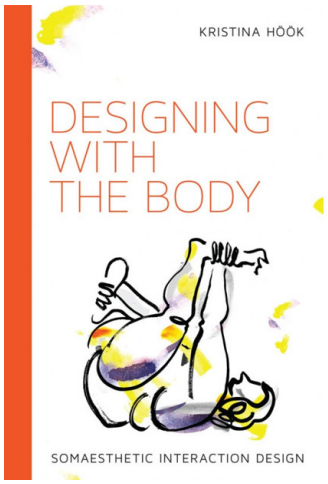
Designing with the Body

Interview with Kristina Höök on Somaesthetics and Design

Dag Svanæs

Abstract: *In this dialogue with Dag Svanæs, Kristina Höök discusses topics covered in her book "Designing with the body: Somaesthetic Interaction Design". She explains how she has made somaesthetics relevant to design, both as a theoretical foundation for embodied Interaction Design, and practically through the application of Feldenkrais and other soma practices to design practice.*

Keywords: *body, interaction design, soma, somaesthetics, design ethics.*



On a windy winter day in Florida, I sit down on the beach with Professor Kristina Höök from the Royal Institute of Technology (KTH) in Stockholm to discuss her latest book *Designing with the body: Somaesthetic Interaction Design.*[1]

Dag Svanæs (S): Congratulations with your new book.

Kristina Höök (H): Thanks.

S: The title of the book is "Designing with the body: Somaesthetic Interaction Design". For those of our readers who are not in the design field, what is Interaction Design?

1 Kristina Höök. *Designing with the Body: Somaesthetic Interaction Design*. MIT Press, 2018

H: Interaction Design is the discipline that designs digital interactions. We build web pages and mobile apps, but also physical interactive artefacts where the digital is an important part of the interaction.

S: What has been your motivation for writing the book?

H: I come from Computer Science and have moved towards Interaction Design, step by step. I came to somaesthetics because I was designing systems to be worn on the body, wearable interactions, and I was very unhappy with how those designs came about. The process and the end result felt very reductionist. In my research group at KTH, we were measuring data from the body and then portraying it back to the end user so that they could adjust and be healthy and happy. That was all well, but it felt like we were missing out on a huge part of what it means to have a body and to move and interact. Consequently, I was looking for a different theoretical foundation for our work. That is how I came to somaesthetics and to other theories of the body that we combined into what we now call soma design.

S: When did you first learn about the work of Professor Richard Shusterman?

H: I first read his work around 2011, and became very interested in finding ways to bring somaesthetics to my field of research. At the time, in 2012, I happened to be the technical chair of the international conference on Human-Computer Interaction, and invited Shusterman to give the keynote talk.

S: What theoretical foundations were already there in 2010, and what did somaesthetics bring to the table?

H: Interaction Design, to simplify, has been very much about looking at new technical materials, new use situations, and new ways for people to live with technology. When the interaction mainly took place through a screen, we could do with cognitive psychology and certain philosophical theories, but as soon as the interaction started moving into mobile devices and onto the body, we had to find other ways of designing. At that time, in 2010, we already had various theories around embodiment and what Dourish' had coined *embodied interaction*.[2] Inspired by phenomenology, embodied interaction start out with how we are in the world with our tools; that the tools extend us and our way of being, and that we should design from that perspective. That was already in my field and I could use when doing design. The problem was that a lot of that work had focused on the social side of embodied interaction. There was not much talk about the actual physical body in the theories around embodied interaction. There was no pulsating, living, interesting body in those theories, oddly enough. And to some extent, if you look at the philosophy of Merleau-Ponty,[3] he does speak about the body, but only in the abstract. He is not speaking about how my sitting bones feel now that I am sitting here in this chair, or any of those more down-to-earth physical bodily realities of how embodiment is enacted through our human morphology. This is what I was missing. So, I went shopping for theories that could extend on my understanding.

2 Paul Dourish. *Where the action is: the foundations of embodied interaction.* MIT press, 2004.

3 See: Dag Svanæs. "Interaction design for and with the lived body: Some implications of Merleau-Ponty's phenomenology." *ACM Transactions on Computer-Human Interaction* (TOCHI) 20.1:8. 2013.

S: Shopping?

H: What you need to know about Interaction Design and Human-Computer Interaction is that we do borrow from all sorts of fields. We are not scared of borrowing from the arts, from philosophy, from psychology, from sociology, from ethnography and so on.

S: With "borrow" you mean apply?

