Reflections on the Somatic Core of Ideation

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This article is a condensed version of a virtual 3 hour live conversation on September 4th 2025 between Veronika Mayerboeck, Kristina Höök and Alé Duarte, three experts from distinct yet interrelated fields - Spatial Design, Interaction Design and Somatic Experiencing.
The discussion centers on the somatic core of ideation within creative processes, drawing on diverse perspectives from Somaesthetics, Embodied Design Theory, Interaction Design and Design Education, Embodied Learning, Child Development and Cognitive Science.

Taking the role of the Author, Veronika Mayerböck initiated this exchange having met both interviewés before already in person. This gave inspiration to set up a virtual discussion in the style of an "essayistic journey", aiming to extrapolate and identify the various somatic layers of ideation processes. Grounded in the participants' pedagogical and academic expertise in facilitating ideation there is a central consensus on the importance of felt experience and the role of the body in creational processes. Headings embedded in the text structure the interview along the topics discussed throughout the conversation which has been facilitated by:

Kristina Höök (Interviewee), professor of Interaction Design at KTH Stockholm. Her research spans affective interaction, somaesthetic design, the Internet of Things, and design methodologies. With Soma Design, she promotes a slower, body-centered design process that foregrounds perception and human values. Her influential work has shifted Interaction Design toward more experiential, embodied, and sustainable practices across the whole design and use cycle.

Alé Duarte (Interviewee), somatic educator, certified in Somatic Experiencing and Rolfing, and creator of the KidSoma Method—a body-based framework supporting children's self-regulation, ideation, and expression. With over 30 years of experience in trauma-informed education, embodied paedagogy, and neuro-affective development, he has worked in 30+ countries. His workshops foster physiological attunement, relational coherence, and dynamic

group engagement.

Veronika Mayerböck (author), architect/ lighting designer, dancer and educator. Across her works in Media Art, Interaction Design and Lighting, she researches the interplay of space, light and movement through the lens of the sensing body. Her Sensing Space method fosters ideation through perceptive resonance and kinesthetic awareness. It has proven effective in 10+years in Architecture/Design education across Europe.

The KidSoma Method

Supporting self-regulation in children and adults

Veronika Mayerboeck:
Dear Alé - would you like to begin our conversation with an introduction about your professional background and expertise? Of particular interest would be how your methodology and approach relates to creational processes on a deeper level.

Alé Duarte:
Of course. First of all, thank you for inviting me. So, to give you a bit of background — I worked for many years as a teacher, and then I started to get into body-oriented therapies like Rolfing, which I practiced for about twenty years. Later, I met Peter Levine and began working with Somatic Experiencing (SE). Before that, I used to perceive the body mostly in terms of shape and form. But through SE, I began to understand the body more in its "energetic form" — how it reacts in relation to a situation or a moment, and how we can distinguish between what happens before and after that moment. This time-sensitive awareness of how our body responds changed a lot in how I see things.

Later, I was invited to work with children in Thailand after the tsunami, and that experience brought everything together — my background as a teacher, my work with Rolfing, and Somatic Experiencing. That became the foundation for what I now call the *KidSoma* method (Duarte, n.d.). But I don't really see it as a method, more as a body of work. At its core, the Kid Soma Method looks at the child not only through their actions, but also through the body — its shape, its form, and its energetic functioning. The focus is on supporting self-regulation in both children and adults — leading them in a balanced state of activity, not just to be calm or quiet.

When I speak about self-regulation, I mean being able to do something without draining your own resources. For example, if I'm running or playing ping pong, I'm self-regulating — because as I'm moving, my body maintains balance, it knows how to use and sustain energy. The idea is to keep this balance within the moment of the task. If the goal is at the end of the run, then self-regulation is the relaxation that comes afterward. But if the task starts before the run, self-regulation means tolerating the anxiety or uncertainty that comes with starting — and still finding the strength to move forward.

CYCLES OF IDEATION

…the importance of "owning" your ideas or how to help a child to have ideas

Alé Duarte:
If I had to define the baseline of my work, I'd say it's about discovering *how we see a task*. A task can be anything — eating, showering, sleeping — each with a beginning, middle, and end.

Within that arch, experience becomes more organized through the body's own dynamics.

My method combines different techniques and tools to support this process. When parents visit my office with their children, I usually begin by playing. Through play, I observe key moments in how the child interacts — small signs of hesitation or confusion that reveal whether something is blocked. Even a pause like "I don't know if I can start" already exposes a question behind it: "Do I really want this?" or "Is this what my mom wants?" Decision-making already becomes blurry for the child. Together, we begin to clarify intention. When a child says, "My intention is to do this," I respond, "Great, let's try and see what happens." That small act empowers them to take ownership and responsibility.

So when I think of ideation, it's very simple: How can I help a child to have their own ideas? Whether that idea is to play tag, to watch something, or even to avoid something — each still follows the same arch of beginning, middle, and end.

Today, this natural cycle of ideation is breaking down. Phones and screens provoke fast, reactive play that leaves no time for reflection. Repetition of this passivity suppresses genuine ideas and creates doubt — "Is this really my idea?" — since most inspiration now comes from digital content rather than personal experience.

So my role is to help them return to the very start of an idea — to recognize and claim it: "This is my idea, and I like it." From there, we develop it step by step through the full arch of experience. And again and again, it's striking how much disorganized behavior must be cleared before an idea can truly grow.

I am thinking about a teenager who could only communicate if the conversation was related to a videogame he was playing otherwise he would become aggressive. So I realized this boy simply had no more repertoire for engagement — not in the sense of lacking intelligence or cleverness, but in his *ability to own any of his ideas or beliefs about himself*. He could not locate where his impulses or choices came from. In this sense, I would say that Generation Z, growing up so early with computers, is not repressed in their ideation compared to earlier generations, but rather confronted with a strong automatism of ideas — ideas that arise almost by default, before genuine reflection or ownership can occur.

Veronika Mayerboeck:

I really like your expression of "*owning your idea.*" Referring to your earlier thoughts on bodily expression and energetic response, it seems you observe how a child approaches something. Would you say that owning one's ideas is connected to a self-regulated sense of balance or calm? How would you describe the state in which someone can "perfectly own" their ideas ?

