Ep. #386 - The Body Does Not Keep Score: A New and Hopeful Way for Therapeutic Recovery and Healing

Full Episode Transcript

With your host:

Susi Hately

From Pain to Possibility with Susi Hately

Introduction (00:00.00)

You are listening to From Pain To Possibility with Susi Hately. You'll hear Susi's best ideas on how to reduce or even eradicate your pain, and learn how to listen to your body when it whispers so you don't have to hear it scream. And now here's your host, Susi Hately.

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Welcome, and welcome back. I'm so glad you're here because today I'm doing something quite novel.

I'm exploring a recent paper that's been published in the Frontiers in Systems Neuroscience entitled, "The Body Does Not Keep Score: Trauma, Predictive Coding, and the Restoration of Metastability."

Normally, I don't pull papers that I've read and discuss them on the podcast, but this one is particularly interesting because it challenges a metaphor that has become incredibly common in trauma healing—that the body keeps score.

Many of you will recognize this phrase from Bessel van der Kolk's book of the same name. The authors of the paper offer a different way of understanding what is happening in the nervous system following some trauma. And it's a different understanding, which leads to a different way of thinking about how therapeutic change happens, or doesn't happen. And that's really where I want to go today. From a neuroscience lens, how does therapeutic change actually happen?

So, I'll first start off with the model from The Body Keeps Score and what that's about—the history for that. And then I'll get into what the authors are proposing, and why I think this conversation matters. And I'll share my approach and where it intersects with what the authors are proposing. And then from there, we can explore what might add to the conversation about how change actually happens.

And then I'll finish by talking about why I think this is such a hopeful way to understand healing because it reminds us that change is possible. And after all, this podcast, and really my whole MO, is help people move from pain to possibility.

Well, let's get into it.

So first off, where does "the body keeps score" come from anyway? Bessel van der Kolk wrote a book based on his years of research and popularized a model proposing that traumatic experience, or some traumatic experience, can be poorly integrated at the time it occurs. His point is that trauma—some trauma—can disrupt the brain areas involved in the normal storage and integration of incoming information, including the hippocampus and thalamus. The result, in his account, is a different quality of memory: fragmented, strongly emotional, and capable of being reactivated later. And this is where the idea of "the body keeps score" comes in.

Past trauma can continue to show up through present bodily states and reactions, even when the person isn't deliberately or consciously recalling the event. With this lens, the body carries or expresses what hasn't been adequately integrated. And this can provide an implied account of why suffering persists. It's also why this model gives substantial attention to approaches involving bodily experience: somatic experiences, interoception, movement, and other methods beyond purely verbal or cognitive therapy. The idea is that talk or thought-based therapy might not solely provide the stimulus needed for healing to occur.

Now, in my work in yoga therapy, therapeutic aspects of biomechanics, I sometimes see another step that gets added to this, which is "the body keeps the score" means "trauma lives in the body." I don't think that's actually what van der Kolk is saying. I don't think he's simply saying that some trauma gets deposited in fascia or muscle and then needs to be physically released. His point is that some traumatic experiences can remain insufficiently integrated and then continue to manifest through bodily and emotional states. Healing involves processing, integration, and restoring the person's capacity to inhabit and regulate their body.

But the key here is notice the language that's being used: storage, memory, integration. Something from the traumatic experience remaining, and then being reactivated in the present. And this matters for where we're going to go next. Because the authors of this paper are also questioning whether storage is the best way to understand what's happening at all.

So with the outline of The Body Keeps Score in place, let's move on to the paper, which really, on a bumper sticker, is: prediction rather than storage.

The authors are proposing that we understand what persists following trauma differently. Rather than thinking about some trauma as something that's been stored and is subsequently reactivated, they're looking at what's happening through the lens of prediction. The brain is continually using previous experiences to predict what is likely going to happen next. Following some trauma, the brain and nervous system can become more likely to predict danger, and those predictions can shape how incoming sensations and information are interpreted and how the system responds. Over time, those predictions can become increasingly rigid. The system gets better at expecting danger and becomes less able to update when the situation has changed. The authors describe this in terms of precision. The brain assigns greater confidence, or precision, to its danger predictions. And the more weight the system gives those predictions, the more incoming information can be interpreted through them.