H: We read up on a theory, and then we try to make it actionable in our design processes so that we can design better interfaces and better interactions for the end users. Digital devices are currently everywhere in our everyday lives; in our kitchens, on the bus, in our cars, and in our pockets. Interaction is everywhere. That is why our field had to move on from caring only for the cognitive side of interaction. We had to care also for the social side of interaction, and for the fact that digital products are now close to our bodies. This is what makes somaesthetics so relevant.

S: What aspects of somaesthetics did you start out with?

H: When you are looking at a theory, you are looking for concepts that together form a worldview that you can turn into something actionable – helping you in the practical design process. We look for concepts that open a generative creative path to new interfaces. It leads to new ways of thinking about design that leads to new methods for doing design, that leads to new and hopefully better designs. What I found interesting in somaesthetics was that Shusterman dared to talk about and engage *ideals* in human action and human pleasures. Also pleasures that go beyond shallow pleasures, to the very ideals for what it means to live a good life with your body, with your emotion, with your sociality, with your whole self.

This said, somaesthetics did not answer all my questions. I also looked at neurology, evolutionary biology and a whole range of other academic endeavors. I found, in particular, another philosopher called Maxine Sheets-Johnstone[4] because I needed to come very close to the body. I was looking for answers to questions like "What does it mean to move a muscle?", "Where does meaning making arise in movement?", "Why are certain experiences aesthetically pleasing?". Maxine Sheets-Johnstone looks at this from an evolutionary biology point of view. She writes about the morphology of the human body and how we are in the world and with other people, with and through our bodies.

S: In the book, you write about how you made somaesthetics actionable in your design work, beyond providing a new theoretical perspective.

H: Both Maxine Sheets-Johnstone and Richard Shusterman build their work on movement practices, and both attribute their understandings and ways of reasoning to how those movement practices have shaped their understanding of the world. Sheets-Johnstone was a choreographer and a dancer and Shusterman is a Feldenkrais practitioner. If you look at how others have imported ideas into our field, into Interaction Design, they have done it through using these bodily practices as the place where they

4 Maxine Sheets-Johnstone. *The primacy of movement*. Vol. 82. John Benjamins Publishing, 2011

can start experiencing and innovating, where their creative ideas can arise. In this sense, it was not enough to read a book about somaesthetics. Somaesthetics is part of pragmatism and the whole point of pragmatism is to act in the world, not only talk about it or write about it.

S: Pragmatism.

H: Yes, the philosophy of John Dewey, William James and others. What I do now, based on my understanding of pragmatism, is not only to observe people moving, but move in order to create in and through movement, with my own emotion experience, as it is spurred by movement and through movement, with other people. And by movement I do not mean only that you move a limb, but complex processes. In fact, emotion is a form of movement. The word emotion originates from the French word *esmotion* – to set in motion, move the feelings. There are many different ways you can do this. One way is to slow the movement down in order to understand what is going on as you are moving or experiencing something. You can make something strange by doing a non-habitual movement to make the habitual movement clear to you and thereby design for both the habitual and the non-habitual. You can also simply attend to your senses, register every little detail, ward off other interests, and deepen your experience and understanding of what you feel.

But your own movement is but half of what we design with. The other half in a designer's world, is the materials we use to create artefacts. In interaction design you have to touch and feel and taste and interact with the digital materials. And that might sound really odd to readers of this journal.

S: Can you give an example?

H: Say you have an accelerometer that registers how you are moving, and you want to use that as part of a design project. Then you need to know what it can do and what it feels like when you get feedback from it. Or you can use certain algorithms to process the data from the accelerometer. Then you need to understand what it feels like when that algorithm is modelling you, or following you, or doing something for you. An interaction design process is one that unfolds between yourself, your movement using techniques like slowing down or making strange or engaging in some specific body practices like something Feldenkrais or something else, and the other half consisting of the digital (and physical) materials. We prepare our digital materials. We shape them and give them rudimentary form so that we can feel them. Then we use that in our creative processes and brainstorming. I call it "slow-storming" because it is not about the brain, but about the whole body because that is where the ideas arise.

This soma design process is not easy. You need to engage repeatedly over and over in order to craft and hone and feel how a particular interaction might unfold. It is not a one-off thing. It is a back-and-forth where the material changes with what I do. That is the point of interaction, that it is inter-acting with you, changing with you. It takes time. The shaping of a design is a slow process. It is a process of feeling, of touching, of interacting, of shaping. And then, step-by-step as you feel and interact and shape through your first-person experience, you bring out something that you can then invite others to touch and feel and interact with.

