



Daniel J. Siegel on the Developing Mind

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Daniel J. Siegel, M.D. wrote the internationally acclaimed book, *The Developing Mind: Toward a Neurobiology of Interpersonal Experience* (1999). His most recent book is *The Mindful Brain*. Dr. Siegel is an associate clinical professor psychiatry at the UCLA School of Medicine. He is also the Director of the Mindsight Institute, an educational organization that focuses on how the development of individuals, families, and communities can be enhanced by examining the interface of human relationships and basic biological processes.

Serge Prengel, LMHC is the editor the *Active Pause* project.

For better or worse, this transcript retains the spontaneous, spoken-language quality of the podcast conversation.

Serge Prengel: You talk a lot about the mind, so maybe could you start with telling us a little bit about how you view the mind?

Daniel Siegel: This question about the mind is so central to what every psychotherapist actually does and being trained, myself, in psychiatry and being immersed in different forms of therapy—like family therapy, couples' work, or working with psychodynamic therapy, thinking more along the lines of evaluation—all those ways I was trained, I was kind of struck by how we never actually talked about the mind; and in my own background, when I was a research fellow working with different scientists, we formed a group together for five years studying the relationship between the mind and the brain, and that period, the beginning of the decade, of the brain, was really a wonderful time as a therapist to think, "what is the mind?" And what was shocking to me to find in the last 8 years or so was this very strange statistic, which is: of the 75,000 therapists I've asked, only about 2 to 5% have ever had even one lecture defining what the mind is. And that's across the board: psychiatry, psychology, social work, psychiatric nursing, body therapists, art therapists, music therapists—across the board. It was really shocking and I continue to ask the question because I'm hoping there'll be some group where that's not true, but that hasn't been the case. So over 95% of us, me included, have never had a lecture defining what the mind is. You can ask these mental health practitioners of all these different disciplines the same question about mental health and you find the same percentage: that about 95% or more of people in the mental health field have never had even one lecture defining mental health. So we're in a very strange period, of course, where, yes we're trained in psychiatric diseases and psychological suffering, yes we're trained in methods to try to alleviate suffering, but there isn't a commonly viewed or any viewed perspective for 95% of us on a mind, let alone a healthy mind.

SP: What it is we're trying to do. . .

DS: Exactly. And as a psychotherapist, the psyche is defined as: the soul, the spirit, the intellect, and the mind, and then in Webster's dictionary, it goes on to define the mind as this "subjectively experienced entity which is based ultimately upon physical processes, but has processes of its own." So I'll offer you a working definition of the mind that was useful for this group of over 40 scientists years ago. And it's been useful ever since, I've been using it now for about 16 years, and it's been

helpful because none of our fields have a definition of the mind. It's a working definition that all of us from the various aspects of psychotherapy can actually join together, and here's the definition-- it's a working definition, so it's a work in progress, but this one has been quite useful for these many years—and it's like this: that the mind can be defined as a relational and an embodied process that regulates the flow of energy and information. So within this definition we can look at why different scientists all agreed on it, but within this definition for us as therapists we have a couple of very key features. One is that it's relational and it's embodied. So it happens between you and me now, between just the two of us and the people listening to this interview, it happens in our relationships with each other, and that's the relational part of the mind. But it also happens as energy and information flows not just between people in relationships, but within the body itself. So you might focus on, for example, the nervous system that's distributed throughout the whole body—sometimes I'll abbreviate that with the word brain—but we're looking, really, at energy and information flow that happens throughout the entire body, not just in the tissue that's in the skull. So the embodied part of this definition means that energy and information are flowing throughout the body. Now let's look at what energy and information flow mean. The word flow means that something is changing over time, like a river passing by a particular place, water is flowing by. In the case of the flow of the mind, we're talking about energy and information, and "energy" is the physical property of energy—it's not a mystical, confusing, non-descript term—it's actually what we mean, like the difference if I say, "let's talk about the mind" or "let's talk about the mind!"—you can feel the different amount of energy and the amplification of what's flowing there in the two examples. Information is something that's defined in science as a way of representation of something other than itself. So if you were holding a rock in your hand, the rock would have a lot of data, a lot of aspects to it you can measure, but there's no information in the rock because the rock is just the rock. But if you and I talk about the word "rock," that's information because R-O-C-K and the sound "rock;" that is not the rock itself so it is a representation of something other than itself. And we can share then that informational representation and that's a part of what the mind regulates. So in large part we can look at a triangle of human experience and say there are three aspects to this triangle: one is the mind—this regulatory process that is regulating energy and information flow—one is relationships, and that's the way we share energy and information flow, and then a physiological mechanism, if you will, which would be the body, or the body-brain, however you want to say it. And this body-brain is a physiological mechanism by which energy and information flow. So in this triangle I think as therapists we are always working with the three components of the triangle of human experience and in a moment we can discuss, if you like, if that's the mind, you know, what's a healthy mind.

