep dream cycles. It allows us to breathe. It allows us to get hungry, to eat, to suck, to pee, to poop, all the little things that little babies can do. It's a very boring part of the brain. And so when you go to social work school, psychology school, psychology school, people completely ignore that part of the brain. But when you get traumatized, that's where it is. When you get traumatized, you get abnormal breathing patterns, you get abnormal sleep dream patterns, you get abnormal eating patterns. And so, that's where a lot of trauma plays itself out.

Bessel van der Kolk:

I had no idea about how to deal with that part of the brain until I walked into a yoga studio and realized that some crazy Indians have been paying attention to that part of the brain for several thousand years, but that in Western culture there's nothing that gets us into the brainstem. And that's how we got to do yoga research. I'm not going to tell you details about it, but in our yoga research, we found that yoga is more useful for chronic PTSD than any medication that anybody has ever studied. And I did love the study. So stuff like that than dissing other people that we found was much more effective because you can learn to breathe yourself and move yourself into calming that part of your brain.

Bessel van der Kolk:

What we learned is that we have self-regulatory mechanisms in our brain. That is something that is not part of the European culture that dominates certainly me, because I'm originally European, or most of you whose parents or grandparents or great grandparents were also a European. I hope you still have some African traditions, but they're probably gone, largely gone also. And so, we live out of this poll of European culture. How do Europeans calm themselves down? They calm themselves down by gulping alcohol. They've done this since time immemorial. If you feel bad, you just take a gulp. And then you have your national drinks in every part of the world. Of course, Chicago people also like to gulp. When you feel bad, you ingest a chemical.

Bessel van der Kolk:

Of course, that's the culture. That's the medical culture also. When you feel bad, go to your doctor and they'll give you a pill to make you feel different. And it's not part of our culture. It's just actually things that you can do to calm yourself down. We have inbuilt mechanisms in our own brain having to do with rhythm, touch, movement, and breathing that can take care of the foundation of our activation system. I'll show you a little videotape at the end, and we're really running out of time, to tell you about that.

Bessel van der Kolk:

Then the second part of your brain that comes in line is our limbic system. Again, if you have had little babies, you know that your limbic system helps your babies to detect what is safe, what is dangerous, this is what I like, this is what I don't like. And I should probably have realized if you like something when you were four years old, you'll probably still like that when you're 60. These maps of the world, this

impulse of what feels good and what feels bad gets very early ingrained, they get hardwired, and are extraordinarily dangerous, difficult to change.

Bessel van der Kolk:

If you are a kid who is being adored by people around you and you light up the room whenever you walk into it, and your great grandparents said, "Isn't she cute? Oh my god, she's the cutest girl I've ever seen. Wow." I had no girl says, "Oh, actually I'm quite ordinary. You know, just about three. Hey, grandma, you're sort of overdoing. There's three billion kids in the world and probably somewhere in the middle of a bell shaped curve." No. Kids think and experience as it is. And so if a kid is adored, the feeling of I am adorable lives inside of you. You grow up and people reject you, and you don't get to school you wanted to go into, and somebody assaults you and deep down inside of you, you keep that notion of 'I'm fundamentally an adorable person.' If people ignore you, abuse you, yell at you, emotionally abuse you ...

Bessel van der Kolk:

A recent research by from Joseph Spinazzola over and over again shows that emotional abuse is probably the most damaging abuse that there is. If people tell you, "You're a terrible person. You're disgusting. You have ruined this family. You're no good," that becomes your map of the world. Extraordinarily difficult to change. You carried it inside of you. Telling people it wasn't your fault, you were just a little person makes absolutely no difference at all because this stuff gets hardwired. I hope to show you at least one video tape by which you can change that particular part of the brain, your scheme of who you are in relationship to the world.

