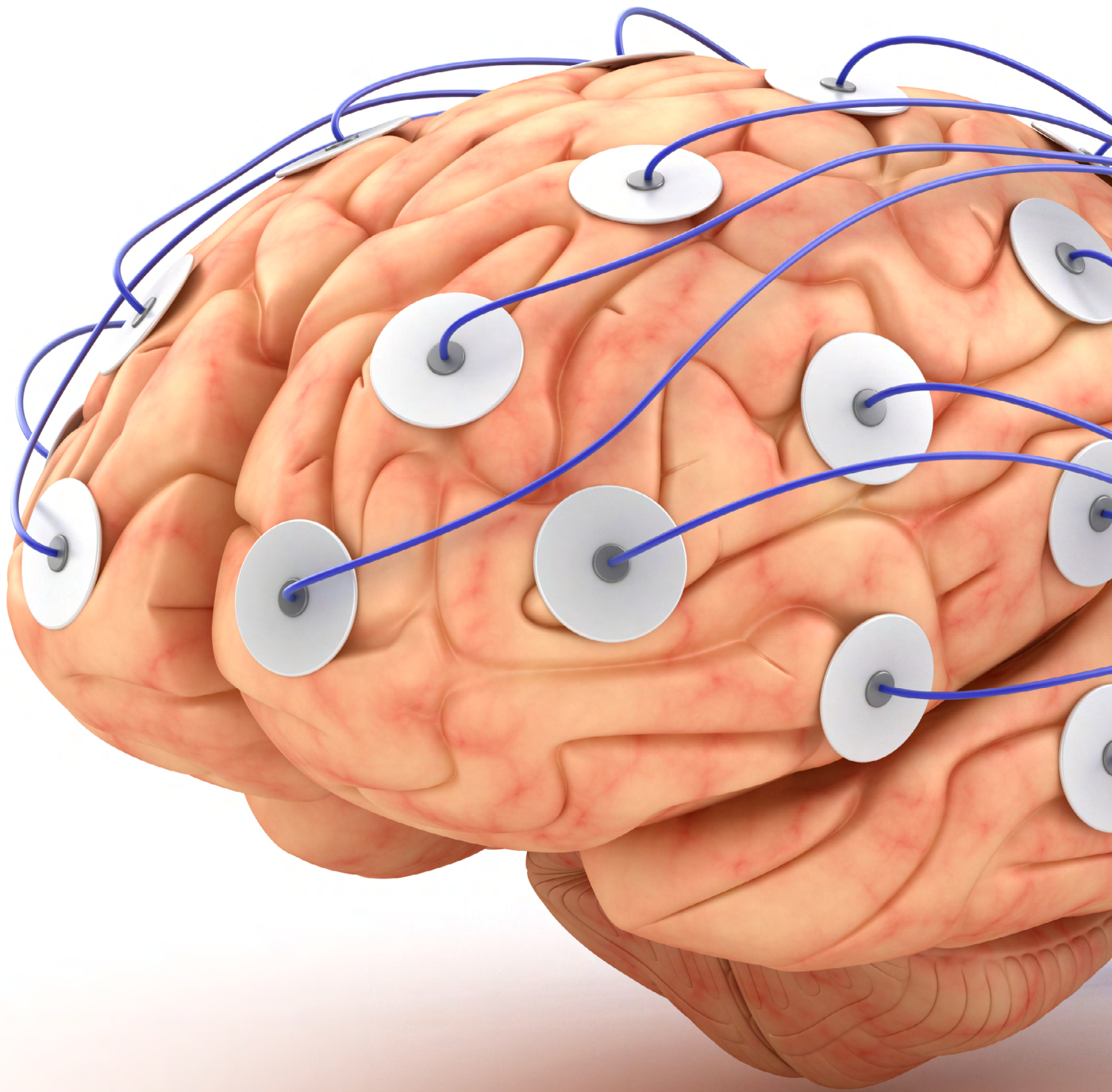


Neurofeedback in the Treatment of Developmental Trauma



A David Van Nuys Interview with Sebern F. Fisher

Sebern F. Fisher, MA, is a psychotherapist and neurofeedback practitioner in private practice who specializes in attachment issues. She trains professionals both in the US and internationally on neurofeedback, neurofeedback and attachment disorder, and the integration of neurofeedback with psychotherapy.

Sebern attended the Masters School before she went to Smith College, Columbia University and the University of Massachusetts, graduating with a Bachelor of Science from the University in 1976. In 1978 she graduated from Antioch New England with a Masters in Counseling Psychology.

Sebern initiated and coproduced a women's consciousness-raising show on WBAI in New York from 1969 to 1970.

She cofounded and helped to administer the first publically funded day care center in New York City, the Children's Mansion, between 1968 and 1971.

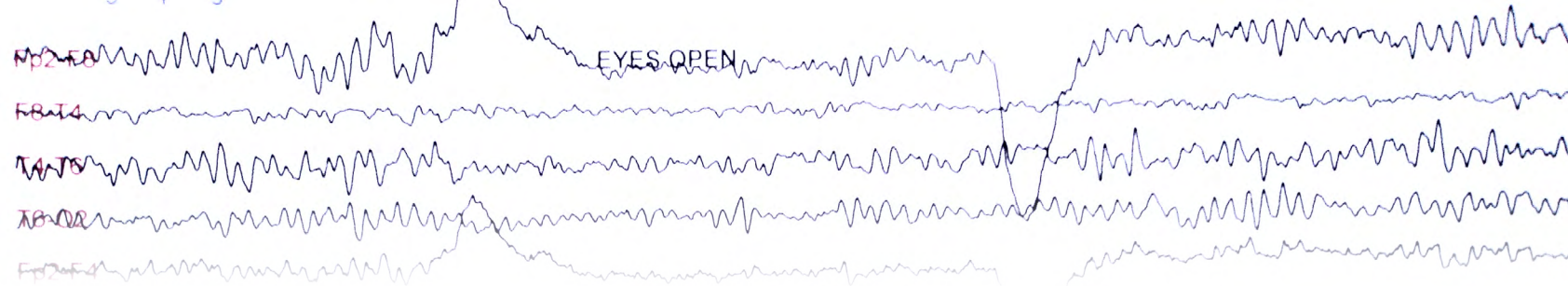
Sebern was one of the founders of the Family Planning Council of Western Massachusetts (now Tapestry Health), which began with one rural clinic in 1973. She started work there as a family planning counselor, and by the time she left that organization in 1979, she was the Director of Training and Education. During her tenure, she mounted two major conferences: Men, Women, and Rape in 1976 featuring Susan Brownmiller, Ann Burgess, and Nicholas Groff, and Sex Education and the Family in 1978.

