


The Armor of a Researcher: A Critical, Material Engagement with Somatic Experiences

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Design researchers and practitioners continuously engage with humans in their work, which can translate into encountering personal stories, challenging questions, and facing expectations. The researcher can be torn between remaining ‘professional’, which is often connoted to being ‘neutral’, and engaging their own emotions, vulnerabilities, and insecurities. This paper presents a soma design process that was informed by the autobiographical experiences of the author. The result is a wearable artifact named ‘The Armor of a Researcher’. The artifact embodies somatic experiences of ‘doing research’ and ‘being a researcher’ during qualitative studies with participants. It is intended to be thought-provoking and points towards reflections on professionalism. Physical materials are assembled into a wearable form, which allows others to engage with them through their own bodies. Finally, themes that The Armor has evoked in others are described; these outline knowledge that the artifact puts forth to HCI.

Keywords

Autobiographical soma design

Wearables

Material explorations

Bodily engagement

Professionalism

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The Armor of a Researcher: A Critical, Material Engagement with Somatic Experiences

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MANIFESTING EXPERIENCES THROUGH MATERIALS

Doing qualitative research with participants means engaging with people and their emotions through their own bodies, i.e., during interviews, workshops, and co-design activities. A researcher can prepare for such encounters by reading guidelines, building on previous experiences and recommendations of colleagues but, ultimately, they have to react to the situation at hand. The researcher might encounter questions they cannot answer, vulnerabilities they would like to avoid, stories that trigger personal memories, criticism, expectations they cannot fulfill. In such situations, one might feel torn between reacting 'professional', which is traditionally connoted to being objective, emotionless, and neutral, and reacting 'emotional' (see Balaam et al., 2019; Branham et al., 2014; Wolters et al., 2017). To be perceived as professional, researchers might feel the urge to hide their personal thoughts and vulnerabilities, to disguise the reaction to a question, their own behavior, and body language; as Wolters *et al.* point out: "we need to suppress feelings in order to function as researchers" (2017, p. 818).

To engage with experiences of 'doing research' and 'being a researcher', I created a wearable artifact: 'The Armor of a Researcher' (short: 'The Armor'). The Armor resulted from an autobiographical soma design process (Höök et al., 2019; Tsaknaki et al., 2021) and through a Research through Design (RtD) approach, which "is a thing-making practice whose objects can offer a critique of the present and reveal alternative futures" (J. Bardzell et al., 2015, p. 2,095). The Armor represents my expectations of myself and the expectations of others, both of which I perceive as influencing me and my body in research encounters; how I believe I should behave and limit myself emotionally and bodily to fulfill the role of the 'researcher'. The Armor is a critical manifestation of felt experiences that are represented in a physical and wearable form. It points to challenging, vulnerable, usually hidden experiences of doing research.

This paper not only presents the process of creating The Armor, but also serves as an example for generally reflecting on how materials can be used to express bodily experiences and bring them to the awareness of others, focusing on experiences of researchers during research encounters. Therefore, I turn to the

following research questions: (1) How can somatic experiences be expressed in physical forms and give voice to expectations, constraints, and challenges faced by a researcher? (2) How is *The Armor* perceived, interpreted, and discussed by others, and what kind of knowledge emerges from conversations about it?

The paper makes two types of contributions:

—*The Armor itself*: It is an exemplary case of how somatic experiences can be expressed in a material form, and is, thereby, responding to the first research question. It invites scrutinizing and questioning perceptions, expectations, and oppressions related to professionalism. Using physical materials, especially placed on the body, allows for interactions with those experiences through touchable and tangible means, and intends to inspire others to deeply engage with their own somatic experiences.

—*Knowledge proposed by The Armor*: By summarizing topics that emerged from discussions about *The Armor* during an exhibition, I point to the knowledge it entails, thereby, responding to the second research question. This knowledge invites for further critical questioning of professionalism, re-thinking expectations, and exploring how physical materials can enable the exchange of somatic experiences.

The following will firstly outline the theoretical background and then describe the autobiographical soma design process and *The Armor* in detail. Afterwards, topics that were evoked in conversations about *The Armor* and emerging knowledge are discussed.