Alé Duarte:

That's a great question. Every idea serves a purpose, often *tied to an inner need* — for instance, self-regulation or the need to be cared for. A child might, for example, choose to play doctor to meet that need. Through play, the child receives what was missing, and the idea becomes affirmed: "That's a great idea."

Veronika Mayerboeck:

So the fulfillment of an idea depends on fulfilling the need behind it. But to follow an idea also requires trust — trust in the idea itself, and in one's own ability to engage with the environment?

Alé Duarte:

Let's say I have a need. My body responds and orients me toward actions or tasks associated with it, often unconsciously. For example, someone feeling alone might seek belonging. One person might pursue a luxury item to connect with a community, while another might start a walking or climbing group. Both are addressing the same basic need, but without consciously recognizing it. Their decisions operate on an automatized level, providing a sense of fulfillment — "Yes, this is what I want to do" — yet at a deeper level, both are responding to the same core need: belonging, care, or fear of abandonment. How these needs are interpreted is shaped by individual culture and social environment.

THE MYSTERIOUS MESSENGER

… on the relation between inner needs, unconscious actions and resulting tasks

Alé Duarte:

To outline this unconscious aspect and help children become more aware of their needs, I created specific characters within my methodology. One of these is the mysterious messenger. He comes and secretly places ideas into the "idea box", like a post office or a personal mailbox. The messenger remains mysterious because no one knows who or what introduced the note—it could say "hungry" or "food." In the end, it is the recipients themselves who interpret that initial message and transform it into an action, such as deciding to bake a cake.

This is just one translation of a need into what we actually do—there are infinite possibilities. Many children—and adults—get lost in this process because they end up fulfilling needs that may not truly belong to them. Perhaps the idea comes from an influencer they watch on YouTube, or from parental expectations, rather than arising from their own authentic sense of need.

Veronika Mayerboeck:

Thank you for that. I feel this "idea box" is where we work with young architects or designers trying to re-engage students into this quality of observation, identifying needs and seeking a solution for that need, while being honest about this need. Often, design just becomes a personal statement, "I liked it that way," similar to the gadget industry where technological development happens often simply "because we can do it," without reflecting on the underlying purpose. Culture and societal pressures strongly shape whether individuals claim and act on their own ideas.

Alé Duarte:

Exactly. Owning an idea is complex. Sometimes it's difficult even to recognize one's own idea. For instance, someone may dislike their job but feel trapped; the suppressed idea—of what they truly want—remains active, generating frustration.

Veronika Mayerboeck:

I would add here, how important it might be to have the ability to listen, hear and verbalize ideas at some point, even supressed ones.

Alé Duarte:

Yes. Listening from Outside helps enable a person to talk about a suppressed idea, giving them space to explore whether the idea is actionable. Quite often, suppressed ideas are already constructed in mind. So verbalizing is one step forward, rather than keeping it muffled inside your system, within the body. Another person supports construction and imagination, key is moving the idea forward along its arch—either integrating it if it dies, or realizing it fully if it leads somewhere. Understanding these suppressed ideas is crucial: are they realistic, or are they childish impulses I can easily give up?

Veronika Mayerboeck:

Isn't this precisely the point where the social or societal dimension comes into play, given that we are inherently social beings? Perhaps the early mother-child connection is particularly relevant, as a child who learns early to exchange or verbalize ideas, experiences either support or suppression of their own ideas. How significant, then, is the role of social interaction, empathy, emotions, and bonding? And is there a direct connection between these social experiences and self-regulation?

Alé Duarte:

Let's imagine a scenario where someone has social support and experiences genuine social bonding yet lacks discernment about what they truly want. In such cases, a decisions can easily be dragged by aspects that do not belong to you. A person may grow up in a loving, accepting, empathetic environment, but still never advances toward what they genuinely desire. Often, social norms can suppress one's own ideas, creating a subtle suffocation of personal initiative.

It is therefore crucial to cultivate the ability to distinguish one's own ideas from those of others. This skill rarely develops in isolation—it typically emerges through external support, from someone who can facilitate and help reflect on your ideas. I mean understanding deeply: "Why do I like what I like? Why do I want what I want?" And then considering how life might change if you allow one idea to move forward while containing another.

RELATING SENSE-MAKING AND MOTOR MEMORY

…the nervous system as a container of (un)realized decisions

Veronika Mayerboeck:

Could you outline a practice from one of your workshops? I recall an exercise on conscious decision-making for adults, where we identified intuitive actions like going for a walk, eating, or finishing work, and then deliberately postponed or reordered them to observe the effect on our body.

Alé Duarte:

Yes, I remember. Well, let me give you an even simpler example: imagine I am in a room, looking around for anything that sparks my curiosity. I notice a lamp across the room. I focus on it, observing its shape and wondering how it might feel. I feel the urge to approach and touch it. But as soon as I start to move I deviate to the door knob instead. At that moment, I observe what has happened: much of the initial energy of attraction remains stored in my system, still active in my soma, in my body, in my nervous system. The effect can be so strong that I find myself repeatedly turning my neck toward that lamp, drawn by the lingering impulse.

Veronika Mayerboeck:
So you say the soma is reacting accordingly to this first impulse to action. Would you say these first impulses are always related to movement in space, underlining our "gestural approach" to what we intend to do next when we point and orient in space?

Alé Duarte:
Yes. When we are drawn to something, our body prepares for action. Internally, we "see" ourselves reaching the target, whether a lamp or a castle. If this moment is interrupted, the readiness to act is redirected, but the core of that dynamic remains, like a half-constructed castle or lamp still existing within us.

Veronika Mayerboeck:
Interesting that you use "construction"—very architectural.

Alé Duarte:
Exactly. You can compare it with a building with many rooms you intend to build and fill with furniture. And then these "constructions" are not realized and left half-way in your psyche like the perfect chair you never bought. They leave an energetic experience.