From 1980 to 1997, Sebern was the clinical director of a residential treatment program for severely disturbed adolescents in western Massachusetts. At that time, it was considered one of the best programs of its kind in the state in spite of the fact that, by and large, the treatment outcomes were abysmal. In an effort to better understand these kids and to enhance treatment outcomes, Sebern introduced attachment theory in the mid-eighties and in 1991, Dialectical Behavior Therapy (DBT). Her center became the first in the nation to adopt and implement DBT in a residential milieu.

Sebern discovered neurofeedback for her own brain in the spring of 1996. She went into full-time private practice in 1997 and began to integrate neurofeedback with psychodynamic psychotherapy. Her book *Neurofeedback in the Treatment of Developmental Trauma: Calming the Fear-Driven Brain* is a direct result of this work.

Sebern trains and consults in the implementation of neurofeedback and on the integration of psychotherapy and neurofeedback nationally and internationally.

Sebern is married to John Fisher, a former CEO of EEG Spectrum (a neurofeedback company in California), a consultant on landlord-tenant law in Massachusetts, author of the book *Property Management for Massachusetts Rental Owners* and the managing director of the Foundation for Neurofeedback and Applied Neuroscience. They have three children, John, Molly, and Blake, and three grandchildren, Jakob, Luke, and Emily. Their youngest daughter Blake also has a practice in neurofeedback where she specializes in the treatment of children and their families.



Dr. Dave: Sebern Fisher, welcome to Shrink Rap Radio.

Sebern Fisher: Hi, glad to be here.

D: Oh good, I'm glad to have you here. I'm very excited to speak with you about your incredibly stimulating book *Neurofeedback in the Treatment of Developmental Trauma*. I was struck by the very powerful forward to your book by Bessel van der Kolk. I recently had the privilege to interview him, and he was already an authority in the field of trauma study, and yet he was so impressed by your approach to neurofeedback that he brought you in to train both himself and his whole staff—that's quite an accolade.

S: Oh, thank you, and I felt that too. With neurofeedback, for a lot of people the proof is in the pudding, and he came and tried it, and he interviewed several of my patients and was really quite blown away—considering their histories and the complexity of their mental health disorders—with how intact they were, how solid their executive functioning was, and how their attachment systems seemed to be working in ways that for him were something quite novel. I think that's true, I think that neurofeedback offers something that is novel for us as psychotherapists.

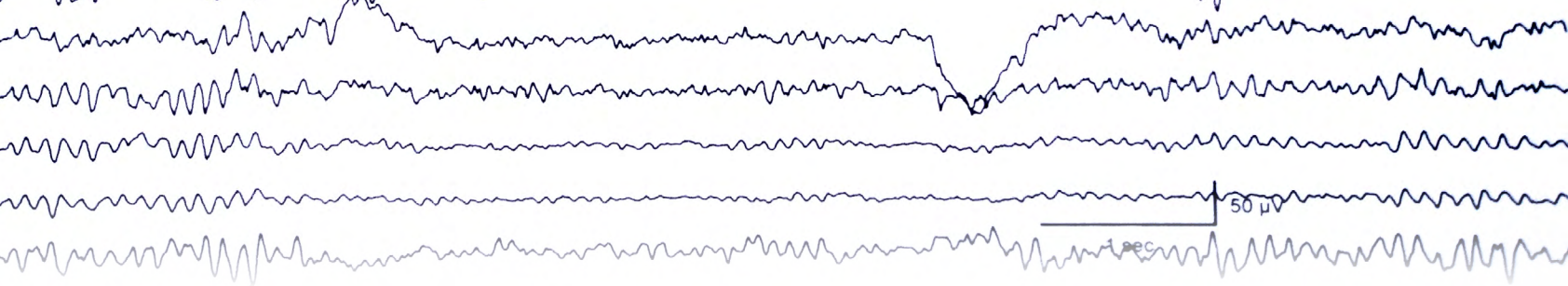
D: Well, back in the 70s I took a training in biofeedback by Thomas Budzynski—he was a big name in the field at the time, I'm not sure if he's still around or not. It was in "biofeedback", and it seems that the term "neurofeedback" has come into use since then—what's the difference between the two?

S: Well, biofeedback is the field at large. Biofeedback, before we had an interface directly with the way the brain fires, was peripheral. So you would do biofeedback for skin conductance or for the amount of temperature in the skin, or heart rate variability—still a very important field of study. Neurofeedback is a distinctive field within the field of biofeedback. You are providing feedback to the brain on the frequency at which it fires. The leading neuroscience is now coming to understand that the brain organizes itself in the rhythmic domain, and how it fires is in the electrical domain and the domain of frequencies. What neurofeedback is, is putting sensors on the scalp (after

you do a lengthy assessment) and finding—and in my case I'm working with developmental trauma—almost 100% of the time it's how I can help this nervous system get quietened down? And so I'm looking for frequencies for the brain, to a certain extent, to prefer. So whenever it makes those frequencies it gets a reward: on a video game, it gets an auditory reward and it gets a spaceship to fire or it will make progress in some way in one of the many video games that are available to play. So as soon as the brain gets feedback that it's done something right, it will do it again. Let's say that you came in and you wanted to relax more, and we had done a good intake and a long clinical assessment; I might say, "Well, let's see what happens when we say to the computer, reward the brain when it produces more alpha (so it makes more 8–11 Hz)". And alpha, we know...there's a lot of literature on relaxation and alpha waves, so what we are doing is, every time it makes more alpha it gets rewarded—and some people will even feel this as they are training in the chair, and they will feel more relaxed. That's not to say that alpha waves are the right frequency for everybody to relax at but it is the one where there's literature about relaxation and the brain. All we are saying is that this is a way to encourage the brain to make frequencies that will help it to self-regulate, particularly in the domain of arousal.

D: It's fascinating to hear that you are using video games for the feedback that are sort of motivating in themselves. I guess a person would really feel some good reinforcement as they are able to get the game to respond in the way they are looking to for moving ahead.