Bessel van der Kolk:

And then, finally, you have your prefrontal cortex. That is the large part of the brain that allows you to predict the future, to know what the consequences of your actions are, to tell yourself, "No, I'm not got to do this right now because of bad consequences," which is also quite effected by trauma. So let me just show you one thing. Oh, wait a second. We have learned a lot about how trauma affects the developing brain. I don't have time to just tell you all about it today. You may actually want to know, but in my book I talk fairly extensively about it. But even since I have written my book, which was only two years ago, a lot of new stuff has been found.

Bessel van der Kolk:

Where does trauma hit developing brain? It develops in the developing brain in the orbital prefrontal cortex. The part of your brain that tells you, "I would like to bite my mother's nipple, but if I do, I won't get milk." It's an inhibitory part of your brain that tells you, "I would like to do this, but it will have bad consequences." It's a part of your brain that helps you not to become impulsive. "I'd love to grab that piece of food off the table, but hey, it's rude, I won't do it." And you stop yourself. Chronic trauma damage that part of the brain. So when you're traumatized, that makes you more impulsive, particularly trauma around age four, five.

Bessel van der Kolk:

Next part of the brain, ventral prefrontal cortex. It's part of the brain that allows you to observe yourself. It's the center of mindfulness. It's the center of knowing what's going on inside of you. It's a center of your brain that helps you, "This is what's important to me. This is what I value. This is what

makes me feel good. This is what I stand for." 'You may stand for something else, but this is what's important to me' gets damaged.

Bessel van der Kolk:

The dorsal lateral prefrontal cortex allows you to combine the past with the future. Maybe some of you have heard me talk about something this morning and say, "That's interesting. I will apply this to my work in some way." Anybody has thought about it today? How many people? So about half the people in this room have an active dorsal lateral prefrontal cortex. That's the part of your brain that hears something, combines it with something that you knew already. It says, "Oh, I will try this in the future." If you don't have that part of your brain, you cannot try it in the future because you don't make the past, present, future combination. That's what people are dealing with. I'm telling you, this is harder than neurosurgery. This is incredibly hard work.

Bessel van der Kolk:

Precuneus, it's a part of your brain that worries about yourself. That is worried about what people think about you. "I'm going to get hurt," "I'm going to get upset." As you may have noticed, I'm standing here relatively calm. I'm not really preoccupied whether you guys like me or not, that will work out somehow. But when you're a traumatized person, you're always worried what's going to happen. "Am I going to be okay?" And that part of the brain wants to show at the expense of anything else.

Bessel van der Kolk:

Amygdala, it just goes on. So many things go wrong. Amygdala is the smoke detector of your brain that tells you what is dangerous and what is safe. If you hear something, if you're not traumatized, you'd go like, "Oh, let's find out what's going on." If you're traumatized, you hear the same thing, you'd go, "Oh my god, I'm going to die," because the smoke detector keeps going off. The anterior cingulate, terribly important, very relevant to what we do. It's the part of the brain that filters out irrelevant information. Without the anterior cingulate, anything can come in and throw you off course because that filtering system that helps you to determine 'I'll pay attention to this and not pay attention that' is oftentimes broken. So you pay attention to all kinds of irrelevant stuff.

Bessel van der Kolk:

So that's what we're up against. And because we have so little time, I'm just going to show you some video tapes to give you some idea about what we can do. The first video tape is of a program, it's one of my favorite programs, where they have said before here, and I hope some of you take this seriously, I think in order to change that brain that is so set to perceive things a certain way, you need to have experiences that directly contradicted on a very deep visceral level. The tape I'm going to show you first is a tape of a program called Impact Model Mugging. Like so many programs I know, it was not invented by psychologists or psychiatrists, social workers because we are too stuck in our ways. This happens to be invented by a bunch of karate teachers.

Bessel van der Kolk:

The background of it is that, about 30 years ago, a fifth degree black belt karate instructor in Oakland, California was raped. Her friends got together afterwards and said, "How is it possible that a woman who can basically kill anybody with her bare hands can get raped?" They thought about it and they said, "You know, we've all gone through this. Sometimes you're very good at something and you get these skills, you're nervous, suddenly you become like a blubbering idiot. We've all been there." And so

something may have happened to her. We don't know whether she was raped before or abused as a kid, but there was something about a situation that made her freeze and lose her skills.