S: This gets a bit abstract now.

H: Yes, very abstract.

S: Could we forget about the digital for a while?

H: Yes.

S: Say that you want to design new kitchen utensils for IKEA. How is this done today, with a user-centered approach, and what would typically be a somaesthetic approach to this?

H: Most design today is done pretty rapidly, and often as variations of what already exists. Let us instead imagine that we are trying to design something entirely new, some that we have not seen before. What you have to do then is to bring out a multitude of ideas. You must start somewhere. There is some need perhaps, like stirring a hot liquid. You then bring out a lot of different solutions and let those solutions help you see what the problem is. It is a backwards process of sorts where the solutions define the problem. This is what we call *design thinking*.[5] Rather than defining the problem and then letting the solution come as a consequence of a defined problem, you start by bringing out many different design solutions, and then you define the problem through the solutions. This is the way design is done today. And then we bring in other users than ourselves because we need to have potential users in our design loop to make sure that we are catering for their needs. We bring in potential users to try out our ideas, our rudimentary prototyping ideas that might not be fully functioning yet. That is user-centered design,[6] where you bring in the users, sometimes even to the extent that to teach the users about the material that the products are built from.

S: Which is participatory design?[7]

H: Yes, where you educate your end-user about what the material affords and enable them to help you design, because they are the experts in their own practices. If you are designing kitchen utensils for chefs, you might invite chefs and teach them about all kinds of fancy new digitally-enabled materials that are available and then design together with these chefs over a long period of time.

S: But this sounds fantastic?

H: Yes, it is amazing and it gives you a lot of fantastic results. And I am not arguing against user-centered or participatory design. I think these can be combined in clever ways, but what somaesthetics provides you with beyond what we already get from user-centred design is a very deliberate engagement with your own experiences. Let us assume that our design challenge for the IKEA kitchen was to look for a novel fork design using a new kind of material that you had been working on. As we start shaping this entirely novel fork, every little tiny detail in your hand movements matters. How

5 Tim Brown. *Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation*, New York: HarperBusiness, 2009.

6 *ISO 9241-210:2010 Ergonomics of human-system interaction — Part 210: Human-centred design for interactive systems,* 2010.

7 Jesper Simonsen and Toni Robertson. *Participatory Design: an introduction*. Routledge international handbook of participatory design. Routledge, 2012. 21-38.

exactly you are gripping this material. How does it feel in your hand? How do you touch the food with this novel fork? How do you move food with it? How is the heat transported or not transported through the fork, and so on? And to get to that level of detail you need to really attend to your senses and to all the different aspects of what this new fork material can give you.

S: So, "you" in this case is the designer?

H: Yes, the designer. You might do this whole careful soma design process as a participatory design process. You might have other people there who do the same thing. Together you have to slow down or disrupt or engage in a manner that allows you to deeply feel, articulate and imagine new experiences that come in the meeting between you and this new material of the fork.

S: You talk about slowing down.

H: Or disrupting.

S: Disrupting, yes. Husserl talks about epoché,[8] the phenomenological reduction, which is about making the familiar strange. Is this a process similar to epoché?

H: Yes. As an adult person you move in certain ways. You move in habitual ways. You walk in certain ways. You sit in certain ways, and you live in a world of artefacts that you recognize. There are chairs, there are tables. And in this kitchen you have these forks that we were talking about and they look a certain way. You have habits for how to eat with forks. To really liberate yourself from those deeply engrained practices you have to put yourself into a situation where you can experience something new.

S: You break the habit? And through that you also become aware of the background of the habit?

H: Yes. And then you might go back to designing for something that is extremely familiar, because now you know what it is. But if you don't break out of it you don't see it. You don't feel it. You don't know it. In the fork example, let us assume that there is a new steel-like material that we are going to use. It has properties that we don't know exactly what can give us. We have to touch it. We have to feel it. We have to bend it and work with it in order to extract all the possible affordances of the material. Dewey speaks about this as emptying the material of its potential. Making the different parts come together as a whole. I think this is a key part of soma design with interactive materials. Digital materials are quite new to us as designers. What does it mean to touch and feel and extract them and empty the material of all its aesthetic potential and affordances? That's where soma design can play a role.

S: The title of the book is "designing with the body". What is that in contrast to?