S: Well it's an amazing thing, right, when you think about it—when the person is only doing this with their brain. They are only making that video game go by making more of a certain frequency that is set in the computer after the assessment. That in itself is astounding. My experience has been that video games are motivating for a while, but relatively quickly people become motivated because of the change in state. They really recognize that the training has led to a state change. And even children recognize this, who are not necessarily that aware of themselves. So the motivation becomes intrinsic rather than the video



game facilitating it. The real motivation is “I feel better,” “I’m sleeping better,” “I’m less reactive,” “I’m not as afraid as I was,” and things like that.

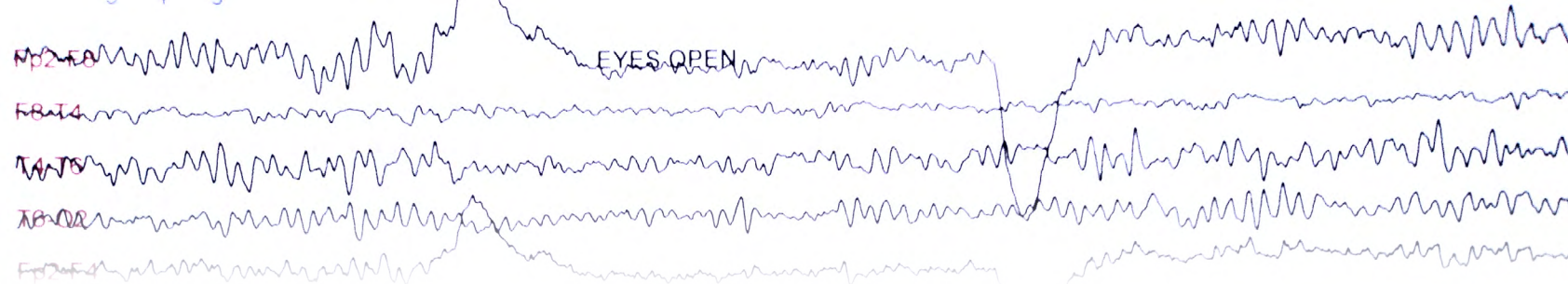
D: Well again, going back to my experiences in earlier days, there was more of an auditory feedback as I recall—a tone that you were trying to calm down in a way as you moved toward alpha. So it’s interesting that video games and visual feedback have come into the process.

S: There is one thing I would say, because you have hit on an important principle, which is that there is always an auditory reward as well and it’s the first one to reach the brain. I actually trained a blind woman who was never seeing the video game; she was only hearing the tone. She got tremendous benefit out of neurofeedback.

D: You have a good story in the introduction to your book about how you got into neurofeedback—maybe you could share that with us?

S: Well I was very skeptical about this. I had heard about it over a couple of weeks from two people; one of them, who was not a psychologist, was very excited about it. And I was at that point the clinical director of a residential treatment center for severely disturbed adolescents, which is at this moment in time implementing neurofeedback throughout the program (but wasn’t intending to do so at the time). The first friend, Barry, said that I could have kids sit in a chair and play video games with their brains and they would have fewer restraints and they would feel better. So I said yeah, well, that’s interesting, but I didn’t really understand any of the principles that would later be revealed to me. And a few weeks later I had dinner with a second friend, Kathy Zilberman, and she said she was investigating this thing called neurofeedback and that she thought it had real promise. I said, “Yeah?” I was far from convinced by either of them. Then she said, “Well, would you be my first subject?” I agreed, because I had faith in both of them, actually, although I couldn’t get what they were talking about in terms of neurofeedback—I was very skeptical but open. The first few trainings that Cathy and I did, I didn’t notice anything very spectacular. I was

a “migrainer” (and neurofeedback has stopped my brain from throwing fits in terms of migraines; I don’t have migraines anymore), and I got migraines when I trained with her initially, and she was very dissatisfied, although I didn’t know to be dissatisfied. We ended up going to her house and training for the weekend. I probably trained altogether at 12–15 Hz, which was one of the few rewards possible at the time; the only filters that they had figured out were 12–15 Hz or 15–18 Hz. 12–15 Hz was supposed to calm the nervous system and 15–18 Hz was supposed to bring the system into better attention and up-regulate arousal. So one was to bring arousal down and the other up, depending on the clinical problem of the person. So we trained to 12–15 Hz, called SMR or Sensory Motor Rhythm, which is at the center strip of the brain at C₄, Cz, and C₃ (those are 10–20 points that all neurologists, and now neurofeedback people, observe). Those were the original points on the brain across the top of the head that were used in epilepsy research, and so much of this came about from this initial research in epilepsy. So I did this training and afterwards I went to a movie. The movie had a very violent rape scene in it, and I normally would not have responded too much to that, but I got viscerally ill. I got up, left the theatre, and in the state of mind I was in I didn’t understand why everybody wasn’t leaving. I was so open to it all; there was nothing closed off. I walked home, and it was getting to be that deep blue of evening; the lights were coming on in people’s apartments, and it was all exquisite to me, and I felt very vulnerable and I knew something had dramatically shifted in my nervous system. The next day I was talking to Cathy and I had pressured speech, I had a migraine, and I was hypomanic. I had never had the experience of being hypomanic before, but I wasn’t worried about it—she was. We were both Dhama students, we were both Buddhist meditators, and she wasn’t reassured when I said “Cathy, I’ve had the experience of being one with everything.” and I was saying that in a hypomanic way, and I think she was very worried about what had happened. I said, “I know that I have pressured speech, I know that I’m hypomanic; I have to say that something beneath that is organizing, or is different or is better than I’ve ever felt it before.” And I didn’t know what to name this. What I realized over the next couple of days was



that this ambient fear that I had lived in all of the time (very high startle response, very reactive nervous system) had all dramatically calmed down—the startle response was gone. It was undeniable to me that something incredibly important was happening here, and by October (it was then May) I was in California learning how to do it.

D: Well, what a fascinating introduction to it—and it's interesting that you weren't scared off by what could have been an upsetting experience. How did you become interested in neurofeedback for developmental trauma in particular?