S P: That's obviously something of very crucial importance in our practice, but I want to stay for a moment in what you'd just described. And in the definition you gave, certainly part of it is defining the mind as a process as opposed to an entity or a thing so in that sense growing very much from that part that's still ingrained in us, to some extent, in language about some words like psyche or soul or spirit and at the same time that it's embodied so the two things can seem a little bit—you don't feel logical when you describe it the way you do, but they go at cross-purposes to the understanding that we have ingrained through generations of past thinking.

D S: We do think of the mind as a noun, rather than a verb, and that use of linguistic categorization—like the mind is a noun, an entity, rather than a process—gets us into a lot of trouble; because this is a fluid, dynamic, moving process, and when you really see it that way, all sorts of windows open up as opportunities to help people transform the process that is the mind.

And rather than being fixed in the notion that the mind is like an object, when you see it as a verb, as a process, you can actually work with it in a more effective manner.

S P: So that would lead us to the other part of the question of mental health; because you're talking about mental health as transforming the processes of the mind.

D S: Yes, this is a subject that can take an 8 hour lecture for everyone to have fun and talk about clinical examples and get into it. In a short interview like this I'll give you what I think is the outcome of an 8 hour discussion like that. But if you feel like, "that's pretty abstract" or "I don't believe that" or whatever, I suggest either you read the books that are available in our series on interpersonal neurobiology, certainly we have a lot of recordings on the neurobiology of well-being, so I'll touch lightly on the journey to get there and I'll give you the punch-line of the joke. Here's how it goes: when I was writing a book called "The Developing Mind," I was working in a field called attachment which looks at how the relationships between parents and their children help children develop resilience, and ultimately move them toward well-being. So attachment isn't everything, but it's thought to be a very important part of the experiences that help shape the way a child's mind develops. In this book I was trying to summarize all the major areas of science, for example about memory or narrative, attachment, and when I got to the chapter on emotion, I wanted to summarize for the reader: what makes for healthy emotional communication? I thought it would be important to look into, "what is emotion?" So I started looking at the science of emotion and reading the research studies of these scientists who are actually spending their lives studying this process called emotion. The first thing is: there was no shared definition of what emotion is. So that was a little startling and if you actually sit down with 100 therapists, you'll probably find about 99 definitions of emotion. And I've had the opportunity to do this and you find that no one seems to agree. Everyone knows sort of what an emotion is, but when they're asked to articulate they have a hard time. And I do too. So I had to finish this book, and I've got to say, my wife was getting understandably frustrated because this book was going on and on and on. So as a matter of marital emergency I said, "how can I write a chapter on emotion—I've got to finish this book— if I don't find a way of summarizing what the scientists are sharing as an idea of emotion." So suddenly it began to become apparent in the writing of these scientists, not so much what they were saying directly, but what they would kind of say almost parenthetically, was something that was shared in common. And when you find out, it's called consistency—a parallel finding from independent approaches. So the consistent finding that came up was the concept of integration. And integration is defined very, very specifically as the linkage of differentiated components of a system; the linkage of different parts. So for example, an attachment researcher might say, "emotion and emotional communication are important to development, it links the child across the various stages of development." Or a relational therapist looking at attachment or even family functioning might say, "emotion is the glue that links different people to each other." Or, let's say, a biological psychologist or a neuroscientist might say, "emotion is that which connects bodily processes to the processes of the brain." Or you might have people just in everyday use would say, "I'm really feeling emotionally close to my friend" and you'd find their two minds are linked. Differentiated people are linked to each other. So to me, the question in my mind, that was raised as a response to this issue of what is emotion, is, "could it be that the English word 'emotion' is actually referring, not to a noun, but to a process, a verb, like the mind?" In this case, that is the process of integration, the linkage of differentiated components. So what I started to do in my own mind was to transfer, or I guess transpose, every time my own head, or mouth wanted to use the word "emotion," I'd switch to "integration" and what I found was: I could do a lot more effective work with patients, with clients, if I did that. And in my teaching with students I offered them this idea that the word emotion is useless because we didn't have a