H: This is a bit difficult to talk about because I don't fully understand it. I think it is

8 See: Søren Overgaard. "How to do things with brackets: The epoché explained." *Continental philosophy review* 48.2 (2015): 179-195. and N. Depraz., F.J. Varela, and P. Vermersch. *On becoming aware: A pragmatics of experiencing*. Vol. 43. 2003: John Benjamins Publishing.

going to take the rest of my research career to think through these questions. When you design with your body, when you design with movement, motion, experience, with sensual aesthetic impressions, it is with a body that is ancient. From an evolutionary point of view our bodies are old, right?

S: Yes.

H: We very often cheat in our design process. We use language and that is a shortcut – a way of cheating. Bypassing movements and instead relying on read-made solutions communicated through our brilliant language skills can be very, very fast. But designing with the body, to really design something that sits well with the movement or with the body or with sensual pleasure or engagement, it helps you become more aware of your habits. It takes time. So, you are designing yourself and your own movement as much as you are designing a new product.

S: This has similarities to dance improvisation,[9] then?

H: Yes definitely. What I find interesting about dance, apart from the fact that they're improvising and they're doing new possibilities in the moment, is that this in turn changes them. It changes their bodies. It changes their nervous system reactions. It changes what they can do and what they can experience. They get a richer palette, a richer repertoire of possibilities through improvised movements or through movement in general. So, if you've never done my favorite activity horseback riding you haven't had that experience. If you've never had anybody close to you die, you haven't had the experience of grief. There are so many experiences that we haven't had and that we need to cultivate and understand and slowly design with. And once we have them, they change us. Through engaging in the way that we have done with soma design, not only have we created new systems that are innovative and interesting in that they have different shapes and forms and ways of interacting, we have also changed ourselves.

S: As designers or users?

H: Both. I changed myself, my own body, to be able to appreciate the finer details of the design processes that we do. But as the resulting designs are picked up by end-users and made to be part of their everyday lives, they will also change.

S: Developing new skills and sensitivities?

H: Yes, and bodily movements. And nervous system reactions. You know how plastic the whole nervous system is, especially of course the frontal lobe interactions. But even the other parts, the slower parts of our brain, the slower parts of our bodies, can be changed. If you look at me you can see I am a horseback rider.[10] You can see that I have muscles in certain places. When I sit on the horse, it looks a particular way because I have trained myself for years to get that kind of balance and get those muscles and get

9 See: Thecla Schiphorst. "Self-evidence: applying somatic connoisseurship to experience design." *CHI'11 extended abstracts on human factors in computing systems*. ACM, 2011.

10 See: Kristina Höök. "Transferring qualities from horseback riding to design." *Proceedings of the 6th Nordic Conference on Human-Computer Interaction: Extending Boundaries.* ACM, 2010.

those nervous systems reactions that make me balanced on top of a horse. And it is the same thing here. The process of designing changes me as a designer and also changes the end user. And we know this already. You use your mobile phone and it trains your eyes at a particular distance. It is not necessarily good for you because you need to be able to look far away as well. And it changes your way of socializing and changes your way of moving around the dinner table when everybody is using those screens. Any technology, any tool, any fork or whatever we put into human culture changes us, changes our movements, changes our practices, our routines, and our habitual movements. And that in turn chances our muscles and our nervous system.

S: In the book, you give some examples of projects that you have been doing at KTH. Which one of these projects could be a good example of how soma design made the product differently from what it would have been without the soma approach?

Figure 1: The Soma Mat (copyright: Royal Institute of Technology)

H: The problem is they wouldn't exist, I think. I don't know. I will give you one example. We designed this mat. We call it the Soma Mat.[11] As you lay down on the Soma Mat on your back and close your eyes, you can get many different feedbacks. We give you verbal instructions to focus on different body parts, and as you do, the mat is heating up underneath those body parts. It helps you to become more aware of where your different body parts are. But it also helps you recognize different temperatures of your body; skin temperature, inner temperature, the temperature of the air around your body and so on. And after a while the voice disappears without you even noticing. It just continues with the heat coming and going underneath different body parts for a while. We put it up for use during three months in four different families. As it turned out people changed from using this. We had a 13-year-old girl in one of the families, saying that it made her more self-confident. When she was giving a talk at school, she would think about how she would lay on the mat, what it would feel like and her breathing and her posture. It made her more aware of her own body and who she was. It made her feel

11 Anna Ståhl, Kristina Höök et al. "The Soma Mat and Breathing Light." P*roceedings of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems*. ACM, 2016.

more confident when she was giving a talk in school.

S: During the design of this product, what did somaesthetics bring to the design process that was not already there in what you were talking about with user-centered and participatory design?

H: First of all, we had to cultivate our own understanding of our own bodies. We decided to go with Feldenkrais. We could have used some other body practice and in fact we tried a bunch.