S: Well I think that one of the reasons I wasn't scared off from it leads into the answer to that question. There were two levels of experience that I was aware of having. One was that this fear level that I had lived with all my life as a result of developmental trauma was greatly reduced. There was more to be done with that but the difference was dramatic. I was working with these kids with these terrible trauma histories and nothing worked, nothing helped them. I mean it helped a little to do therapy, and it helped for them to be in a residential program for the time they were in it, but they were all going to go back to these very difficult circumstances, most of them poor on top of being maltreated by caretakers and by foster parents and disrupted attachments. But, baseline, when I was looking at affect for these kids, they had limbically driven affect, so they were afraid all the time (not that all of them acknowledged that), and they were shamed a good deal of the time, lived in a state of shame and could be easily triggered into shame, and they were angry and quick to express anger, and all of those things were affects that I understood and that had all quieted as a result [of neurofeedback]. So it was really a track, you know; I had my experience, I don't know that I would have gotten into this field without my own experience, because there was no...the book that Buzsáki wrote on the rhythms of the brain, which really very strongly suggested that the brain organized itself in these electrical domains, didn't come till much later, so that it was going to be eight years from the time I entered the field that there was any paradigm in neuroscience (there was one person a little bit earlier, about 2001, who was

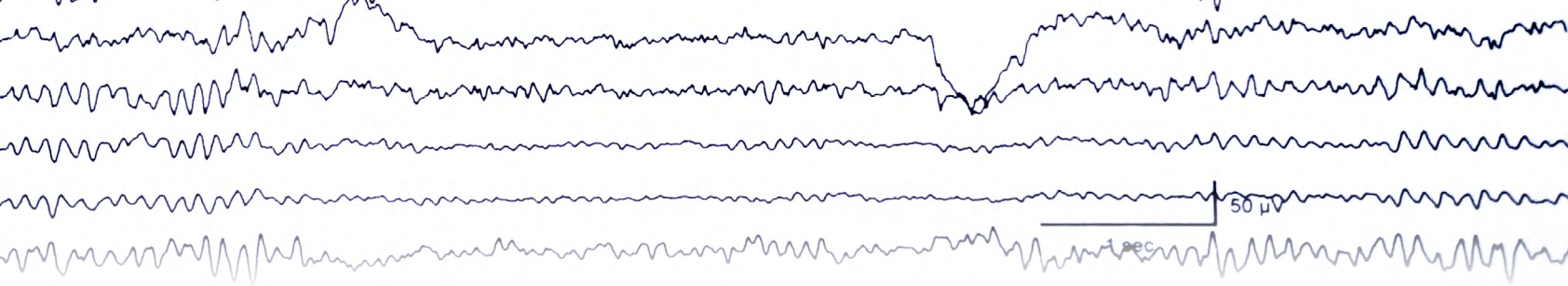
suggesting a very similar thing)—there was no mainstream neuroscience that suggested anything like this should work. It was all chemistry based and neurochemicals. This domain was not recognized, and so the fact that we could access and engage on this level was not recognized. So neurofeedback was off on its own in relation to neuroscience, but now neuroscience is rapidly catching up with the things that have been discovered—what the brain can do if you give it feedback through the electrical domain, to the way it fires.

D: Well, tell us what you mean by the term developmental trauma.

S: Developmental trauma is an attempt by the National Child Traumatic Stress Network—Bessel van der Kolk et al.—to provide a diagnostic term that better describes the real dilemma of children who are neglected, who are abused, who are often poor with food insecurity and not knowing where the next home is going to be, where there's been attachment disruption and any number of different kinds of abuse. It is a term to encourage people to think about kids who have been through these kinds of histories, that they are going to have impacts on their developing brains that will be different than a single incident trauma. It is not the same as a car crash or an IED, as terrible as those things are, and as terrible as PTSD is, this is something even bigger and that really frames who that person is. The developmental trauma is about the aftermath that is suffered by those who are not nurtured, who are abused and neglected as children.

D: You really illustrate this well with a story that you tell in the introduction of your book about Carl. I'm wondering if you can share that with us, because it really illustrates the many features of developmental trauma.

S: Well, Carl was the youngest child we had ever admitted to the residential treatment center for adolescents. We admitted him shortly after his 12th birthday because no one else in the state would take him. He had come from a secure setting after an assault on his adoptive mother. The assault had been provoked by the mother's refusal to give him a snack



until he had finished his homework. And he went outside and picked up a piece of construction material, a 2×4, came in and hit her pretty hard across the head. She ended up in the hospital and he ended up in a secure mental hospital on the eastern side of the state, and they rescinded the adoption. She recovered and he ended up in our treatment center. His history was that he was one of five kids, all of whom were in foster care. He was born in a car, his mother lost custody of him rather quickly, his father was in prison, and as his clinician what became clear to me was that he really did not know that I was there. He was given what was controversial at the time, a diagnosis of reactive attachment disorder. It was controversial even at my center; we were one of the first to come to understand how vital this early attachment was, and he didn't have that. He had not developed any sense of himself as an entity, as a being, he had no sense of me either as another person. There was no way of getting that to form in him; he had no capacity for empathy, he had no cause-and-effect, he would do the same thing over and over again, and he would always be perpetually surprised that he would be disciplined for it or that consequences would follow. He had no friends...

pulsive disorder, borderline personality disorder, and more. Are these cases of misdiagnosis, or what?

S: Well, Bessel van der Kolk said once that if you could strip trauma out of the DSM, you would have a pamphlet.

D: In other words, everything in the DSM has this underlying trauma...

S: Not everything, but a good deal of it. What is a conduct disorder? What does that mean? It's a tautology, it's a way of describing something you see; it's not a diagnosis. So what causes these kids to behave the way that they do? What causes them to behave the way they do is these baseline limbic emotions that are not—according to Allan Schore—not appropriately inhibited by the prefrontal cortex. There's probably more to it than that, but that's a good beginning.

D: In the book you cite Allan Schore's work on affect regulation as key to a lot of what's going on in these various diagnoses.

S: Yes.

D: You have spoken about attachment, and maybe you can say a little bit about the relationship between developmental trauma and attachment theory?