Veronika Mayerboeck:
You call it some leftover "energetic experience", I think I would call it as well some sort of "simulation". Your earlier description of bodily orientation towards the lamp made the importance of bodily movement, gestural orientation and desire for exploration very clear to me. So I would like to open up some perspectives from cognitive science, looking at the relation between space and our understanding of the world we are in. Tracing how this "idea of space" is evolving in early child development, we can say space is "supra-modal", meaning that all senses contribute to our orientation and knowledge of space. Which means we are "learning" through movement, so there is a tight relation between development of the brain and movement, meaning our cognition is shaped through a form of "enactive practice" that allows movement simulation and abstraction. Or as Engel states it "cognition [...] is grounded in a prerational understanding of the world that is based on sensorimotor acquisition of real-life situations." (Engel 2014, p. 219)

Returning to developmental psychology, force embodiment is a foundational subcategory for the development of language and cognition. To outline that I would like to shortly sketch a beautiful experiment from developmental psychologist Esther Thelen. She was researching infant motor development. In the so called "Leg kicking experiment" a toddler was placed underneath a baby mobile with strings attached to some limbs. The child then was observed in its way to learn through movement interaction to develop variations activating the pendant mobile by kicking limbs.

According to Thelen & Smith (1994) humans develop already at a very young age of about 3 months a differentiated motor memory within dynamic learning processes and begin to distinguish and generalize various types of action solutions for specific environmental affordances and assign those into different categories. So, the experimentally tested, experienced, and applied bodily force serves as basis for abstraction. Within this process of dynamic learning, motor memory becomes central to recall and use a specific action solution so that an infant of 3

years for example already connects the sight of a mobile to a learned motor response while being able to adapt to real life variability and diversity of experience.

Following Thelen (1995) this kind of abstraction lays ground for simulation of movement, thinking to act, planning to act, or talking about actions. So, in summary the Simulation of movement serves as bodily foundation to emergent higher order abstractions.

And I think it's very interesting to relate motor memory and your mentioned response of the soma when the arch of construction is cut.

Alé Duarte:

This is a good example of the process of construction. Not necessary about the initial idea, but about the middle of the arch— where these small movements of the toddler initiate the process of creating connections and derive relations. It is the beginning of a constructive development , where things are put together and make sense somehow.

SUPPORTING MEANINGFUL ACTION

…the importance of your ideas being seen and responded with value

Veronika Mayerboeck:

So to be aware about these processes might support a smoother transition between a first spark to some kind of outcome?

Alé Duarte:

Yes. Recognition of where you are in this arch is crucial. If this is not recognized correctly from outside that most likely gonna mess up the construction process.

Veronika Mayerboeck:

So that means we need the social echo, the social resonance as a mirror, the "being seen" through the lens of another human being?

Alé Duarte:

Exactly. Imagine a child with very low self-esteem who doesn't believe in their own ideas. If we engage them in a task, their internal model engages reinforcing beliefs of failure messaging " I am a loser" or wanting to give up. But as an external witness, you can pause this spiral, guiding the child back to the decision point that sparked the insecurity. By offering new correlations and perspectives, the child can gain reaffirming insights. Without this witness, the meaning of their actions may vanish, and negative self-judgment can persist. It's like someone unnoticed in a village who then moves to a city and suddenly experiences validation. The difference in perceived reality is profound—and this story repeats countless times.

Veronika Mayerboeck:

So this social mirroring—how does it impact the body? I personally observed in somatic experiencing that sometimes therapists are mirroring my body posture or movement and that this has an effect in my body.

But referring to the mentioned very introvert, shy child who believes "I cannot do it": So how would that affect the soma, the posture, the inner body organization, if you receive such a

valuable feedback?

Alé Duarte:

The feedback will already give a sense of validation for the child and impact inner and outer orientation for example. So that means where the child is pointing at, makes sense, it will be articulated not aimless.

As this unfolds, physiologically, the child starts to focus more and develop genuine interest. Dopamine cycles become activated, and endorphins follow, producing a sense of reward: "That was so good. People really like me. Wow, I cannot believe it." In this way, the child experiences affirmation of self and action—they like themselves, and others appreciate what they do. This creates a meaningful connection between identity and activity.

SENSING SPACE

…design education across bodily exploration and social interaction

Veronika Mayerboeck:

I like how you emphasized play and iterative playfulness — it brings lightness, makes ideas visible, and opens space for meaningful feedback as the process of creation unfolds.

I use similar principles in my Sensing Space methodology (Mayerboeck 2022, 2024) when working with adult students. In my design workshops, I combine key elements that foster a state of flow through bodily exploration and social interaction. Participants engage in collaborative and individual kinaesthetic activities — for instance, a blindfolded guiding exercise in pairs, where one leads and the other follows, then they switch roles to experience both perspectives. I've noticed that students who go through this initial somatic phase create more grounded and insightful design outcomes. Their shared physical and sensory experiences strengthen both their creative process and their sense of co-creation.

Referring to what you said earlier, Alé, I'd describe that shared experience as a state of witnessing and bonding, using your terminology.

I notice a strong sense of bonding among participants through this experiential way of reflecting on their physical environment. I'd also add trust — since these practices of witnessing, sharing, and reflecting together happen on a very basic human level. We all have a body, and that allows us to communicate beyond cultural or professional differences. Speaking from lived experience creates common ground and supports a sustained sense of playful ease in ideation. Even as the workshop progresses into more complex design tasks, students tend to remain in that shared, fluid flow of action.

I believe this preparatory phase helps participants develop a self-regulated state of awareness, where they can sense and explore their own actions in direct response to another person — a kind of embodied preparation. This open, trusting atmosphere forms the foundation that allows them to truly own their ideas later on, moving with confidence through the ups and downs of ideation as tasks become more complex. Once this organic, collaborative flow is established, the level of complexity can increase quickly. For me, the process follows a clear order: *share – trust – own – ideate – construct.*

SOMA DESIGN

… developing a skill for aesthetic through the senses

This is where I'd like to bring Kia into the conversation. I'd ask you to share your perspective because I see many parallels with your approach to soma design, and with what I understand of your philosophy- that the soma, rather than the brain alone, holds the core of our wisdom.

Kristina Höök:

I work in a completely different field, but I recognize a lot of what you've been discussing with Alé, and I see echoes of it in my work and in your practice, Veronika. I work in interaction design, which means shaping digital technology into forms that users can engage with—to accomplish tasks, enjoy themselves, or otherwise interact meaningfully.