shared definition of it, and every time they wanted to use the word emotion, they'd exchange it for the concept of integration, and they too found it extremely useful. So what that brought up was: the notion that integration, this linkage of differentiated parts, is, in fact, what emotion is. Then what's emotional well-being? Then the idea was that emotional well-being then is, is an integrated system. And then I looked to find that if an integrated system is a healthy system, is there any form of science that says that's true, and the one branch of science that actually says that is a strange branch of mathematics called probability theory. And within probability theory there's a kind of approach called complexity theory. And basically the shorthand summary of all that is that when a system is capable of chaotic behavior and open, like a cloud, or a mind, or a relationship, or a brain (all examples of complex systems), they move in a self-organizational flow toward something called "maximizing complexity." That's pretty abstract and the take-home message is when it's moving in this flow, in this particular direction, it's the most flexible, adaptive, energized, and stable and has coherency to it. And all those words—stasis, flexible, adaptive, coherent, energized, and stable—so you have this stasis flow, which to me was the best definition of well-being I had ever seen. So then the theory says that when the system is not moving toward maximizing complexity, which by the way is achieved when a system is integrated, when you allow the components of a system to become differentiated and then you link them, that's how you maximize complexity, that's how you get the stasis flow. So there for the first time was a scientific grounding for why integration was a good thing and then the theory predicts that when a system is not integrated it moves to one of two directions: it moves to either chaos or it moves toward rigidity, or both.

S P: So I want to relate this to the definition you're giving about the mind: you were saying it's a relational and embodied process that regulates the flow of energy and information. And the word I'm relating to is "regulates," and so that seems very related to that sense of what you're describing right now, that the optimal flow comes in that state that you're describing.

D S: Exactly. So that the regulation of the mind could be the equivalent, in mathematics, of self-organization of a complex system. Now if that's true then let's take body therapy for example. You could make an argument that for health to occur—or let's say an unresolved trauma—for healing to occur, the differentiated information flow that happens, let's say in the muscles, or that happens around the neural networks around the intestine, or around the neural networks around the heart—so the viscera, those hollow organs, or the muscular-skeletal system—those are just two broad examples of information flow that must be integrated with the brainstem processes related to fight/flight/freeze reactions; the limbic area of the brain involved with appraisal of meaning and the creation of affect as well as relationships; and the cortical processing that can happen within self-understanding as well as plain old awareness. So in body therapy-based approaches, you could say, what we're doing is we're allowing cortical awareness to invite the information processing of the differentiated parts of the lower parts of the brain, like limbic and brainstem areas, and the extensive information processing that we know exists in the body proper. And you bring all of these together, that is, you link within awareness these differentiated information streams—in awareness—and that's what leads to healing. And that's where integration becomes our central feature, not just in defining emotion, but in actually defining a healthy system.

S P: So there's something very healing about that sense of integration if you think that in the language we use—the concept of wholeness, the concept of integrating the parts—that is an intuition that people have; that you're coming out through this neurobiological road.