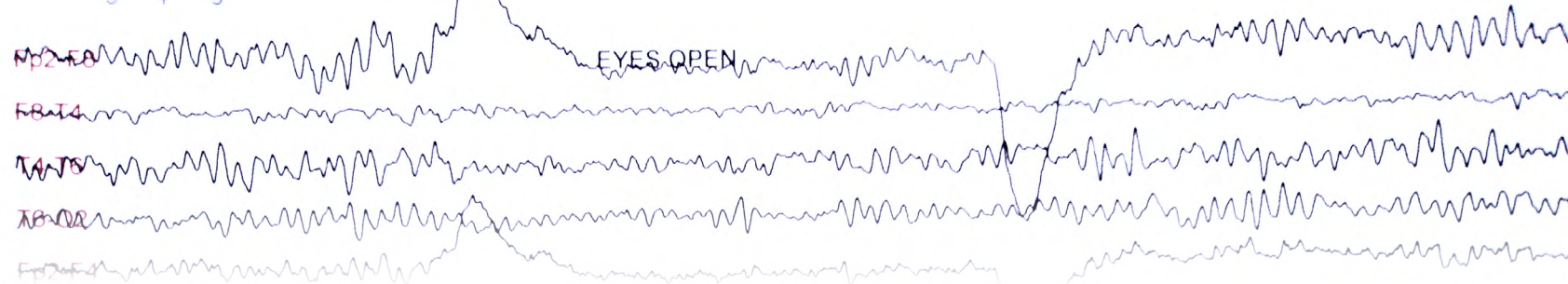
S: Well, it's just to say that attachment disruption is one of the disasters that is core to developmental trauma, but it's not the only thing that happens. Trauma that we can discreetly say is trauma—that would make it PTSD—is not the only thing that happens. So if we look at trauma and attachment disruption together, that's when you get this new way of thinking, this hoped-for diagnosis—It was not accepted by the DSM-5. It's a diagnosis that would cover...I think it's 3 million kids a year in the United States that are reported for abuse and neglect, and they are now "managed"—there is no "fixing" with the way that we generally do business—these disturbed kids are given 18 billion dollars in drugs every year.

D: One of the powerful terms that you use is *attachment rupture*, which presents a powerful image of just how

D: ...And this is about what age?

S: He was 12. But he was with us until he was 18, and he made relatively little progress. He assaulted staff—I tell a story about him in the book where the staff who liked him the best (there weren't many) went on a camping trip out in Maine. And he went off in the morning before the staff had woken up and left with a couple who were camping adjacently at the camp site. They just took him—he wasn't kidnapped; he went with them willingly. The staff found him 100 miles up the road. There was no difference in his mind between the people he had met the day before and the staff that he had known for four years. Nothing was computing relationally—nothing.

D: Now one of the things that I found fascinating is the point you made that many patients may be given a diagnosis other than developmental trauma, such as ADHD, PTSD, attachment disorder, dissociative identity disorder, conduct disorder, obsessive com-



profound the impact is.

S: We need our mothers; we need our fathers too, and if our mothers can't do it and our fathers can come in and mother us then I won't see those kids as adults or teenagers. When I was sitting down to write this book and was thinking, what's the commonality of my patients, because they are all very different, unique individuals—the commonality was that they were all motherless. They were all either actually motherless or they perceived themselves as motherless; their mothers were so mentally ill or emotionally or physically [absent], or there was a premature death of the mother, some way or another they did not have a mother and perceived themselves as motherless. When you don't have the containment of a mother, there is no one to protect you; you are prone to becoming a victim of abuse and further neglect. If your mother doesn't care for you, who will?

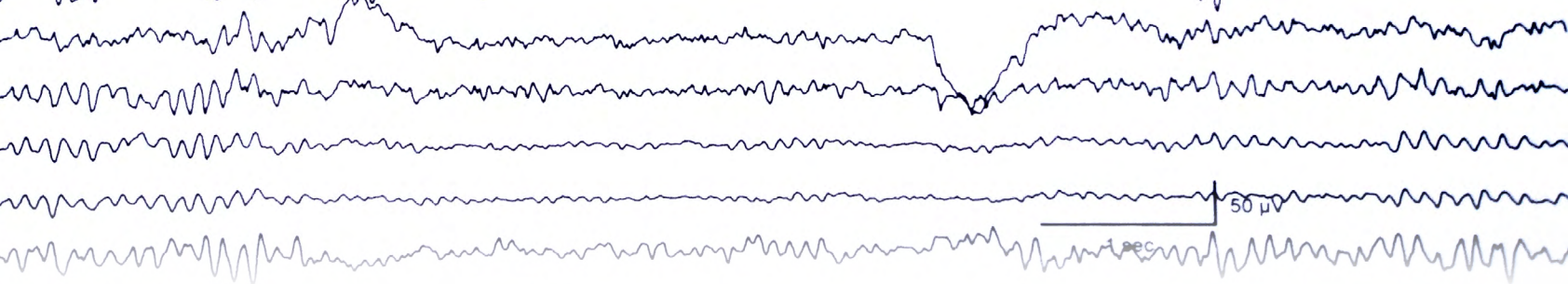
D: The subtitle of your book is "Calming the Fear-Driven Brain", and that seems a particularly pregnant phrase to me, and you know you spoke about your initial experience with neurofeedback and that there had been an underlying fear that had gone away, and that was very striking. I have sometimes thought myself that I have been aware of fear at 3 o'clock in the morning when I can't sleep, you know that fear seems to be a bottom line in some way. So maybe you can expand on that just a little bit in terms of the relationship between attachment and fear?

S: In Allan Schore's work the focus is on the mother-infant bond, the attachment made between the mother and the baby. And what is new, what has been revelatory about his work, really, is that not only does the baby learn the mother's regulation through being with the mother, but her emotional regulation creates brain structures in the front of the brain in the prefrontal cortex. This part of the brain as we mature takes over a good deal of the load of the inhibition of the limbic brain. The limbic brain is the one that you are visited by at 3 o'clock in the morning. It is the brain that is producing fear as a signal that you should do something. It's emotion to serve motion. The problem is that without the development of the prefrontal cortex, because there is not a mother...

the mother left Carl when he was born in the car and then he was raised in institutions; there was no one who was helping him just by her being, by holding him, by the prosody of her voice, by the rhythm of her voice, by the way she looked at him, by her own emotional regulation and her love for him—there was no one that would help build the parts of the brain that shut down these limbic drivers. So this was a kid—and they were all like this, really, in one way or another—that was just driven by fear, shame and rage. There was no cause-and-effect as something that babies start to learn in the first year of life—what I call right-hemisphere logic. Because, you know, as a baby you will cry and if you are changed or fed or made comfortable in some way, the crying stops and you start to build a cause-and-effect relationship. But if when you cry somebody yells at you or they shove a bottle in your mouth or they throw you against a wall (all of which my patients have reported), or if you are neglected completely, no one responds at all (which may be the worst of all of it) then there's no healthy cause-and-effect. All learning is based on cause-and-effect. So these are very impaired brains if there is no mother in the picture. It's going to be a fear-driven brain, primarily. Carl would never talk about himself as being afraid, though he was chronically afraid. But he would talk about himself as being angry. He wouldn't have talked about himself as being ashamed, but he lived in primal shame all the time. The limbic brain was in charge of him and no number of staff or therapists or adoptive parents or foster parents could help him set up the structures that he needed to not keep doing the same thing over and over again.