Figure 2: From a soma design workshop at NTNU in Trondheim, Norway in 2018 where members of both Höök and Svanæs' research groups learn Feldenkrais from Richard Shusterman

S: "We" is the design team?

H: Yes, we were four or five people. We would meet at least once a week and have a lesson. Sometimes it was Kung Fu. Sometimes it was Feldenkrais, or contact improvisation dance or other movement-based practices. We would work very deliberately with this. We always filled in a so-called body sheet – a description of our experience of our own body before doing the exercise and after doing the exercise. And what we could observe from the progression in those body sheets is that there was always something happening. A big change from before to after. We found that absolutely super interesting. We also found it very interesting that when we shared our experiences we often had had completely different experiences. But despite this, we could understand one another because we had been doing the same movement. Even though somebody else had had a completely different experience. I could understand what had been going on.

This was one strand of work in this project. Engaging with our own bodies, changing our own bodies, changing our ability to somaesthetically appreciates stuff. The other strand of work was bringing in digital material. We were testing all sorts of ideas. We had tubes of hot and cold water wired around our body limbs to see if we could do something with that. We had vibration feedback. We had a bunch of different ideas. And the idea of doing it as a mat was just one of the ideas. We had a bunch of other ideas about sitting on certain materials that would change shape and push us, or we would

have a lamp changing its illuminance. We had a bunch of different materials that we tried. And again, we had to engage with all those materials slowly and deliberately. We were looking for a kind of marriage between our bodies, changed by the somaesthetic experiences, and the design materials, and shaping them into orchestrated experiences, unfolding over time.

I would like to add something to this. To describe why this fascinated me so immensely. That was because I had new experiences that I have never had before. By doing certain movement practices and disrupting and doing them slowly and so on, I could learn new stuff about myself. I am fifty-four years old and I still had new amazing experiences of my breathing, of my lungs, and of my inner organs. With the digital materials, the same thing. I thought I knew what they were, and then suddenly we could shape entirely new interactions. We were using heat. We have been using vibration. We have been using interactive lights and so. Materials that I thought I knew, that I understood their affordances. And then suddenly I could shape these into quite different experiences. The sheer joy of discovering that there are new things for me to learn. There are new and very interesting experiences for me to have in this world. Of course, in some abstract manner you already know that in some way. But in another way, it was such a revelation. The world is so rich and the limited digital design world has over-focused on symbols and language and icons and graphical interfaces and we have forgotten about this rich, rich soil that the body and movement offer to our design processes. And then of course, this is obvious if you look around you. Design and human culture and how we express ourselves is of course not only addressing the visual senses as in graphical, symbolic, language-oriented arts, but also all the other senses and it is stupid to assumed that we can ignore that aspect of what it means to have interesting experiences. My experience was playful. It was enjoyable. It was just fun. I have fun at work when I do these designs and our end users love it. It is not without pain or effort. But it gives pleasure at a deep level.

S: This is an aspect of somaesthetics as philosophy that Shusterman writes about. That philosophy has to be lived. It is not just a matter of reading and understanding through language but at some point, you need to…

H: Moved to be moved.

S: You need to actually do something practical or engage in some of these bodily practices?

H: Yes, and it's just to make it clear again: I do think that there are infinite possibilities. Infinite number of experiences that we can have. It is not only one repertory of movement that a human being can do. I don't know how much you've been horseback riding.

S: A little.

H: We learn through our whole life. Every time I go to ride I learn something new. And it is a new experience every time. And if you haven't been riding you don't know what I'm talking about. The horses have different gates that they can do, walking and stuff. I find it just absolutely fascinating. These movements, these gaits. The rhythm of their movements and the synchrony you can get into. The corresponding relationship with your movements and their movements. I don't think you can understand what

I am talking about until you have been riding yourself. You don't understand what it means to be moved by a horse's movements. I can describe this to you, and I can write poetry about it. I can write novels about it. I don't still think that you have an embodied understanding of what it is until you do it.

S: Returning to somaesthetics, would you have been able to do your design research just with the practical exercises that to a large extent already existed in dance and elsewhere, or was the reflections and philosophical understanding that Shusterman brought in necessary for you to understand how to make use of it and apply it to your design practice?