D S: This interpersonal neurobiological approach, which is basically what I'm summarizing for you, I think fits with a lot of clinicians' intuition that they had long before these sciences were available. And the beautiful thing is that so many different strategies—body therapy, psychodynamic therapy, EMDR, narrative therapy—all sorts of work finds a home within interpersonal neurobiology because we're not trying to propose a new way of doing therapy—although there is a therapy approach that comes from it. It's more the idea of, "can we work together, can we collaborate together in defining the mind, defining the healthy mind," and then seeing how all the different approaches are useful in their own way—sometimes for different problems, sometimes for different types of people, sometimes for different therapists—and yet they all, I believe, are working, when they work, because they promote integration. You can make an argument that effective therapy must not only promote integration, but as it does that, it's actually promoting the growth of new neural connections in the nervous system that are integrative.

S P: So you're expanding on the notion of the plastic mind.

D S: Exactly. And in the field of neuroplasticity, that is how the brain itself actually changes in response to experience, is the bread and butter of psychotherapy because we are using our relationships and the focus of attention, for example, on the body, to create states of activation of neural firing for ourselves and the client, that then lead to neural firing patterns that are new and then lead to growth of synaptic connections that are integrative. That's what I believe therapies do when they work well.

S P: I think you made the point that some of the processing area of the brain where this integration is processed is similar, the attachment is processed as similar to the area where emotions and value, meaning, are processed.

D S: If you look at the area of, let's say, attachment research, and compare it to, let's say brain research, and then look at an independent field, let's say, mindful awareness (this whole ancient practice of being aware of what's happening in the moment and letting go of the grasping that we naturally do onto judgments and expectations—that way of being in the moment), those three areas all point to these meaning-making, self-understanding, regulatory circuits in the brain being involved. And in many ways, I think, what we do in therapy is help people find a way of relating to themselves in a healthy manner. They, in a sense, with mindful awareness, become their own best friend. And, for example, if you've had someone who's had an impairment to these domains of integration we talk about—one would be vertical integration—if you've had someone who's been living above their shoulders, and not aware of their bodily processes, that would be an impairment to vertical integration. They're having a very constricted life because of that; mental health would be constricted. So they may be prone to chaos or rigidity or both and, in fact, when you look at the DSM, it is chockfull of examples of chaos, rigidity, or both—these times when you're not in an integrated state. But for vertical integration, the impairment would be directly dealt with in body therapy because you'd be inviting someone to bring the important information streams of the body—muscular, skeletal, visceral—upward into the brainstem and limbic areas, and then ultimately integrate it especially within the right hemisphere, but the front most part of the cortex (the prefrontal cortex) and that's where you take the registration of this bodily information and literally integrate it, linking it, with other areas like self-understanding, memory, empathy, all these processes that seem to be promoted in secure attachment, mindful awareness, and even psychotherapy.

S P: So, in a way, when, as a body oriented psychotherapist, you observe somebody's arms or legs or facial expressions or body language, you are in the process of observing some side effects of this processing.

D S: Absolutely. You may get a feeling as a body therapist, I think it was James Joyce once said, "Mr. Duffy lives a short distance from his body;" this idea that people do live far away from the bodies that they inhabit. And a lot of that can happen because of trauma: if your body has been invaded, it's a way of protecting yourself from those memories, even the experience; to disconnect yourself from that information stream, and then live a life. As one of my patients once said; his life was so fraught with pain in the body, that he made a decision to never feel his body again. In many ways when you look at the difference between left hemisphere and right hemisphere, the right has an integrated map of the whole body, very somatic and affective and relational, whereas the left is very logical and literal and linear and linguistic. So if you're really going to escape the body, probably what you're doing, in part, is leaning much more on the left; of dominating your awareness with left-hemisphere processes.

S P: So as we're talking about these differences in integration, when you write about parenting from the inside out, and you write about how parents can help children get more positive development, but also you, in a more general way, emphasize collaborative processes a lot.