You're right, Alé, a lot of designs today take away the end user's initiative, limit body awareness, and reduce creativity. But that doesn't have to be the case. We can design technology differently. For a long time, I've been working with technology strapped close to the body—sensors, actuators, but also devices that cover the whole body. And then the question becomes: what happens when you do that? What do you want to achieve? What are the possibilities? Why would you strap technology onto the body?

This led me to look for a framework, a way of thinking about design ideals—reasons for doing this kind of work. And that's where I found the theory of somaesthetics by Shusterman. To unpack this: the notion of soma refers to —as you've already said— the interlinked processes of body, emotion, and thinking: a subjectivity, a way of being in the world with your whole self. And somaesthetics, according to Shusterman (2000), is the idea that this soma can change. I can change my way of being in the world, and if I want, I can change it toward richer experience. Aesthetic skill is something I can develop through all my senses. I'm not limited to educating my mind or ways of thinking; I can also cultivate my dancing, or train myself through all the senses. Why do this? To have richer experiences—and, as Alé mentioned, to be creative, to develop an identity where I'm allowed to shape my own ideas.

From this perspective, I developed my approach to soma design, building on these ideas as well as inspirations from George Khut (2006) and others. It can be described as follows:

"Soma design allows us to 'examine' and improve on connections among sensation, feeling, emotion, and subjective understanding and values […] It concerns the orchestration of the "whole," emptying materials of all their potential and thereby providing fertile grounds for meaning-making." (Hook 2018, 12f)

Many of the ideas you mentioned are present here, Alé. When you notice your body turning toward the lamp and recognize the link between sensation, feeling, and the impulse to explore, you create fertile ground for meaning-making—something technology can also support. As you described, Alé, in therapy or interaction with a child, or as Veronika noted between two people, we can build shared experiences. Coming from the technology world, I ask: how might technology enhance that, rather than take initiative away?

Another inspiration I took from Shusterman was his interest in Moshe Feldenkrais and his somatic pedagogy. I particularly love the idea that for everything we do—sitting, walking, or any other action—we should do it in a way, to say it in Feldenkrais' own words:

"… to expand the boundaries of the possible: to turn the impossible into the possible, the difficult into the easy, and the easy into the pleasant. For only those activities that are easy and pleasant will become part of a man's habitual life and will serve him at all times." (Feldenkrais 1977, p. 57)

A positive experience with our engagements with the world is crucial. So this is what we're trying to do when we build our systems. We want to help scaffold an experience that ends in a positive outcome, and that might be some increased body awareness of your pelvic floor muscle, as we talked about before, or it can be a system for figuring out how to slow down so that you can handle your stress issues. Or even a system that let's you bodily feel somebody else's way of singing and thereby expanding your appreciation of opera, singing, or whatever.

As a designer of technologies, I'm not so interested in replicating human-human interaction. Like, you can give me a hug, that's lovely! But I don't need a robot to hug me. I'm not interested in that. What interests me is touching and feeling technological materials and exploring their aesthetic potential. Like an artist, I want to know my materials: if you paint, you learn what oil and color can do. But it's also about understanding how this connects to emotion, sensation, and body. Only when all of that comes together can creation truly happen.

SENSEMAKING WITH MATERIALS

… defamiliarization of the habitual

Veronika Mayerböck:
Can you tell something about strategies you are using in soma design?

Kristina Höök:
When the two of you talked about coming up with novel ideas or novel ways of doing stuff you mentioned important concepts such as playfulness, awareness, trust, and sharing, but also about habits. One of the key things we do in soma design is, we try to figure out what is already habitual to you, and work with that. That might also be a negative habit, for example that you always walk in one way, and that harms your body in some bad way. Then we deliberately do the non-habitual, making the familiar strange. For example, if you fold your arms one way and then switch, you realize, *oh, I can do it differently*. This act of *defamiliarizing* brings to the surface patterns so deeply embedded we can't easily think or talk about them—and allows us to change them.

Another example involves cultural norms. When I give talks, I sometimes ask the women in the audience to "manspread," to sit with their legs apart. They usually try it, but after a short while, almost everyone closes their legs again. It feels exposing, uncomfortable—because the habit of sitting modestly is so deeply ingrained.

And then the question becomes: do you design for the norm, or for allowing women to sit however they want? It depends on your design goals. But if you're unaware of how deeply such

norms are embedded—how strong that feeling of embarrassment is—you can't design with or against them. That's what we do in soma design: we engage with *estrangement*, making things strange, moving beyond the habitual—both in what technology can do and in how our bodies, movements, and emotions respond.

Veronika Mayerboeck:

When you speak about defamiliarization and breaking habits—could it be that technology, or interaction design more generally, already plays the role of the previously mentioned "external witness"? Serving us slow down, sense our bodies, and become more aware? Maybe that's a core aspect of any meaningful interaction design: to provide that reflective feedback, regardless of whether the goal is to help us breathe deeper or do something entirely different. Would you say that this capacity for feedback and self-awareness is a baseline requirement for good interaction design?

Kristina Höök:

Both harmful and empowering designs—those that limit us and those that inspire creativity—are built on the same foundation. As interaction designers working with digital or haptic technologies, we orchestrate how users can behave. We build movements of the body, the mind, and emotion into the design of whatever artifact we create. The problem arises when those built-in movements become restrictive—when all initiative rests with the system and there's no space for personal creativity or variation. Many digital designs, for instance, neglect the body entirely, confining us to narrow patterns of interaction. This limits not just movement but also our capacity for aesthetic appreciation and self-awareness. I think we can do better. As interaction designers, we can stay open to shaping how these orchestrated experiences unfold—allowing for greater freedom and richer connections among sensation, feeling, emotion, and subjective understanding. That's where I want to go.

Alé Duarte:

Could you say a bit more about this?

Kristina Höök:

It has both to do with me, the designer, and the end user, where we want them to examine and improve on the connection between sensation, feeling, emotion, and subjective understanding and values. But it's also about how we can engage with the technology and orchestrate it such that we use all of its potential, I would call it, aesthetic potential of the materials, to create meaning. That might sound a bit abstract, so let me give a simple example. We designed a lamp – **the breathing lamp** - that you can lie beneath and which registers your breathing and responds by dimming in sync with your inhale and exhale. Nothing more, just a quiet dialogue between your body and the light.

Alé Duarte:

Oh, amazing. It's actually lovely.