H: I don't know the answer to that. I just know that unlike a design practitioner the role of the design *researcher* is to articulate. To bring out knowledge, and to articulate knowledge so that we can build on one another's works. Articulation does not have to be in words. Or in text on paper, but it needs to take shape and form in the world. For me, doing a body practice like Feldenkrais is not enough. I need to do design work. I need to bring in those digital materials and show what can be done. That is new knowledge to my field. I also need to be able to articulate what is in that design. With the Soma Mat it is not enough that we built it. I also have to extract and explain and point to what is novel in the design and describe it to my peers so that they can use it in their design practices. The way we express knowledge in my field is through methods and particular design examples, but also through concepts and through explaining how those concepts link together with what it means to be human, for example. And this is where somaesthetic theories, the concepts that Shusterman, Sheets-Johnstone and other people introduce are needed in order to tie everything together into a system, into a theory, into something that provides us with a particular theoretical lens by which I can understand those design examples methods and design concepts. This is this is how I see it. I don't think that you have to have all of those concepts and words and theories in order to be a good soma designer. I think you can learn these things through the practical work.

S: For actual design work, you think that it is much more important to engage in these bodily practices than to read up on somaesthetics theory?

H: Yes, but as an academic it is my role is to show how everything ties together and why it works and how to explain it and how to explain these phenomena. And that is where you need a system of concepts and theoretical ideas that link it together.

S: What are the implications of this for design education?

H: When I started working with soma design, I assumed that this is how design is taught at art schools. I knew that they engage heavily with their materials and touch them and work with them and turn them into different shapes and forms to see what they enable. If you have plastic, you work with plastic for a long time before you do something super interesting and innovative and new, right?

S: Yes.

H: What we are doing with soma design is that we are taking some of that with us into engineering schools and we are sort of saying: "well you are creating these products for people to use in their everyday lives, on their bodies or around their bodies or in the kitchens and whatnot. So, you also need to bring in these kinds of practices in order to understand what you're designing and how you're designing for people. It's not enough for you to study other users. You also have to feel this. The felt dimension of digital product needs to be in your repertory."

S: Looking back at this. In art schools, students have drawing classes where they learn to improve their skills in drawing and visual design and seeing. Should Feldenkrais and Tai Chi be part of Interaction Design education?

H: I don't think Feldenkrais should be part of it. I think that you can translate these methods into methods that engage with the digital materials in various ways so that you figure out a way of feeling and touching with digital material. A fusion of perhaps of Feldenkrais with some digital material, or Kung Fu with some digital material. It does not have to be Feldenkrais.

S: But there is room for some activity that teaches the designers appreciation for the bodily aspects of design?

H: Yes, experiencing – bodily, sensually. To give an example, we did this design class last year. We worked with Electrolux, a Swedish company. They asked us to do soma design for cleaning your home, doing your laundry, or air purification. What we made our students do was to go home to their own kitchen, slow down their movements, make stuff strange and feel and touch and interact in ways that spurred new ideas for what you could be doing in the kitchen and what kind of tools that you could have around yourself. And also to take existing products, like the blender for example, and then touch and feel and interact with that in order to redesigned it entirely. If I deconstructed this product, what could I do? We started out more generic with body practices, such as Feldenkrais, contact improve and slow walking in the forest behind KTH. We did a bunch of different body practices. We also did bodily movement exercises in the settings that they were aiming to design for it. In the kitchen and these environments, engaging with vacuum cleaning and doing your laundry. But we asked our students to do those everyday practices in ways of "making strange", disrupting, slowing down, or doing it playfully. Deconstructing movement and sensual engagement in order to be able to construct something entirely new. We had in total nine student projects and they were really innovative compared to what we typically see at an engineering school. If we had asked them to use their normal user-centered double-diamond design approach, we would have gotten the typical everyday ideas that we see all the time anyway – robots and various Internet of Things design. Instead, our students' designs had a much more reflective aesthetic quality to them.

S: In the last chapter of your book you go into the ethics of design.

H: Yes, I hesitated before I wrote that chapter. Some people told me I shouldn't have written it, or they were worried about me writing it because it was like opening a can of worms. But the thing with somaesthetics to me is that it is also an ethical project.

You can't attend to your senses and your ability to appreciate through your senses and aiming to live a better life without this also being an ethical project – of your life. Soma design engages with issues like dualism, feminism, privilege and class as all of those are enacted with and on our bodies. All of these things become acutely *there* when you are designing with a somaesthetic approach because there is no way of distancing yourself from yourself.

S: How technology alienate us from ourselves?

H: Yes. Overemphasizing certain aspects of what we are and underemphasizing other aspects of what we are, and thereby stopping us from feeling our own reactions and our own bodily ways of being in the world, – making us less aware. Somaesthetic design has to care and make you more aware.