D S: Absolutely. I think one of the lessons of the textbook, "The Developing Mind" was just what you're saying: collaboration—which is a form of interpersonal integration. Collaboration is really at the heart of healthy relationships. So in the book, "Parenting From the Inside Out" there is a translation of the developing mind for parents to actually help them understand themselves, and become more integrated themselves, because that's what the research shows is the best predictor that they will engage in these collaborative, respectful, compassionate relationships that promote resilience in children. So it's a book designed to allow the reader, the parent, to go page by page and to promote integration in their own brains. That's how we wrote it.

S P: That collaboration is really a process where you're not just sending back the same signal, but there is some kind of a processing that has occurred.

D S: That's a really good point. Some people think of the word mirroring, especially these days with the mirror neurons and everything, and they think mirroring is the key because, and it's actually not the key, because mirroring would be just being like a Xerox machine where you just make a copy of what you're saying and send it back like a mirror. Collaboration is more getting at a contingency, that is, "I'm going to receive what you send, I'm going to make sense of it in my own mind so you exist inside of my head, but what I then give back to you as a response has part of you and part of me. You're not just getting a mirroring back. We are going forward because I've integrated what you've said into who I am and brought it back to you." So if you just look at the definition of integration, it's the linkage of differentiated parts, it's not just the linkage of identical parts or the mirroring back of identical responses. You need differentiated people. I need to be different from you. Or in a family, the individual differences need to be honored and then they can be linked. If those differences are not honored, you can have all the linkage in the world, but without differentiation you don't have integration; you just have fusion.

S P: Fusion as opposed to integration.

D S: Exactly. So sometimes people hear the word integration and they think it's the same thing as becoming homogenous. And it's just the opposite. It's where you have a heterogeneous cluster of parts, like people in a family, who can respect each others' differences, and then link. It's just like in one's own individual life: you can respect that you have a need to be immersed in your body, you have a need to be immersed in relationships, you have a need to be immersed in abstract thinking, or all these different things that we do. The idea is not to try to make it all the same. You know like, "I'm, just one continuous flow of sameness." No, we are made of heterogeneous parts, of mixed parts, and that's the essence of integration, is to honor those differences, and then link them together.

S P: It's the opposite of being a reductionist.


D S: Exactly, you embrace all of the multiplicity of everything.

S P: I wanted to see if there is something that you would like to suggest therapists who are listening to us.

D S: If this is of interest to you, there is a non-profit organization called GAINS (Global Association for Interpersonal Neurobiology Studies) and they have a wonderful newsletter that comes out a couple of times a year at mindgames.org and we have a whole series of books through Norton (The Interpersonal Neurobiology Series), and there are all these educational programs at mindsightinstitute.com, our school. Because what we're finding is that many therapists of different persuasions are finding a common home in this interpersonal neurobiology field, so we're very excited to offer the science and art of therapy for people of various backgrounds so we can actually collaborate and define the mind, define mental health, and actually outline ways of promoting these various domains of integration. I think it's a very exciting time to be in psychotherapy, working together to try to help this world be a better place.

S P: I wanted to ask you say a few words about mindsight, it's an unusual word.

D S: In looking at these processes head-on, it became apparent that we didn't have a word in English for one of the most central aspects of healthy relationships, and even healthy intrapersonal functioning, and that is the ability to see the mind itself. So we have a word for seeing someone else's mind, we call it empathy. We have a work for thinking about your own mind; we call it self-understanding or insight. So mindsight is the word that says, "what is the process, it's like a perceptual process, by which we see the mind of others and of ourselves?" And so the Mindsight Institute is really about promoting self-understanding, that insight that has been shown to be the most helpful for helping relationships grow and thrive; as well as empathy, which is what the world so desperately needs now—compassion, empathy. And so mindsight clusters those together and says, "we can work collaboratively in mental health, in the field of education to inform public policy and legislation and also just to help people and the general public understand that we can make this world an improved, more compassionate place where we widen these circles of compassion for each other and really help promote well-being."

 *This conversation was transcribed by Calin Cheznoiu.*

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