Abstract
In my thesis, I am exploring a soma-based workshop format where I want to co-design a highly personalized artefact with former sufferers of mental health issues. The workshop explores if it could allow the participants to articulate and express their felt experiences of their mental health and result in an individually designed artefact to help address their emotion regulation skills. In this paper, I will look at my work halfway into my PhD and outline my rational, methodology, current state and my next steps.

Introduction
Most digital tools addressing depression and anxiety focus on thought patterns – for example in so-called mindfulness or cognitive behavior therapy apps [14]. But we know that depression does not reside solely in our thought processes. It affects our whole selves – our mind and bodies alike. William James, who is considered to be the founder of psychology, argued already in 1884 that emotion without an embodied experience as impossible: “A purely disembodied human emotion is a nonentity.” He argued that our mental life is tightly knit with our corporeal frame in his essay “What is an Emotion” [12].

More than 300 million people in the developed world have been diagnosed with affective health conditions (depression, anxiety or bi-polar disorder) and the annual associated healthcare costs exceed 100 billion Euros. Developing affordable tools and methods are a global effort in most countries and seen as top priority.

Author Keywords
Soma Design; Co-Design; Emotion Regulation; Emotion Expression; Affective Health.

CSS Concepts
• Human-centered computing ~ Interaction design ~ Interaction design process and methods

Designing with the Body: Addressing Emotion Regulation and Expression

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This is also why mental health and wellbeing is a rapidly growing area within Human-Computer Interaction (HCI). In recent years, many have developed systems, theoretical stances, and methodologies that aim at positioning Information and Communication Technologies (ICT) as an important component of therapies, prevention strategies or self-management for people dealing with affective disorders, as well as their peers, caregivers or clinical staff.

Based on a literature survey we did in 2018 [14], most design innovations in the HCI-research so far have been in automated diagnosis, and self-tracking, although there are some innovative ideas building on tangible interfaces. Often, there is an overemphasis on data production without consideration of how it leads to fruitful interventions – instead the data is simply offered to users as a basis for “reflection”.

There is a huge variety of therapies originating in different theoretical models. While it makes sense for HCI research to start with therapies that are most easily translatable into design, such as Cognitive Behavioral Therapy (CBT) (widely used and has a good evidence basis), HCI research should explore a much wider range of therapies. As argued in our literature survey, we should engage with other technologies, such as tangibles, taking us beyond glass-screen interactions [6]. Some opportunities for support may be straightforward, whereas others, particularly those with a stronger corporeal emotional element, will require more creative ideation and exploration of the design space [7,18].

I am part AffecTech (see side note “affiliated project”) where I do design-based research in the intersection of Human-Computer Interaction, Emotion regulation and Design. I am influenced by Somaesthetic Interaction Design that also supports my particular interest in the embodied elements of affective disorders. This is why my PhD research work engages with other, tangible, ways of addressing mental health issues.

Research context and motivation

The Soma Design Research Group at KTH, which I am part of, has been exploring various ways to engage with our somatic experiences and designing with those [16,17,20]. Through our practical design workshops, I still see an important value in the conversations on somatic reactions that arise between us as we do design work together. We often touch on very personal experiences when slowstorming [10] or designing and touching/shaping/feeling various haptics technology feedbacks. The experiences of transporting ourselves into a “somatic” space, of feeling, touching, shaping expressions, seems evocative for articulation of the “hard to speak of”. It inspires conversations that we would otherwise not have [3]. I decided to start exploring this further as the expression of personal experiences and emotions is a long and strenuous task for a patient with mental health issues. I saw an opportunity to involve those with mental health issues in the ideation workshops as such – speculating that the process of designing would let them express and engage in a different manner, mediated by the creative design process.

With colleagues from NHS in Leeds, we held a public and patient involvement (PPI) workshop to seek feedback from so-called “patient ambassadors” on my
idea. Patient ambassadors are typically former patients who are keen to help researchers develop their ideas. PPI is a useful platform for researchers to get in touch with patient and healthcare staff and present ongoing research to elicit feedback. It becomes a co-design process where participants can provide feedback, personal insights and inform the research into new direction. The workshop in Leeds was promising in that the ambassador resonated with the idea and the focus on somatic experiences.