S: How did do you bring the ethical aspects back into the design process? Is it sufficient just to do somaesthetic design as you have described?

H: I opened this can of worms and I don't know whether I addressed it. I guess I have to go on the rest of my life and work with this. If you do these kinds of design processes, there is no way you can ignore for example that the fact that we have different bodies. Your body is different from mine or my body today is different from the one I had when I was 15. These things are overtly there, in your face, in our soma design processes. But whether there is any guarantee that just because you do somaesthetic design that you would necessarily only design stuff that is good for all people? I don't know. I am still battling with for example the selfishness in turning this much attention inwards and getting to know myself so much better. Is that is that the only way by which I can be a better attending to someone else's needs. The whole idea that if I if I don't know myself, if I don't know my own emotional reactions, my own bodily reactions to stuff, then I can't really be there for you either. Right? So, the whole idea is like in Buddhism that if I live this way then I can more generously be in the world for other people. But, there is this risk that it makes you even more individualistic and even more selfish. I think. As with any method you have to know what you are doing when you apply a method. Using a method is no guarantee that you come to these insights. It makes it more likely perhaps that you do.

S: So, you open up a can of worms and in addition you do something that is a lot of people would maybe hesitate doing, and that is making a design manifesto.

H: Yes. (hehe)

S: Based on a someaesthetic approach, you have a design manifesto of seven points. If you should try to do an elevator pitch of this manifesto, what would be the essence of it?

H: The essence is really trying to capture the fundaments of engaging with somaesthetics. It is going back to the idea that you need to engage with your passions, with your emotions, with yourself, with your with your body in order to design good stuff. The first one, and I remember them because I use them quite a lot, the first one says basically to design for *this* life not for the *next* life. And for our field, to interaction design, it

has been the case that we have been hunting seconds and milliseconds to make every usage situation as fast as possible in order to save time. The question then is what do we save time for. For the next life or for what? To me this speaks directly to the division between Aristotle and Plato argues that you have this ideal world and you come to that afterwards, but where Aristotle says no, let us live a good life here and now. Let's improve our senses here. This is what I think interaction design should be worrying about. We should not be saving seconds by making everything as efficient as possible. We also need to care about the aesthetics of it and we shouldn't be solely working to promote an "attention economy" making people addicted to our technologies, but also with what is a good life and what improves life for all of us. How can we live together and live a sustainable life together? The whole manifesto is breathing these values. Another of the statements is we design slowly. This is a very strong reaction against the commodification of designerly thinking where we are putting out ideas rapidly and aggressively quickly jotted down on some Post It notes. Then we believe we have done innovative design. To me it is cheating. It is a shortcut to simple ideas and to the easiest targets. It is not the path to thoughtful, careful and sustainable design for people.

S: All these things live very happily in your lab. In that academic setting.

H: Well not always happily, because it is also demanding. People in my lab and in my group have had to talk through several times how close we come to one another or how annoyed we get by one another and so on because it becomes very intimate.

S: Sure, but out there in the real world with …

H: … capitalism and deadlines and tech companies and…

S: … the tech giants and start-ups that need funding. Is there room for this in the 21st century?

H: I don't know yet. I think that in the long run, with the kind of awakening that our field and the whole world is going through, we cannot put more shit stuff out there. We have to be way more reflective on how we build our society now if we are going to survive on earth and if we are going to survive without stressing the hell out of one another. I do believe that a sustainable business is one that has sustainable work processes, sustainable design processes, and puts out products for end users that has those qualities.

S: But if it isn't it a paradox that you try to change the world by building products? Are there any examples of this actually happening? We know that things change for the bad, but do you have any good example of digital products that were intentionally made to make the world a better place, and then actually made the world a better place?

H: I do think there are products where a lot of care has gone into the design. Let me take an example, and it might sound contradictory, but the desktop interface. It really shifted interaction from being a language-oriented skill that only engineers can process what they had to know a bunch of commands into an interaction that could be more bodily. You were moving stuff around on the desk as if you were moving stuff in the