D: Before you got into neurofeedback, it seemed like both kinds of issues were therapeutically untouchable; there wasn't much you were able to do. What comes through in the book of course is your tremendous expertise and excitement that neurofeedback is able to deal with these issues so effectively. How is it that neurofeedback addresses these issues?

S: Well there is a lot of conversation about that, and sometimes controversy about how neurofeedback addresses this. When we enter and begin a relationship with the brain, we are really entering a universe.



There are trillions of synaptic connections, if you look at a diffusion tensor image of white matter tracts (these are the glial cells, not even the neurons), and for every white matter tract—these are connective tracts in the brain, let's say from the hearing to speech production centers—that you can see in the image, there are a million you can't see. We are really entering into this vast internal universe. So you have to enter it with some understanding of what you are trying to do, and for me that was based on my own experience and based on years of psychotherapy, and we knew that emotional regulation was essential if therapy was ever going to be useful. The emotional regulation, particularly with disturbed patients, falls on the therapists. They get calls all the time, they have to hospitalize patients, they are in dicey therapy relationships, and the regulation of these patients, particularly as adolescents and adults, is a very difficult thing, because they lack self-regulation—they lack self-regulation essentially because they lack a mother. What we are doing is going through the portal of emotional regulation and saying to the brain, “Alright, there are certain frequencies that you are going to learn to make more of” (and I can't teach them anything they don't want to learn). They go in, and they are making these frequencies, and I'm just suggesting (by what I put on my computer) that if they have a response that is quieting to 8–11Hz (for example), then we will continue to train 8–11Hz to make more of this, to continue quieting and to feel better. But if this doesn't make you feel better and more organized then we are going to change that protocol. We may go lower, we may say 7–10 Hz may feel better. There is a lot more to this, that people get in training, but that's the essential principle, and you inhibit certain frequencies as well where problems tend to propagate in the brain.

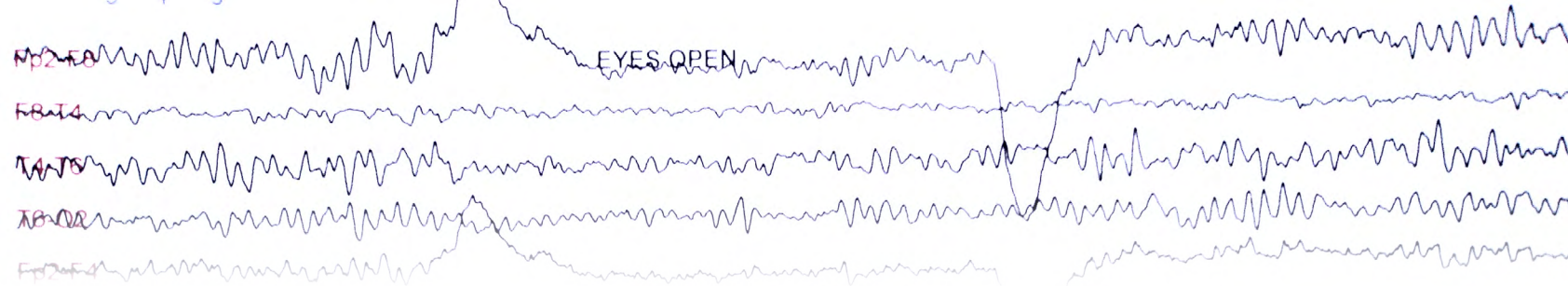
D: Do you use different points on the scalp for different conditions or purposes?

S: Well, for different people...it is not necessarily a condition base, and I can tell you a story about that. The temporal lobe is where the amygdala, the focus of fear circuitry, is located, so I will tend to focus (when there is a lot of emotional turmoil) on the temporal lobe—just because it is the closest I can get, geo-

graphically, to the amygdala—and that works for most people. But then comes along a patient of mine who had been in residential treatment; she was now in her 30's, and she had called me up, she said, “I'm going to kill somebody, I need to try what you do.” She had a history of attempted murder, so this was not necessarily an exaggeration; she was very angry with somebody. She came in and we trained her initially off the temporal lobe, and she got quieter and quieter, and within three sessions she felt she was at no risk of hurting anybody. And because of my knowing that the problem for her brain was in the temporal lobes, I switched the placements to her temporal lobes—so from the top of the brain down to the side of the brain—and trained her, and she did not have a good response. So I followed the rule of the brain (I don't always know what they are): I got off the temporal lobe, went back up to C4; I was always on the right hemisphere because I knew it was this early right hemisphere development that is lacking in developmental trauma. And I think what had happened with her response was that she had had a lot of head injury as a kid; her mother beat her up, and one of the vulnerable places in the head for people who are knocked around is the temporal lobe. So I may have hit on a bruise or some memory that made her very uncomfortable, so we didn't stay there. But generally speaking, with developmental trauma usually I want to get to the temporal lobes.

D: How do you introduce neurofeedback to your patients? What do you tell them?

S: Well I have to recall, because now just about everyone who seeks me out is after neurofeedback. So we still talk about it, I still need to know what their expectations are, but essentially I tell them very much what I'm telling you; I don't go into the stories, but I talk to them about how the brain organizes itself, how their history suggests their brain might be disorganized. I do talk about how we are going to be in a partnership along the way, that we are working on this together. Each time we train they have to tell me what they have experienced the time before—some people are much better at this than others, because it's a very dynamic process, and I don't want to make anyone feel worse than they are, and so I need to fol-



low how their brain is responding to my assumptions. And more and more the neurofeedback is informed by them, because they will experience things, they will report things. And I would say that the majority of people who have come in to me early on with serious traumatization are people who say something like “Therapy doesn’t work,” and “I don’t want to do therapy.” And I would say within 10 to 15 sessions I am always doing psychotherapy, and they are interested in doing psychotherapy, because there is a new level of capacity for that and new ability to be interested in feelings. I write about the transition from a fear-based brain, where fear runs the show, to curiosity coming on board. So when curiosity comes on board you know things are starting to change.

D: So you actually do psychotherapy a good percentage of the time. What percentage do you think you move out of neurofeedback back into the psychotherapy mode?