Kristina Höök:

And we worked really hard with the subtleness of this, so that you can lay there with your eyes closed, and it influences you, even if you don't think about it. And then underneath you, we have this mat with heat elements, this was work we did with IKEA, so this is why it's big

furniture stuff. We tried this out in a long-term study, and found that it had profound effects on their breathing and body awareness. One 13-year-old used the experience to calm herself before a school talk. Another participant was constantly stressed but couldn't recognize it—no feedback from friends or colleagues made a difference, and even we were concerned for her well-being. Through engaging with the breathing lamp, she gradually learned to notice her inner signals, slow down, and find better balance. This awareness rippled through her life: she began changing how she walked, how she structured her days, and eventually even decided to move from Stockholm city center to a quieter suburb. But it's not meditation—it's simply a gentle way of reconnecting with your breath and body.

We also built a wearable fibre system with shape-changing elements worn on the body now, this might seem a bit weird or even scary. It's a sort of corset around the ribs, belly, and spine—that contract and expand to let the audience feel a singer's movements, translating her muscular and breathing patterns into a haptic score that creates a ghostly reminder of what kind of muscles are used to perform.

We also worked on what we called the ***pelvic chair***. It was designed for women who are told after childbirth to strengthen their pelvic floor muscles—but often don't know exactly where those muscles are. The chair guides you into the right posture by inflating behind your lower back and between your legs, positioning the pelvis correctly. First, the seat surface relaxes, prompting most users to release their pelvic floor, which we tend to keep unconsciously tense much of the time. Then it begins to gently poke at precise points in the pelvis, helping you locate and feel how to move the muscle—forward, backward, or side to side. It became a subtle, bodily way of learning awareness and control.

Perhaps you can see from these examples that what we're trying to do is scaffold an experience: guiding people to engage in a particular way so they can increase body awareness, develop new abilities, and expand their sense of what's possible—not just physically, but also emotionally and intellectually.

THE ABILITY OF DISCERNMENT IN DESIGN

…enabling innovative sensemaking through estrangement

Veronika Mayerboeck:
Can I ask two things? First, you mentioned defamiliarization – do you first have to sense what's different, to become aware of what's familiar – or the other way round? Second, how do you engage with somatic experience, to uncover the aesthetic or artistic potential when designing the pelvic floor chair or the breathing lamp?

Kristina Höök:
So what's the pattern of ideation in design? Estrangement has to align with the goals of your work. Recently, we wanted to design around attunement—how people connect, following theories like Daniel Stern's (Stern, 1985). But first, we had to figure out how to attune with each other. We spent hours together in silence, out in the forest, without any purpose, task, or goal—just being and noticing.

Veronika Mayerboeck:
That sounds like a shamanic vision quest - though not in isolation, but together. *(laughs)*

Kristina Höök:
It was fascinating because our group of six came from very different places—Chile, Greece, and so on—and had different relationships to nature. But what is nature? There's no pristine nature, nor a single way for humans to be in it; it's all entangled with culture, shaped by what we choose to notice or ignore. I'm Swedish, and we went to a Swedish forest in the middle of winter—it was bloody cold —and I noticed layers of detail the others didn't, which isn't strange, just part of my perspective. For example, many Swedish forests are planted for timber. When I pointed this out, they were surprised, and started to note things they did not before, for example that all trees are spaced.

But anyway, the *attunement to one another*, the intercorporeal understanding, means that if you remove language and symbolic reasoning, you defamiliarize certain processes and other aspects come to the fore. Much of this connects to what Alé mentioned earlier about children and the ways we behaved as kids. So what we ended up doing were playful activities—having fun, skipping along the road, or handing over a stick and saying, "This is a magical wand I'm giving you"; doing snow angels, all the kinds of things we did as children.

Many Feldenkrais exercises are similar—they defamiliarize habitual, narrow movement patterns by returning you to a childlike movement repertoire. One exercise, for example, has you lie on your back, hold your feet, and roll back and forth like a baby. It's so much fun—you rarely do that as an adult—but when you do, it reminds your entire nervous system of all the possible movements available to you.

Veronika Mayerboeck:
What's interesting—and a parallel to what Alé described and also to my work—is that returning to these early cycles of exploration—trying something, skipping it, doing something else, sharing all those experiences—can dehabitualize your usual patterns, even your conceptual patterns. But the tool is the body. From a lighting perspective, you have to train observational skills, meaning to develop the ability to have discernment for light and shadow. A good lighting designer can translate any visual environment into the actions occurring within it. It's a refined practice of sitting, observing, and identifying the needs of the situation. And this takes time …

Kristina Höök:
Yes, this takes time! As a designer, the way you change yourself is that you try to become more sensitive to whatever it is that you're trying to design for. It might be light, that you're designing with, it might be shadows. And if you are more sensitized to shadows, then suddenly you see shadows everywhere, and you use shadows in your design work.

We also recently worked with chronic pain. In our group of designers, each of us had some experience with pain—avoiding movements that hurt, suppressing it, or even integrating it into our self-identity, thinking, "I'm a weak person because of this." The body keeps the score, right? The challenge was learning to engage with pain in new ways.

Veronika Mayerboeck:

Indeed, the body remembers pain—even after it's gone, we may avoid certain movements, carry specific body patterns, or maintain limiting self-images. This expectation of pain can disconnect us from the outside world. Reorienting toward the external environment, staying between body awareness and the outside, can create a space of possibilities, where we can question boundaries shaped by habits, patterns, or past experiences.

In general, would you say that body awareness serves as a foundation for novel sense-making—observing, creating, or at least remaining open to new possibilities?

Kristina Höök:

Body awareness is endless, in my view—I can keep improving and changing throughout my whole life. Of course, it can sometimes touch on trauma—by accident, you might engage someone in an activity or touch a part of their body where they have pain. It's not always comfortable, but encountering the unexpected is also part of the richness of human experience.

THE IMPORTANCE OF MONSTROUS EXPERIENCES

… challenging the simple scale of pleasant–unpleasant

Veronika Mayerboeck:

I'd like to connect this to Alé, regarding the trauma-informed approaches you use with clients or in children's work. I see a strong parallel between trauma work and the defamiliarization of habits. When trauma is triggered, bodily sensations intensify—different flows arise in the body and emotions, and this can also delimit us. But you can also learn to acknowledge these as resources and expand that awareness to other sensations. Would you say there's a parallel or overlap here?