physical world, and this enabled a whole bunch of people to be able to use computers and later mobile phones. And though there are many negative consequences of course of computers and mobiles, there are still amazing positive consequence. Enabling communication, enabling better business processes, enabling poor people to get more educated and be less poor. Learning processes and so on. Amazing opportunities that come out of your ability to use these technologies right. I think we are heading towards a society where experience rather than possessions are going to be important. We are liberating ourselves from stuff and moving into services and experiences. To me this kind of design is crucial in that it liberates ourselves from things. Whether one spurs the other, I do not know. Is it the changing times and the crazies that we are standing in front of that makes us more aware and more interested in experiences rather than things? I don't know. Is it that somaesthetics comes as an answer to that? I don't know. I just know that that's what I want to contribute. I believe that we can we can do what graphical user interfaces did for computers and how that liberated us from time and space and connect us to one another and in positive and negative ways. And what is interesting is how Alan Kay[12] came to the ideas of the desktop interface. He was looking at some tennis instructor teaching a woman to play tennis in only one lesson. Have you seen that video?[13] It's amazing. It is really about body and movement. By distracting her conscious, critical mind, the tennis instructor made her simply imitate his movements and she learnt how to serve, play forehand and backhand. Kay did the same for computer interfaces. Instead of learning a bunch of commands, he shifted them into simple movements, such as dragging and dropping.

S: Yes, he explained to me when I had my sabbatical at Apple Research in the mid 90s.

H: I wouldn't say that there is anything in the soma design methods that I describe that protects them from being misused by psychopaths or people longing for power. Of course they can be used like that. Power is inflicted onto the body. Inequalities, like feminism and so on, is done onto the body. It's the body where it's enacted. You can use these methods to know more and thereby be persuasive or oppressive or all of those things. I'm sure.

S: Could you say more about feminism?

H: Feminist to me… If you are designing with the body and with your experiences then it becomes obvious that your body is different from mine. And your experiences are different from mine because you are male and I am female. We will move differently, we will experience differently – and both of our experiences are as true and important. Instead of downgrading the female experience, it comes to forefront. It spurs ideas such as designing for menopause and female health, for example. Designing for a whole range of human experiences. Feminism here not only concerns the male and female body, but all sorts of bodies, all sorts of experiences that are shaped by our physical, bodily ways of being in the world.

There are of course many different feminist theories, here I am very much talking about the feminists interested in how our bodies are corporeal realities and how that shapes

12 One of the main innovators of the desktop interface at Xerox Parc.

13 https://www.youtube.com/watch?v=50L44hEtVos

our experiences. Like Elizabeth Grosz[14] writing about how menstruation and breast feeding and menopause and so on shape my experiences in the world. As well as queer ways of being in the world, and male ways, and young bodies ways of being in the world, or old bodies ways of being the world. Experience and possibility for design is filtered through that particular body.

S: To be a little bit more personal, do you think it is a coincidence that it is you as a female in the male-dominated field of Computer Science who have been doing this?

H: It is definitely noticeable that when we have workshops on soma design, it attracts a lot of women. Some of the strong proponents for this way of designing in interaction design are women. Not all of them, but perhaps more than what we see otherwise in design.

S: Is that relevant in any way?

H: I don't know. I don't think that this is a female privilege at all. I just think that it happens. Some of these experiences have been used to oppress women. Have been used to downgrade female experience. The whole history of male vs. female, rational vs. irrational. rationality or mind vs body, the associations go back to the old Greek society. We haven't liberated ourselves from those dichotomies. Females are associated with body and emotion and movement and dance in our society. There's no reason for that. It is just as stupid as associating women with fire and dangerous things as they did in Australia because the women were the ones carrying the coal.

S: Like Lakoff[15] wrote about.

H: Yes. To me, and I guess to a lot of women, we ask why are our experiences downgraded and put as low status all the time when obviously these experiences are there for both men and women? Why is the female body not spoken about in philosophy? Why is menopause such a taboo subject when 50 percent of the population go through this phase in their life? It is a huge thing in women's lives. A huge transformation.

S: Is it coincidence that this happened in Stockholm, maybe the most gender equal city in the world?

H: Women researchers in Scandinavia, are perhaps so strong because we are brought up in a more equal society. We are not scared of doing research in this area, while in other parts of the world a lot of women would be super-scared because they need to break into old hierarchical male-dominated organizations, and they have to take on the topics that are objectively seen as the most important topics to do.

S: Last, is it a coincidence that this happened at KTH?

H: Well, there is the participatory design movement that was done at KTH and other places in Scandinavian countries, like Århus in Denmark. But somaesthetics is also

14 Elizabeth Grosz. *Volatile bodies: Toward a corporeal feminism*. Indiana University Press, 1994.

15 George Lakoff. *Women, fire, and dangerous things.* University of Chicago press, 2008.

strong in other places, like Australia and even China.

S: Thank you for taking the time, and again, congratulations with the book.

H: Thanks.

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