Bessel van der Kolk:

And so, in honor of that experience, her colleagues said, "We'll start a program." It's initially called Model Mugging. They started a program because so many women automatically freeze and collapsed in the face of threat. And so, in order to teach people how to really stand up for themselves, we need to help them to feel the power in our bodies. And they're going to start a mindfulness program before anybody else is into mindfulness and teach women how to be alert and to stay focused. Again, all of us notice that once you get scared, you start losing your focus and lose your attention. And part of what we learned to do, for example, as clinicians also is how to slowly learn to be still and to keep observing, even though somebody is threatening us.

Bessel van der Kolk:

And so when somebody starts swearing at you and threatening you, hopefully, you can stay calm, say, "Hmm, that person is very angry, very upsetting. And I am not." And so, you don't borrow their mirror neuron system. Usually, when people start screaming at you, you'll scream back, they have power over you. But the thing is to just become still enough when people scream at you. "Boy, that's a very angry person. What can I do?" Or if somebody says, "I adore you," you may also have some things going like, "Oh, that person seems to have an interesting notion about me," that's probably not based on reality. So it keeps your cool and not to get hijacked by other people's emotions.

Bessel van der Kolk:

And then they teach them skills, self-defense skills and make that part of the procedural memory system. When I say, habitual memory systems, they do it all the time, all the time, and then they practice it. So this is the graduation tape of one of my patients who had the long-term history of childhood sexual molestation and other very bad stuff.

Video clip:

[Crosstalk 01:59:34] All right, get ready.

Video clip:

Who the fuck you think you are, huh? Nobody comes around here. Nobody. You're going down.

Video clip:

Go get him. Go get him. [Crosstalk 02:00:10]

Bessel van der Kolk:

This is limbic system therapy. Her habitual response of her brain would be when somebody's threatening her, to collapse, to freeze, to feel helpless, et cetera, et cetera. Now she has rewired alarm system and interpretive system. So now when a guy starts threatening her, she has a memory, a very vivid and joyful memory of, "Oh, the last time somebody did this to me, I kicked him in the groin and he was lying on the floor. I'm actually a very powerful person." In the case of this particular tape, and this is a true story, the student, a woman was a student at Harvard, was very, very traumatized and had very

disturbed eating problems, all kinds of problems. And we really, I really helped her, my colleagues helped her a lot.

Bessel van der Kolk:

And then she called me up three months after this particular program ended and said, "Can I stop by for a second?" and she said, "I want to tell you a story of a person." She said, "You know, a few nights ago, I was sitting at the Harvard library studying and the lights went off, so it's time to go home. I put my books under my arm. I started walking down Oxford and Cambridge, and about three blocks down, three guys jumped from behind the bushes with knives and say, 'Bitch, give me your money.' You know what I did? I was like, 'Okay, guys, I've been trained for this. Which one would like to take me on?' and they away." I don't need any statistical analysis that this program really worked for her. I'm always encouraging people to do their postdoctoral work on this. But this works. So learning to do things and feeding your bolts, "I'm powerful. I can do it. I can kick. I stand up for myself," is very important.

Bessel van der Kolk:

I'm going to show you two more tapes. I'm going to go a little bit overtime, but not much. So this tape was made by my stepson, actually.

Video clip:

My daughter, she's six years old and I wonder what's going on in that little mind of hers. Trying to get Elisa to focus is one of her big challenges-

Bessel van der Kolk:

This is a program that we can all do.

Video clip:

She has tantrums. She gets frustrated and everything around her becomes a target. When we have nights like this, I have no idea what to do. I'm feeling incompetent. I'm feeling like I can't do this, I'm not a good parent. I reached out to Ms. Love because this is the teacher that she sees three to five times a week, who's teaching her how to learn about what's going on in her body, learning emotions, yoga practices.