So the central framing is really: some trauma may be better understood as the brain and nervous system becoming increasingly fixed in predicting danger, rather than something stored in the body that needs to be released.

Now, what's interesting about this is overall, this is not new to me. I've seen this with my clients. The NOI Institute and David Butler named this experience in many ways with their work talking about "DIMs" and "SIMs"—Danger In Me and Safety In Me. And that symptoms of pain will

escalate when there is a perceived threat or a sensation that, as experienced, feels threatening. And symptoms will go down when the symptom is more so interpreted as being something that is not danger. So this is not entirely new. It just takes it another step inward.

And this is where it leads to this next idea where the authors connect to another concept called metastability. Metastability refers to the brain's capacity to move fluidly among different, semi-stable network states. And they propose that some trauma involves a loss of this flexibility. And the system becomes more constrained, and has fewer available ways of responding. And this is where their model becomes particularly relevant to therapeutic change. Because if trauma involves rigidity and prediction and a loss of flexibility, then change requires the system to be able to update.

And this is where predictive processing becomes important.

The paper references prediction errors, or what I like to call "prediction interruption." The nervous system is continually predicting what is going to happen and comparing those predictions with incoming information. And when what happens doesn't match what was predicted, there is what they call a "prediction error"—what I like to call a "prediction interruption," right? Which ultimately is a discrepancy between prediction and what actually occurred. And that discrepancy provides information that can potentially update the prediction.

So when I'm working with somebody and they experience relief, there might be a discrepancy between what they expected and what actually happened. There's an interruption of prediction. And there's an opening when there's been that interruption, when there's been that error. There's an opening to say, "Hey, guess what? The relief you experienced? You can have that." To which they look at me with an odd look on their face and they're like, "How do you know?" And I say, "Well, I know because your body just experienced it. If you can experience relief, it means you can have relief." And that—you can see their mind starting to go. There's been an interruption. There's like, "Ooh! Maybe this can stick." I'll talk more about that in a moment.

The authors actually suggest that somatic approaches might work because of what I just said. They introduce variability and recalibrate precision through novel sensorimotor feedback. They also add that repeated experiences providing the nervous system with evidence that a physiological state previously associated with a threat can coexist with safety. The two things can be true. Which means there's a change in the interpretation of threat, and expands a repertoire of available states.

So putting this on a bumper sticker, their basic therapeutic trajectory is: rigid prediction, and then what happens is there's novel sensorimotor feedback. And that novel sensorimotor feedback provides an opportunity to recalibrate prediction. And in the recalibration of the prediction, there's an increased flexibility or metastability.

And this is where I want to continue from a moment ago to what I see clinically. Because this is where my own prediction model comes in, something I've been working with, that I've talked about on the podcast many, many, many times. It's really fundamental to the work that I do.

When people come in to see me, they've got persistent states of pain or symptoms, and they've got certain beliefs about those states. And there are a lot of yoga therapy models which address the beliefs around that state. I don't work there, because that's not my skill. My skill is from kinesiology and biomechanics. It works with the body. And I prefer that, number one, because that's my training, but also because it's very objective—we both can see.

I can't actually see someone's beliefs. I can interpret, perhaps, but I'm still taking a big, big guess. Whereas when I see a body move, I mean, it moves or it doesn't, right? I say it all the time: the arm bone moves in the socket or it doesn't; the rib cage braces or it doesn't; the leg bone moves in the socket or it doesn't. It's very, very objective. It's very, very, very clear.

So, it becomes really straightforward when someone starts to have an experience for me to show them the difference. It provides an interruption of prediction because when someone comes to me, and they have pain or other persistent type symptoms that they want to get rid of, or at least reduce, I begin by helping them move better—the whole series of "the power of pure movement." Because when people have pain, and they compensate, when I help them reduce their compensation, their pain goes away, or at least reduces.