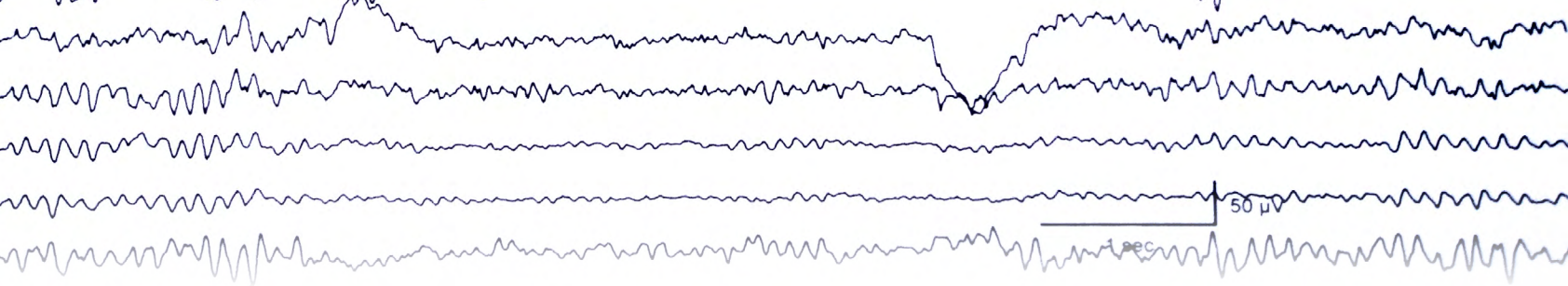
S: Well I’m doing them together most of the time, and this is so individual that I can’t generalize, but there is not a session that I have with anybody (even with those people who say “I don’t think psychotherapy is helpful or important or useful”) where I’m not doing therapy. I am also recruiting them for the relationship and anticipating that very soon they will be engaged in what we typically think of as psychotherapy. It’s affect regulation. If you are not overrun by this limbic fear, you can be curious, you can be interested. They start to develop a sense of self, and they will develop a sense that I really exist. And I haven’t seen that if I’m not working with the brain but just using psychotherapy alone. Carl could never...and interestingly he did a little bit of neurofeedback on one break when he was out on parole, and he called me—he wasn’t doing it with me, I had hooked him up with someone else—and he said, “You know, I blew up at this guy, and then I realized that I shouldn’t have blown up at him, so I called him back and apologized.” Well that was just jaw-dropping, and unfortunately there was not enough time for him not to go back doing something stupid that he was prone to doing, and he was going back to jail. Even with a little bit of neurofeedback he had a different relationship with himself and with other people.

D: Is it possible to generalize about how many sessions you have on average as you work with people?

S: Well, I say in the book that for developmental trauma we are probably talking 100–500 sessions. You know, you are building a brain; it’s not a minor thing. And you are not just asking people to manage their symptoms, which really, when we come right down to it, almost all psychotherapy is either to understand yourself to the end of mastery or management of symptoms—or cognitive behavioral therapy, which is focused on a good deal of skill building and making behavioral change or changes in thinking, although most of the research suggests that behavioral therapy works because there are changes in behavior, not so much changes in thinking. That’s all in the realm of management, and not in the realm of resolution. What I’m interested in is quieting this fear, teaching this hijacked nervous system that it no longer needs to be hijacked. That can take quite a bit of time. For some people it can work sooner than that. I wrote in the book about three discrete case studies and the young woman who was molested as a child and had Asperger’s and a severe eating disorder—that case covers about five years and it’s in a narrative form. There is a case of a young woman who had been incested by every member of her family and had also been in a residential treatment setting with me, and had come much later on as an adult—that was a 30-session segment. It wasn’t enough, but it was what she could do given the circumstances of her life, and there were astounding changes in that period of her life. Then there is a 95-session account of a young woman with DID and the resolution of DID in 95 sessions.

D: Now, are there any negative risks in relation to neurofeedback?

S: Well, there can be temporary negative aspects. If you reinforce the brain to make a frequency that is dysregulating to the brain, it will learn that too. So at one point I made a mistake with a patient and I realized it as we were training, and I stopped, and I told her what had happened. I had continued to train her arousal up; it was accidental, she was somebody who



really needed quieting. I told her, “We need to make a safety contract,” and she said, “I feel fine, there was nothing to worry about,” but I said, “No, I need to see you tomorrow, and in the meantime you just have to promise me to stay off the phone.” I was afraid she would buy a lot of stuff—she had a kind of bipolar feel to her—or get on the phone and berate somebody, or go out and drive her car fast, or some other sign of overarousal. In fact she did adhere to the contract, and she came in the next day quite speeded up. So I didn’t intend to do that; sometimes that can happen—even as you are trying to find what is best for this brain you can get negative responses. Really, Dave, what we are talking about here is neuroplasticity, and where that plasticity is in the brain. And it is not in the chemical domain; we do not make brains more plastic by giving them more drugs. Where the brain makes adjustments is in this very complex electrical domain. Can we err in our path toward optimal plasticity? Yeah, we can. But it’s plastic. What you train into you can train out of, because the very core notion of all this is that we are entering the domain of brain plasticity.

failing; therapy is always disappointing that need in people, because it’s impossible not to. We do work-arounds in therapy to help people manage this terrible maternal yearning.

D: You have written that transference issues are particularly acute in working with developmental trauma. Tell us a bit about this.

S: When we were talking before, saying these are people that are motherless, what tends to happen is that there is some way that these feelings are going to enter the therapeutic relationship, whether you acknowledge transference or not. These deep yearnings for a mother are ubiquitous. It is either heeded, or it is consciously kept out of the therapeutic relationship. There can be attempts to say...“It’s stupid, I just have to grow up” is a very typical thing that people say to me; “I can never have a mother, I didn’t have a mother, I just have to give up on that.” These feelings are so deep and so primal, and it’s true that therapy...as Don Getto, an analyst, once said, psychotherapy is an unprecedented relationship. The closest that therapy comes to another known relationship is parenting. You can’t reparent somebody who doesn’t have a brain that allows you to exist. The brain itself does not have the self/other organized. Without neurofeedback, that yearning is constantly

D: I need to remind myself that we are talking about developmental trauma—what about neurofeedback for healthier individuals, that is, people not so deeply traumatized but with other, say, “garden variety” psychological issues? I’m thinking about a practitioner who maybe regards themselves as a very technically oriented person who wants to do neurofeedback, who wants to hook a person up to a machine and that’s it. What do you think about that scenario? Are there people like that out there? Does that seem like a reasonable stance, or should neurofeedback therapists be trained in psychotherapy as well?