Video clip:

How many more shiny stars does the Ruby Bridges class need? When Ciarita reached out to me about Elisa's struggles with attention, we made a plan for ways Elisa could use the focusing techniques we do in the yoga room to build attention skills.

Video clip:

Please put your hand mindfully on your anchor spot, your heart or belly. Breathing in. Breathing out. Nice, Taylor. One minute of mindful breathing all by yourself. With your hand on your anchor spot, your heart or your belly. Which one do you use, your heart or your belly? Your heart. Okay. So you're going to really feel your breath here when you notice, when you're saying your anchor words in your mind. Can you say them with me? Okay. Close your eyes. Breathing in. Breathing out.

Video clip:

In yoga and mindfulness, our job is to be really curious about what's happening inside of ourselves. I want you to write 'I wonder' and write about one of your feelings on the inside. So I'm going to bring Nailah to help and give you an example. Okay. Nailah is wondering.

Video clip:

I'm wondering why I get so disappointed at my brother.

Video clip:

Yeah. I wonder why I get so disappointed at my brother. Today, we're going to practice saying, "I am so focused" in a calm and sweet voice.

Video clip:

I am so focused. I am so focused. I am so focused.

Video clip:

And now, whisper.

Video clip:

I am so focused. I am so focused. I am so focused.

Video clip:

The next thing we're going to do is layers of sound. Open your ears really big and see if you can notice any sounds you hear outside of the school. Our job is to be curious today about what we notice. Now, bring your attention to sounds inside of our school, but outside of the yoga room. I'll open the door, just listen in, and see if you can really listen to any sounds that you might be hearing inside of you. Put one hand on your heart and one hand on your belly. Come up to sitting. I'm so curious about your noticing. We're working on being curious about things we hear outside of ourselves and inside. The next thing we're going to do is use the glitter bottles or our mind jars.

Video clip:

My jar is our cookie.

Bessel van der Kolk:

Okay. I want to show you one more thing. As you can see, it didn't quite come to the end of the presentation. This actually happens to be focus of my current research and it's about abnormal brain patterns. Because of the technology that we have available, we can see many of the things that drive things in the brain. I won't go into detail here, but what you see here is that in traumatized brains, there's very abnormal ways of integrating new information. And these particular patterns that you'll see here explain why it is very difficult for traumatized people to learn from experience. That is something that we all see and that anybody else would wake up, said, like, "I will not do that again because it gets me to nothing but trouble," but there is something interfering with people's learning, which has something to do with this pattern, which I won't go into details.

Bessel van der Kolk:

And so the big question for me was that, can we retrain the brain to form different patterns of engagement? And I was very skeptical about it until I met this person, her name is Sebern Fischer, who showed me this series of kids' drawings that might also appeal to some of you. So here's a family drawing by an eight-year-old kid. I bet that many of you do family drawings and you can also immediately see that this is really a lousy family drawing. You wished that this kid were more articulate in representing things outside of herself. And then she does something and people explain this to me and said, "You know, have you ever heard of neurofeedback?" And I go like, "No. What's that?" She said, "Actually, you can put electrodes on people's skull and you can harvest the electrical waves happening in the brain. You can project them on a computer. And you can play computer games so you can change your brain waves and give you brainfeedback to create different wave forms."

Bessel van der Kolk:

I go like, "Wow, that the sounds complicated. I bet you can't do that. She says, "Yes, you can. Look what you can do. A person has drawings like this, when you play these computer games, after 20 sessions, 10 weeks, that's his family drawing. And after another 20 sessions, that's his family drawing." And I go like, "Wow, that's pretty impressive. I don't know of anything that can do that." So sometimes people tell you something and you go like, "Wow, I should learn this because that might really make a difference in my patients' lives."

Bessel van der Kolk:

And I'm going to stop with a little videotape that is a original videotape that got me into this field. If I can get it to work.

Video clip:

He used to hit me and punch me and kick me and bite me.

Video clip:

Hyperactivity disorder or ADHD was out of control. Oldest sister Kara is terrified.

Video clip:

What are you like now?