Alé Duarte:

Yes, the body is central, but I think it's like approaching the same thing from different ends. From one side, you come in working with body awareness for design; from the other, we're coming from trauma. Trauma triggers present red flags, showing limits or very constrained body awareness at times.

Veronika Mayerboeck:

But in somatic trauma work, you learn to expand body awareness intentionally, using it as an active tool: traveling within the body, moving between inward and outward orientations, and learning to own how you "keep the score".

Kristina Höök:

I did not work with trauma, but if I did, I'd need someone like Alé in the room, because I'm a designer. I'm not a psychologist, a physiotherapist, or a Feldenkrais practitioner. That's not my work. So, I have to have someone who really understands it—how to work with it, how to engage with it. A lot of what we do is about finding someone who's a somaesthetic expert, someone with a practice we can build on. For example, when we built the pelvic floor training chair, we worked with a physiotherapist who specializes in women's pelvic floor issues. She guided us through exercises that help people become aware of their pelvic floor muscles and how to work with them.

Veronika Mayerboeck:
So, you brought in different practices depending on the approach—more physiotherapy, or more Feldenkrais and soma-based perspectives?

Kristina Höök:
Yes. But it's an exploration, because as I said before, it's not interesting to me to only replicate what a physiotherapist already knows how to do, or build a tool based on their instructions. I am searching for a dialogue, and I am asking, what can this or that technology add? Can it add something unexpected? Can it make the experience richer, more interesting?

When we were working with shape-changing tech on the body, people reported strange experiences. Some said it felt like they were part human, part machine; like it was sucking the air from their lungs; like their heart was on the outside; or like an animal was pressing against them. At first, you just want to get rid of that—after all, you're trying to build something that works. But eventually, we realized it was fascinating. We needed to explore it.

The theories that helped us the most came from monster studies in the humanities (Carroll, 1999). Every culture has monsters—Sweden has trolls, elves… I don't know what monsters are in your culture. But they all serve a role. They help us deal with what's impure: combinations of human and machine, living and dead, human and animal. Think werewolves, centaurs, mummies, Frankenstein's monster, and whatnot.

And those were the kinds of experiences our work was creating, sometimes unintentionally. And that's super interesting, because monstrous experiences challenge the simple scale of pleasant–unpleasant. They can be both. Feeling an animal press on your organs is unpleasant—but also eerie, fascinating, thrilling. Why are we so drawn to monsters? They tell us something about what we believe, about what should or shouldn't be, about purity, impurity, and what we consider "dirt" that should be removed and cleaned.

"DON'T TOUCH THE MONSTER!"

…iterations of experience between curiosity and alert

Veronika Mayerboeck:
But it's… it's a different kind of spark when a monstrous character enters a scene. On one hand, it triggers alarms—like, is this dangerous? That instinctive fight-or-flight alertness. But on the other hand, it's also about facing our fears. And I think that's something deeply psychological. It makes me think of your very powerful monster practice, Alé.

Alé Duarte:
Monsters, monsters, monsters (laughs) …. But first let me say that this is awesome, what you're sharing, you know, this amazing research and examples of your work you're bringing here. I like design, I like those experiences with the body and the experiences with using different types of explorations, and I like questioning why reproduce something a human is already doing? Why not add something extra? Or something that could be, you know - beyond what we already do and know?

So there's a natural attraction with monsters, which both involves alertness, as well as curiosity. It is two drivers that start working against each other. If I have more curiosity, your body goes forward. But if we have more alertness and less curiosity, your body goes backward. Unless it's counter-phobic, you know? When someone reacts by jumping straight into what they fear just to make a point, to reclaim control. But when those forces are more balanced, or when one side is just a bit stronger—say, 51%—then it becomes this constant back and forth, back and forth… yet still moving forward.

We see that in kids all the time. There's this game I like to play with them — "*Don't touch the monster!*" And I'm there, playing the monster in the corner. The kids are like, "*What am I gonna do here?*". So they start trying to touch the monster — even though the cue is *don't touch the monster!* You can see this alertness happening, but at the same time, their curiosity kicks in. Like, "*I think he's inviting me to play… I wanna see what happens if I touch him — is he gonna play with me?*"

And for example, one kid goes back and forth, back and forth, many times. And we see this iteration of experience — the first round it takes the child very long before he finally dares to touch the monster. He just touches my back, really softly.

The second round is already different, the kid already knew what was going on, so he started playing right away — "*Yeah, yeah, yeah, yeah, yeah!*" — getting into it, building up the courage, and then he just went and touched the monster. And then the third round — he didn't even hesitate. He just went straight up and touched the monster.

So you can see how that balance between alertness and curiosity starts to normalize. It becomes part of the play. And then, as we kept playing, I said, "*Yes, but now… you are the monster.*" I flipped the whole thing — now he was the monster. He looked at me, like, "*Me? A monster?*" So he became his own fear, his own alertness and curiosity.

That's how it works, you know? If you think about spaces or objects, that same dynamic — alertness and curiosity — plays a big role in how we're drawn to them, how they function, how we deepen our relationship with them. The more we engage, the more alertness comes — and with it, more curiosity.

That's what I mean when I talk about video games and all those things — they measure interaction inputs. They build these feedback loops, like, "*Oh, I can see this player is more afraid of this part of the game… so let's put in fewer monsterish bombs.*" Then the next day, he wins more. So they keep adjusting, constantly fine-tuning through those feedback loops.

Another part that really caught my attention was when you talked about familiarity — how something familiar can become unfamiliar, or how the unfamiliar can start to feel familiar. And I was thinking about that word, familiarity. It comes from family, right? So it's about belonging — even if the family isn't always a safe place. There's still this sense of, "Well, this is where I belong." It carries that feeling.