And that can be huge, because when people compensate, that compensation, more often than not, is not in their field of awareness. People hear me say this all the time: where the pain is, is not the problem. That's why you consistently have pain! You're going after the surface symptoms, and you're not really even sure where to actually go, because it's all under your awareness and you can't change what you're not aware of. Even me simply saying that shifts or interrupts the prediction. It begins to open up the perspective of like, "Wait a second. All right, so I've been doing all the right things, I just haven't been doing the other right things because I haven't even known what to do—it's been all outside of my level of awareness."

So now I give them something super simple and they start to see, "Oh wow, look at that. My pelvis moves instead of my leg bone. I brace when I do this. My big toe is getting all involved. I'm gripping with my jaw when I move my arms. Okay, so now I'm not going to do those things, and now I'm going to move without those things. Now what happens? Holy smokes! Who knew I didn't move as big as I thought I would, but then five repetitions later, look at me going to full range without that stuff happening. And holy smokes, my pain is—wow, I feel really good! I feel light, I feel tall, I feel grounded, I feel settled. This is new!" Aha! See? That "this is new" is the novel experience. It's a result that they didn't expect. It interrupts their prediction.

And in that aha moment, I get to reinforce, "Hey, guess what? All that relief you're experiencing? You can have more of it. You know why I know? Because you already had it. Now I'm introducing: this is actually simple when we pay attention to what I know actually can work in this situation. We're seeing something working for you, we can build upon that. Now, name the

relief you're experiencing, and only move inside of that range with that relief. If you feel that relief starting to fade, then stop."

Then they look at me and say, "But how am I ever going to get my range back? How am I ever going to get strong again?" And my response is that when you go to your full range—your actual range—you're doing it with a ton of compensation and a ton of pain sensation, which is leading to, according to this paper, a certain predictive outcome. Now we have something different. Now we can work these neuromechanics because now you're not using all this accessory myofascia to do the movement pattern. Well, now you're doing what you're actually meant to be doing, and change happens because you're actually utilizing the structures designed to move the limb in the way that we're wanting to move it. So now, other tissue that's not meant to be involved doesn't have to be, doesn't have to get pooped out, it doesn't have to then compensate even further. Movement becomes smoother, more coordinated, tension patterns go down because you're not using tissue that wasn't supposed to be involved anyway.

Now they're gaining confidence. Now they can see what to do for themselves based off of the awareness, and it's even more novel for them.

So, there's a number of layers here where there's been a prediction interruption, not only in the movement I'm offering, but in the whole premise that in persistent states of pain, so often the issue is not the issue, it's—where the pain is, is not the problem. The problem lies under your awareness, so let's start there. And let me start small so we can really recognize objectively what's going on. And then, with the relief you experience, let me build upon that.

Not many people speak this way, so that in and of itself is novel. And then if you ever get an experience to work with me, whether it's in a group setting or whether it's one-on-one, one of the things that people will say all the time is they get so inspired by the way that I raise the pom-poms and get super excited when people are reducing pain. Like, who does that? Who out there does that? Like, truly! But I am! I get so pumped when people become aware because, again, the reason why so many people remain in pain is because they're not aware of what actually to change, even if they knew.

So, this is the intersection with the paper. Is there's so many things I'm offering that are novel, that interrupt pattern, that interrupt the prediction, and it gives people the opportunity to move away from a binary thought process of pain or relief. They can feel it in their body, and they can name it with their brain. It's not about positive thinking, it's not about making things up. It's integrating the brain and the body.

Now, there is another piece here, though. And I think the paper is actually missing something. And granted, it's not their line of work, but it was something I noticed as I read it.

When I put what I see clinically beside what the authors are proposing, there's a piece that the paper doesn't really develop. While the paper does get us to novel sensorimotor feedback and the possibility of updating, it doesn't really get into the clinical mechanics of that. Because in my

work, simply producing a different movement result isn't the whole process. There's the question of how we create the different sensorimotor feedback in the first place. I'm not merely asking someone to experience their body. I'm changing the variables: load, range, position, compensation, where they're attending their awareness. And then we get to observe what changes. There's a biomechanical component to this.