S: So there are several questions in there; let’s see if we can’t pull them apart. Neurofeedback is obviously going to affect the brain and the mind, and my feeling about it, if it’s regarding a disorder, is that it’s relational. It’s relational technology. You are wanting to...even with less traumatized people, you are always looking for, are they becoming more relational. That’s what saves the world: if we are relational, if we are empathic with one another. One of the things that happens when you train for affect regulation in neurofeedback is that when affect regulation comes on board, people start to feel mothered. Even though they wouldn’t say this, this is what is in fact happening, over time. Truly the gift of a good mother is affect regulation—that’s what gets us through the full catastrophe of life; that we have affect regulation. If our mothers can’t give it to us then we rely on therapists or institutions to provide that, and what is new on the horizon is that we can teach the brain to regulate itself and be given the gift of mothering in that process. So that’s to just finish off the developmental trauma piece. Everybody gains from affect regulation: athletes gain from it; people with attention deficit disorder will often need their arousal to be increased. One of my very first cases, which was just astounding to me, was somebody that I had been seeing in psychotherapy. She didn’t want to take any medications, she was seeing me for depression, a very competent professor at a local school, and she

came in shortly after my very first training doing neurofeedback, and she was crying and I hadn't seen this. Her sister had committed suicide with bipolar disorder, My patient had unipolar depression, but it was severe, and I hadn't seen how severe until she had come in this day, and she said, "I can't teach, I can't organize my thinking, everything is bleak, I want you to try this thing you have just learnt." I was hesitant to do it, but I had learned with depression like this that you train on the left side of the brain, 15–18Hz—and it was astounding! Within the 30 minutes of the training that we were doing, you could see the color change in her face. She felt perfectly capable at the end of that session to go back and do her classes; the depression had significantly lifted. We did 23 sessions just like that, over and over again. And I did a 12-year follow up with her, because I was going to Australia and she was somebody who goes to Australia frequently. She was done at the end of 23 sessions, and she said, "You can tell your audience that I have had mornings when I wake up and I'm a little blue, but that is the worst that has happened in 12 years, and it's nothing that a cup of coffee or meditation doesn't take care of."

D: That's great. Now you say that neurofeedback training should only take place under the supervision of a properly trained professional. What constitutes proper training, and where would interested clinicians find good training programs, and would there be any degree requirements?

S: The system that I use, which is EEGer, requires an advanced degree in your field, and the people that are encouraged to train are psychotherapists, so they have already been trained in the mind and they can track what changes they are seeing. So they have already been licensed as professionals with at least a master's degree. The best training I have found is through EEGer, I think primarily because it is very clinically focused. There are a lot of systems and I'm not trying to promote one system above another, but this is the system that I use and have been very satisfied with. There are different ways of entering this universe; this is not the only way. But it is very attuned to the way therapists think about primary affect regulation. The teaching of neurofeedback through EEGer is a great deal about affect regulation, so that's where I send people—it's on my website, actually.

D: OK, well this is probably a good place to wrap it up. Is there anything else you would like to say that you didn't get a chance to say?

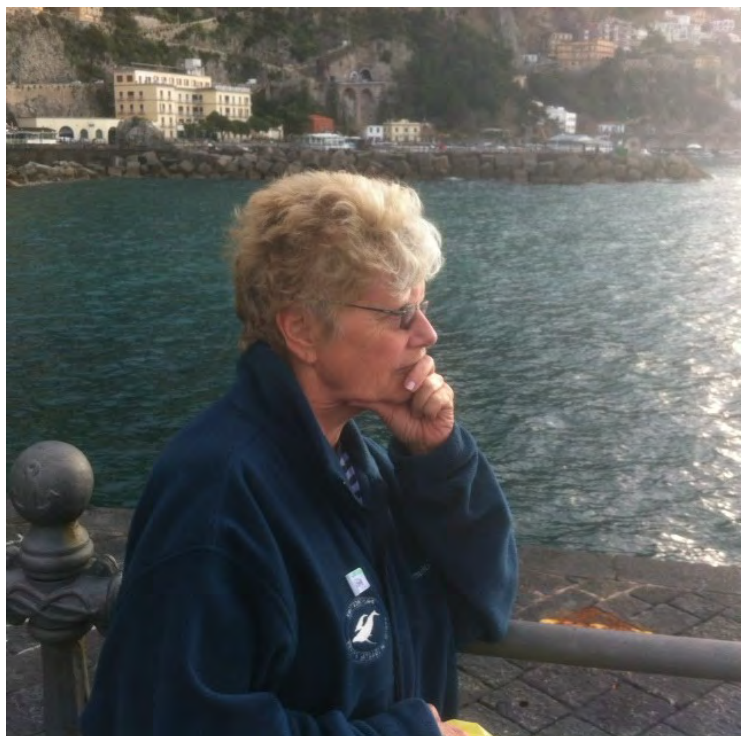
S: I would just like to say that all brains can improve. I am working with people who have had terrible developmental deficits, where there has been no mother there or the mother that was there was so compromised that it made things even worse. There is profound neglect and often profound trauma. But neurofeedback is also used by sports psychologists and it is used to enhance performance, so, the better your brain works, the faster it computes the situation, the better your athletic performance will be. Because I am a psychotherapist interested primarily in relationships, I use the example that if Bobby Fisher—who is now dead, but if he had come to see me and said, "I want to become an even better chess player," he probably would have become a better chess player by just quieting his arousal, and in that process he would also have become a better human being. My goal with neurofeedback is to help every one of us become more relational, more connected, more tuned in, more empathic, and more able to love.

D: Well that is a great close. Sebern Fisher, I want to thank you for being my guest on Shrink Rap Radio.

S: It's been my pleasure, Dave, thank you so much.



This has been a transcription of Shrink Rap Radio interview number 452 with Dr David Van Nuys.
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International Journal of Neuropsychotherapy (IJNPT)

The IJNPT open-access peer-reviewed journal is calling for submissions for the 2015 volume.



Aims & Scope

The International Journal of Neuropsychotherapy (IJNPT) is an open access, online journal that considers manuscripts on all aspects of integrative, biopsychosocial issues related to psychotherapy. The IJNPT aims to explore the neurological or other biological underpinnings of mental states and disorders to advance the therapeutic practice of psychotherapy.

Our mission is to provide researchers, educators and clinicians with the best research from around the world to raise awareness of the neuropsychotherapy perspective on mental health interventions.

We are looking for the following types of articles:

In accordance with the scope of the journal, papers submitted must be associated with the neurological or other biological underpinnings of mental states/disorders, or advances in any biological/psychological/social understanding of interrelatedness and impact on psychopathology or normative mental states and how these advances in knowledge impact therapeutic practice.

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