But this belonging can also shift to bad sorts of conditioning, or even approaching addiction, automatic patterns, or something more impulsive, happening constantly: "*As soon as I see it, I*

grab it," and then they say, "*Oh my god, I see something to buy, and I buy it impulsively.*" Such compulsion, when you know it's bad for you but still do it, over and over, and it gets worse. So these terms, and the different levels of behavior they describe, really make me think about *how familiarity operates — how it creates patterns, automated or semi-conscious, good or bad, beneficial or detrimental.*

Kristina Höök:

I totally agree. Even if we aim, as I said before, to improve the connection between sensation, feeling, emotion, and subjective understanding or values, there's always a risk. We might introduce a new habit that isn't necessarily good. We disrupt what's already there and then put it back together in a novel way. For some, that could be detrimental—or not. It depends. Of course, it can also be used positively.

Veronika Mayerboeck:

I do believe this happens a lot within our professional work, that we lose connection to our somas as in Design we often need to switch between a more user centered and the Meta perspective of a project. While our means of work through computers don't engage the body, but mainly support some sort of linear and quite abstract thinking, not to forget omnipresent influences like cost efficiency and time optimized workflow.

Kristina Höök:

Returning to the body takes effort. Shifting attention from here (*points at her head*) to the whole body, or moving it from inside to outside and back, dissolves boundaries — between thinking, feeling, and the body, or between my movement and another's. You can train this, as William James said, using strategies to attend (James, 1905). But after being fully in the intellectual sphere — writing papers, thinking up here — sometimes there's nothing. I don't even feel like I have a body.

LIBRARIES OF EXPERIENCE

…the importance to facilitate and articulate lived experiences

Kristina Höök:

It's amazing that we have this awareness — that we can deliberately work with practices that let our attention travel and dissolve boundaries. What's inside my body, and what's outside? I breathe in and out — things from the outside enter my body, then leave again. I pee, I sweat, I release. So what really is inside, and what's outside? The idea that the skin is a boundary isn't so clear.

Traveling with my attention across that edge has helped me many times in design work — especially in technological design. Is this technology part of me? Yes, in a way — like my glasses, it's me. But also, maybe not. By moving attention back and forth, I can sense where I want to place it — to shape or craft something differently.

Veronika Mayerboeck:

There are many mind-body practices that train attention to move between inside and outside, abstraction and application. However, not many help you consciously verbalize and reflect on your experience. Somatic experiencing is one of the few that does — guiding you to

sense, reflect, and move back and forth between the two.

Kristina Höök:

Articulation is so important in our design processes. It's fascinating — like with wine. When you learn how to talk about wine, you develop a whole vocabulary, and suddenly you can discern subtle details and understand it differently. Does it make the wine better? Sometimes yes, sometimes no. But in design, you absolutely need that articulation. You have to know what you're doing if you want to change something — am I adding sweetness, or am I shifting something else?

We work with articulation a lot, and it's very difficult. Take chronic pain, for example — how do you even begin to describe it? Hip pain, stabbing pain, a burning background pain, pain that travels — muscular, nerve-related. There are so many kinds. And I know which ones are dangerous for me and which ones I can ignore and keep moving through. But I've learned that the hard way.

Veronika Mayerboeck:

I think about this quality of articulation when building up libraries of embodied experience. To give an example, participants of my classes need to move with different pace through a space, to actively change how the space changes in their perception. You need to connect all of that — the doing, the iterating, the changing — with light, with the source, with whatever you're working on. I see that in your work too — these layers of embodied experiences across different design projects and ideas.

If teaching focuses only on the abstract and theoretical — without any link to lived, applied experience — it becomes hollow. I'm a doing person: I come from engineering, I studied architecture, and I'm a mover. For me, theory and practice have always gone hand in hand. Yet when you step into academic teaching of lighting, it's often shockingly dry. How can you teach without facilitating such experiences — without letting students test ideas in their own bodies and learn through doing?

Kristina Höök:

Have you read Donald Schön's "The Reflective Practitioner" (Schön, 1984)? It's a sharp critique of academic teaching — how it focuses only on rules and general principles. But to become a good practitioner, you need personal experience. You need to know what light is and how it works, yes — but also to reflect on what you did in a particular design situation, abstract that insight, and carry it into the next one. Step by step, you build a library of lived experiences.

At the same time, you need novelty. Otherwise, you just keep repeating yourself. That's where estrangement — or defamiliarization — comes in. When something feels completely new, you have to stay with it, explore it. That's how meaning-making happens. So maybe we all need to keep training ourselves to "touch the monster" from time to time.

HOW TO SEE THE "MAGIC"?

…cultivating an ecology of the senses in design education

Veronika Mayerboeck:

Departing from what we talked about before - the novelty, curiosity, and the spark of engagement

— and also what Kia mentioned about observing things anew, whether in a natural environment or elsewhere… it's about being able to engage repeatedly, noticing what's unfamiliar, new, or interesting.

So, within my "Sensing Space" Approach I raise the question: *How do we teach students to "see the magic,"* particularly in lighting? And more broadly, how do we foster an integral understanding of light and architecture, cultivate sensitivity, observation, and an empathic approach to design? That became the foundation for developing this methodology, where I try to teach *design as a corporeal, spatial practice*. For me, coming from vision and movement, it was clear, even imperative, that good lighting education needs to cultivate an *ecology of the senses.* I aim to bring students into a mode of moving, sensing, and feeling ahead of whatever we do. In any workshop — whether stage lighting, outdoor lighting, model work, or even a technical, linear design exercise — this first phase involving embodied experience is always the first part.

But it does not stop there. We need to teach a range of skills, regardless of the often-diverse backgrounds of students: cognitive, affective, and psychomotor, each with context-specific demands. In lighting, *psychomotor skills* are crucial — using a lighting desk requires manual dexterity, motor control, spatial-motor integration, timing, coordination, and technical proficiency. *Affective skills* are equally vital: empathy, sensitivity, and perspective-taking. Stage lighting, for example, demands constant shifts between the performers, the intended message, the overall stage, and the audience. Students must collaborate effectively, develop aesthetic judgment, and cultivate discipline, responsibility, and resilience. *Cognitive skills* — visual-spatial reasoning, attention to detail, color perception, observational precision, creative and analytical thinking — integrate with the others, enabling fully embodied, reflective, and practical engagement with light, space, and design.

All of this also ties into language and differentiation. What I try to do is to emphasize that educational experience irreducibly requires social interaction. As we were discussing before, this includes social bonding, mirroring, being seen, and the intersubjective sharing of experiences and ideas. This shared dimension is a crucial fabric through which learning unfolds, and it shapes how adult students engage, reflect, and evolve in the process.