And, there's another piece, too: there's the person's perception of what is happening. And that's really where my "yellow light" work becomes relevant. When I talk about yellow lights or whispers—"listen to the whispers so you don't have to hear the screams," "discover the yellow lights so you don't have to be in the reds"—really it comes to: how or can someone distinguish effort from strain? Can they distinguish movement at the hip from compensation through the pelvis or the ribs or the jaw? Can they notice the first moment gripping begins? Can they notice when breathing becomes restricted, or when their steadiness changes? This is all greater discernment. And as someone's interoceptive and proprioceptive awareness becomes more granular, they can perceive more of what's actually occurring. Which also means that when something changes, there's more available for them to notice. They can really tune into what's actually different. They're no longer simply answering, "Uh, yeah, I'm better. I'm fine. Yep, things are okay." They're better able to name the new pattern output. They're better able at naming something concrete that they can recognize and subsequently track.

So while the paper emphasizes that our systems need new evidence as part of this pattern interruption, my way of thinking raises two additional questions: How do we deliberately create conditions for that new evidence to arise, or to be apparent, or to notice it? And what enables someone to perceive and discriminate or discern what is occurring with enough granularity for it to matter?

And that to me really is where this paper and my work, my approach, intersect in a very interesting way. Because the paper proposes that healing involves updating predictions through new evidence, and I'm really interested with how we can create different sensorimotor experiences, how a person perceives what happens, and how their capacity to discern what's occurring becomes increasingly refined.

I'm not saying that this paper validates the way that I work. The reality is, is the way that I work has evolved out of the evidence of my clients and what has worked for them, beginning way back when I worked at a chronic pain center where the focus was getting people back to work, not out of pain. That was just the model of the day, and it never felt right. Pain always struck me as being a messenger. So what does that messenger have to say? And why is it that we're so afraid of it? And that really has gotten me curious.

And ultimately, just like I did in one of my classes today, was: okay, pain is an output. Relief is an output. And while it might be awful and terrible and an F-bombing experience to have pain, and it might feel awesome and be like, "Yes! I'm on the other side" with relief, the reality is is both are pattern outputs when it comes to persistency of symptoms. And if we can continue to help improve our ability to discern and to retrain, we can have more pattern outputs leading to

relief and having relief being more long-standing—listening to the yellow lights, listening to the whispers, and gaining more and more traction and endurance with that.

So again, the paper is not validating, but it's a really interesting through-line or set of thoughts alongside what I'm already doing clinically.

Overall, what I find so interesting about bringing these two ideas together is there is a biomechanical component to change, there's an interoceptive and proprioceptive component to change, and there's a learning component. None of this requires us to positive think our way into change—goodness, no. We're not making stuff up. We're not telling ourselves that something has changed when it hasn't. We're actually working with what has actually happened with a somatic awareness that has been grown and developed, with what can actually be perceived, and with the evidence that's actually there. And from there, we can build. It's the whole essence behind From Pain to Possibility.

A pattern is not necessarily permanent. A prediction is not necessarily permanent. And the return of an old pattern doesn't erase the emergence of a new one. Old patterns may return—of course they may, they have history, they have repetition, they have grooveness! And the new pattern is new! But now there's something else to build from. Not through positive thinking, not from convincing ourselves that we're different, but through experience and evidence, through movement, through breathing, through awareness, through becoming increasingly discerning about what's actually occurring and building from there.

The paper doesn't give us a final word on how therapeutic change happens. The authors themselves are proposing a model that still needs further investigation. But—or and—it gives us another way to think about the process, not simply as something stored that needs to be released, but as a dynamic system capable of receiving new information, updating, and becoming more flexible. And when I bring that together with what I see clinically, then possibility becomes very practical. And something different can happen. We become increasingly able to perceive what's happened, and we can build from now what's available. And now that, to me, is the movement from pain to possibility.

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If this is interesting to you, and you want to dig into this—you're a yoga teacher, you're over 50, you've got a client base, and you're picking up what I'm putting down, what I'm sharing makes sense, and you want to dig into my approach, my model, working with your own clientele alongside business training to really make this a solid retirement income opportunity—come join me this October for the Therapeutic Yoga Intensive. You can read more over at **functionalsynergy.com/intensive**.

We follow along with the rest of the certification program. The Intensive is the first step, and the rest of that program begins in January 2027. But you've got to start with the Intensive first. I'd love to see you there.

Until next time.