Video clip:

I'm happier. I'm able to concentrate. Yeah.

Video clip:

You get along with people better?

Video clip:

Yeah. I get along with my mom well.

Video clip:

Okay. Kane, I want you to get the green rocket ship to fire up.

Video clip:

After years of violent outbursts, finally, relief in what looks to be a simple computer game. It works for depression, it works for mood disturbances. It works for panic. I've used it successfully with chronic pain, headaches.

Video clip:

It's called neurofeedback, a system where clinical psychologist, Dr. Moshe Perl says Kane's brainwaves are represented as different colored spaceships.

Video clip:

Stop the purple and the yellow rocket ships from firing up.

Video clip:

Dr. Perl says electrodes is on Kane's head since when he's relaxed and focused and, as a result, the green space ships speeds up overtaking the other space ships that show when he's tired or tense.

Video clip:

What he wants to do is get the rockets to go fast, so he teaches himself really to slow down. We got absolutely excellent results and it's been term, and he's lost, I would say, all of his violence. That, yes. I have a little boy now, you know, and it's fabulous.

Video clip:

Looking back, Kane hardly recognizes himself.

Video clip:

I can't believe I was like that.

Video clip:

Could you ever be like that again?

Video clip:

Nah.

Video clip:

Yeah, I think so.

Video clip:

I mean, even if I tried, I don't think I'd be able to do it.

Video clip:

Click the button any time you see the white squirrel [crosstalk 00:27:22].

Video clip:

Dr. Perl tests Kane's attention span. After 60 neurofeedback sessions, his scores have doubled.

Video clip:

Maybe one in 10,000 children would have scored as poorly as he did. And now he's completely average.

Bessel van der Kolk:

So we have been studying that. There's a lot to learn, very complex in many ways. But our first few studies really show very dramatic effects in trauma symptoms, most of all, executive functioning, being able to focus, pay attention, filter relevant from irrelevant information. And so we can probably be wired. To my mind, this is the future of biological psychiatry. This is the future of being able to really change some of these abnormal brain patterns that we all see.

Bessel van der Kolk:

To conclude, the world is premature to go for a fastening ourselves to evidence-based treatments and getting stuck there. Of course, in order to survive, you have to develop them, you have to learn them. But the reality is that we are just learning. We're just learning what works and what doesn't work. And the reason why we set up the National Child Traumatic Stress Network and particularly the complex family network is so we could communicate to each other about the things that we do and the things that we discover, and develop a discipline of treating traumatic stress in children. So we can learn about all the things that can work and teach each other about new things. So that's really the job.

Bessel van der Kolk:

I want to say one more thing about that little yoga tape that you saw. What we've learned, also again to help neuroscience is that the only part of her brain that can change these impulsive, disorganized, fearful, preemptive impulses that comes up is via our ... That platform of our brain, our self-observing part of the brain, and it's the issue of mindfulness. Mindfully observing yourself is a cornerstone of the beginning of learning how to become in charge of yourself. And so any technique, there is not only one. If anybody sells you, "I have the way," immediately turn the other way. But any technique that helps people to tolerate noticing themselves, focusing on themselves, experiencing the internal world is by definition helpful. Any technique that helps people to see alternative ways of doing things and to get pleasure in it is by definition helpful. Any technique that gets people in tune with other people and feel the pleasure of human company is by definition helpful.

Bessel van der Kolk:

Our neurofeedback research is beginning to show that, yes, we can change the brain. To what degree we can change the brain? We don't know yet. How we can best do that? We don't know yet. But one important thing and what we all need to do is to actually track what we do with the kids we work with and to really evaluate very carefully how well did this work? And, of course, the Trauma Center is very dedicated to all of us doing that so we can really learn from experience and see, for this group of kids, this was the best treatment; for other people, that was the best treatment. But at this point, nobody has all the answers. It's still a time of exploration, time of sharing, and a time of discovery. Thank you for joining me this morning.

PART 4 OF 4 ENDS [02:16:28]