EXPERIENTIAL LEARNING CYCLES

… from discernment in observation to taxonomies of experience

When it comes to design, I usually structure learning in stages of experiential engagement. It starts with a specific, embodied activity — playful, physical, and engaging — and is always accompanied by reflective observation. From there, we move into abstract conceptualization, and finally into active experimentation and design. The phases build on each other: knowledge gained in one round is altered and transferred into the next cycle, while reflection acts as a kind of resting state in between.

One practice I borrow and slightly adapt from Portuguese choreographer Joao Fiadeiro (n.d.) illustrates this beautifully. In his real-time composition method, participants work within a 1x1 meter square, performing three different actions with objects — one person starts with an object, another adds a second, and a third shapes the outcome. This training focuses on non-intuitive interaction. Like in chess, you learn to observe, wait, and engage without overreacting, following patterns between objects until the action completes itself. I often adapt this to bodies instead of objects, sculpting movements together, then replacing the participants with chairs

to explore the transition from body sensation to object abstraction, seeing how composition emerges from movement and spatial positioning.

Another method I use involves taxonomies and spatial mapping of autobiographical experiences. For instance, students might go through the previously mentioned guided blindfolded self-exploration of space and then place post-its where certain sensations or experiences arose. Walking through the space afterwards, they see a multitude of subjective perspectives from the other participants— one object, ten different interpretations — which is like glimpsing into each participant's way of experiencing the environment. This exercise develops active observation, empathy, intersubjective awareness, and teaches participants to adapt to changing patterns and perspectives, moving at different speeds or interacting unpredictably.

Further integration happens in phases where students lie down and are guided through virtual architectural journeys, approaching imagined spaces from a body-centered perspective. They choose favorite spots, analyze spatial relationships through movement, then draw and finally co-create in groups. This process ties embodied experience to storytelling and collaborative design, forming a direct bridge from bodily awareness to applied creative work.

For example, in a four-hour workshop in Wismar on educational lighting, students began with body exploration in space, experiencing different angles and positions. Then they reflected on two autobiographical memories — one where they could fully focus and another where focus was impossible — writing and sketching their experiences. These insights flowed directly into model-making and lighting exercises, allowing students to design elaborate solutions rapidly, grounded in felt experience and narrative. In another workshop in Stockholm, groups of students went out and re-interpreted and re-organized the Workshop location and hallways, with surprising and playful results (Cranz, Mayerboeck et al., in press).

I do believe we would not have reached this variety in design outcomes without this two-hours ahead, sort of preparatory program, which actualized body awareness and storytelling. The framework emphasizes moving fluidly from reflective states to playful co-creation, and then into specific design tasks. It can even become a challenge to manage students' curiosity and motivation: they are often so absorbed that it's hard to pause them once they start.

Kristina Höök:
Beautiful, beautiful work, it's amazing. Your work excellently reflects what quite a few thinkers — like Tim Ingold or Claudia Ines Pacheco —emphasize: that symbolic or cognitive work doesn't need to be separate from the body. Even in programming or technical description, you can adopt an embodied language. Expression exists along a gradient: some ways of describing design are highly abstract and removed from felt experience, while others are much closer to the body and the senses.

Ingold, for example, has discussed how academic research often forces this very abstract language, removing the "I" and privileging third-person accounts. Historically, this came from the 17th century, when science in the UK was done by gentlemen who didn't want to take personal credit. That approach is just one way to describe the world. You can choose to remove yourself and your embodied experience, or you can integrate it. Both approaches have their place. Sometimes, to complete programming or technical work, you must engage in a more

disembodied way — but that doesn't mean the embodied perspective is lost; it's just a matter of context and tactics.

Veronika Mayerboeck:

What is interesting to me is that I am rediscovering these layers, extending my work meanwhile to children in movement and play pedagogy. I've noticed something similar, at the core, the processes I use with children and adults are often the same. I feel like I'm engaging with the "inner child" of my students, in a sense. Observing these parallels across ages and contexts makes me curious to explore this interplay from different perspectives and has inspired me to invite you both for this conversation.

Alé Duarte:

Your approach shows such depth of engagement, Veronika. I was struck by your earlier remark — "not all actions are the actions." In your lighting workshop, what was the intended action?

Veronika Mayerboeck:

The goal was to help students quickly reach a deep understanding of an educational space and reflect on how lighting could support concentration. The first hour is usually exploratory — testing lamps, adjusting props, playing. Only after that their intentions, materials, and actions begin to align into a coherent design. It's like painting: you need hours of preparation for one good hour of true work.

Alé Duarte:

That resonates. I understand what you describe as phases of preparing readiness, construction, and integration. The somatic exploration prepares the body and perception; the design phase constructs; reflection integrates. Many confuse body work as an end in itself, but in your case, it's the means — the foundation that enables the design to emerge!

Veronika Mayerboeck:

Yes, and I shaped this readiness phase precisely because many students, especially architects, resist abstract movement exercises. They come to design, not to dance. Yet once they engage, they laugh, focus, and forget to stop — the body becomes the bridge that connects everyone, regardless of background.

Alé Duarte:

That bridge depends also on how it's communicated. If we frame the body as the goal, people might resist; if we show it as a path to refine design awareness, they listen. And in your work, the work with the body is not the end, but in fact it's the means toward more thoughtful design.

Veronika Mayerboeck:

That's beautifully put. The body work and autobiographical memories act as anchors. With a small cue, students recall spatial and sensory details — the light, the sound, the atmosphere — and from there, design becomes intuitive and precise. Perhaps that depends on the audience. With architects, I must speak in their language, but the principle holds: embodiment grounds imagination.

Kristina Höök:

I think this is a good moment to bring our conversation to a close. Thank you both for such a rich exchange — mind-boggling, or perhaps body-boggling is the better word!

Alé Duarte:

Thank you, Kia and Veronika, for sharing your work. It was a pleasure to engage with these ideas and their relation to my work with children.

Veronika Mayerboeck:

Thank you both. It's been inspiring to hear how our practices intersect and to witness the depth of reflection that emerged between us, and how somatic experience is at the core of all our work. It's been a real joy — and a reminder of how these dialogues, between body, light, personal growth and learning, keep evolving through shared experience.

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