Together with my colleagues in the soma design research group, I therefore decided to set up a properly organized designed workshop (See Figure 2 for an account of the plan), intending to let participants express and share somatic accounts of their individual mental health experiences. To test this more elaborate process idea, I facilitated two pilot workshops in Stockholm where we explored emotional experiences with male participants in a soma design session. The choice of male participants originates from the PPI in Leeds where the male participants shared how they manage their mental health issues with digital technology. They also exchanged and confirmed each other’s way of handling their issues. To me, this was an interesting insight worth exploring further. I also found an overlap with the statement of American Psychology Association (APA) that some men shy away from expressing their feelings and rather try to connect through physical activities or talking about sports, politics, or work [2]. My idea was that externalizing experiences through creating technological designs to express them would be appealing as a path to sharing for my male participants.

The pilot workshops showed that having too many participants made it difficult to facilitate the discussion. Giving attention to the participant’s needs and facilitate in smaller groups is not only more effective but allows for an honest environment and a seriousness which in larger groups can easily derail into jokes or other ways of diverting attention.

Based on the work by Bennett with disabled activists [5], Spiel on designing individual artefacts for kids with autism [15] and Johansson on designing for participation [13]. I find the idea of helping my participants develop an individual design appealing. By organizing work into small groups, I could help each one of them to develop their idea into an artefact to be brought home with them afterwards.

**Methodology**

**Soma Design**

In the Soma Design Research Group, I have had opportunities to work with – and contribute to – entirely novel design methods, recently introduced to the interaction design community. Soma design proposes one path to cultivate our somas and create for more enjoyable or more interesting ways of being, mediated by or in collaboration with interactive artefacts. To make this happen, soma designers often start the design process by engaging in various aesthetic practices to spur novel design ideas. Often we engage with movement practices that shift us out of our habitual movements and response patterns [11,19], such as Feldenkrais [8] or Contact Improvisation (a form of improvised dancing that involves exploring one’s body in relationship to others by using the fundamentals of sharing weight, touch, and movement awareness). Based on these
Research questions
Can a set of soma-based co-designing workshops allow participants to articulate and express somatic experiences of mental health issues in interactive tangible form? Furthermore, could the resulting individually designed artefacts help address their emotion regulation skills?

Seeking Advice
Beyond expressing the somatic experiences of mental health issues, there is potential in creative design work itself as a path to regain emotional stability or learn emotion regulation. But how far I should go in trying to prove that soma design workshops have positive effects on emotion regulation skills? My expertise lies in design (my background is in industrial design) – not in psychology.

I also seek feedback on the idea of doing soma design with male participants – and the potential political and ethical implications.

Current State of Research
So far, I have:
- Done a literature survey together with some of my colleagues in AffecTech (published at CHI 2019, received honorable mention award [14]).
- Helped create "soma bits" that can support soma design sessions (published at RTD 2018 [20]). In short, Soma Bits are a growing library of physical soft shapes and a collection of heat, vibration and shape-change actuators made as standalone devices (see Figure 1) that help explore and orchestrate on-body experiences.
- Developed ideas for how to make biosensor data tangible in ideation workshops (accepted at CHI 2020 [1]), or as we phrased it, turning raw biodata into somadata that is, a way to turn your own biodata into a ‘tangible’ form by coupling it to sensuous actuation, enabling first-person, felt encounters.
- Developed ways of not only designing for the “pleasant” but also the uncomfortable, thrilling experiences, resulting from sensory misalignment concepts (accepted at CHI 2020, received honorable mention award [16]).

Next steps
Based on my work so far, I am well-prepared for the next step: soma designing ultra-personal artefacts for participants who have, or are, suffering from mental health issues in the manner outlined above. I am currently seeking ethical approval for the ideation workshops that will be performed in Leeds with the help of NHS.
Affiliated project
I am affiliated to AffecTech that employs 15 Early Stage Researchers, who are involved in Innovative Training Network (ITN) to become the future generation of European researchers who will revolutionise affective health care via innovative personalised technologies. www.affectech.org

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