THEORETICAL BACKGROUND

This paper builds on the synergy of soma design and autobiographical design, on materials as means of expression, and on a critical and feminist perspective on design — all described in the following.

Engaging with and through the body

Doing research with participants means engaging in reciprocal processes, where researcher and participant are negotiating their boundaries constantly (Balaam et al., 2019, p. 9; Toombs et al., 2017, p. 47). A researcher can be confronted with challenging encounters and might be exposed to expectations and pressure, not only from participants but also from other researchers. Toombs *et al.* claim that “we experience the same vulnerabilities as our participants do, and they pick up on our vulnerabilities as capably as we pick up on theirs” (2017, p. 54). These vulnerabilities affect researchers in their practice and are not always brought to the foreground in publications, presentations, or discussions with colleagues. The engagement with emotions of researchers and participants often remains hidden, ‘invisible’, and is not addressed openly enough (Balaam et al., 2019, p. 2).

In this paper, I reflect on my somatic experiences of doing qualitative research. To do that, I turn towards soma design (Höök, 2018; Höök et al., 2019; Lee et al., 2014; Tennent et al., 2020; Tsaknaki et al., 2021, 2019). “At the core of soma design lies a first-person perspective on the body, in which designers engage with their somas thoroughly and slowly” (Höök et al., 2019, p. 4). I approach the first-person perspective through autobiographical design (Desjardins & Ball, 2018; Sengers, 2006) which resulted in an autobiographical soma design process (Tsaknaki et al., 2021, p. 3). Autobiographical design places the experiences of the researcher at the center of designing (Sengers, 2006, p. 2). Intersecting autobiographical design with soma design means to be driven by a deep engagement with bodily experiences. For *The Armor*, my body, autobiographical insights, and felt experiences of doing research became a resource to designing (Tsaknaki et al., 2019, p. 1,239), and guided material explorations.

Materials on the body

The Armor consists of various physical materials. They function as metaphorical expressions, bringing experiences into the physical world. The material choices, their manipulation through (textile) craft, and their combination are central to this paper. I am taking a ‘material lens’ towards interaction design, and the iterative making of *The Armor* can be reviewed through Wiberg’s ‘methodology for material interaction design research’, which is “to work *back and forth* between *details* and *wholeness, materials* and *textures*” (2014, p. 626).

In soma design, the “soma designers explore physical materials as an entry point to probe the dynamic gestalt of the interaction” (Höök et al., 2019, p. 6). I used materials to express bodily insights through material properties and sensations on the skin. Others have used physical means to express bodily phenomena, e.g., Ozaki’s ‘Menstruation Machine’ (2010) enables the experience of menstruating to be wearable; ‘Breathing Shell’ makes breathing tangible (Tsaknaki et al., 2021, p. 2); ‘Menarche Bits’, a prototyping kit that resulted from a soma-based process, allows users to prototype body-worn technologies that make space for their experiences of menstruation (Juul Søndergaard et al., 2020); ‘wear.x’, a wearable, embodies experiences of migraine (Beuthel & Wilde, 2017); and ‘BREATH and WARMTH’, also wearables that provide representations of loneliness in remote relationships (Beuthel et al., 2021). Aligning with these examples, *The Armor* is a material reflection of difficult first-person experiences, similar to the one provided by Devendorf *et al.* (2020), who propose ‘Design Memoirs’, designerly prototypes that narrate complex and difficult personal experiences. *The Armor* manifests experiences that are situated within a professional context, inviting others to engage with them bodily, through wearing and touching.

Design as critical and feminist

The process of creating The Armor was driven by the underlying understanding of *design as a critical and feminist practice* (Juul Søndergaard, 2018), meaning that design is inherently critical, “insofar as it aims to change a situation into a preferred future. In doing so, it also (at least implicitly) presents a critique of what is currently available” (Juul Søndergaard, 2018, p. 71). The Armor provokes critical reflections on the role of researchers, connotations surrounding professionalism, and insights on oppressing emotions in research.

“In doing and thinking design as a feminist practice, design researchers can engage feminist perspectives — throughout and not post-practice — on what is *inherently* at stake in any design practice” (Juul Søndergaard, 2018, p. 73). The Armor is a material engagement with feminist issues, e.g., ‘identity’, ‘empowerment’; feminist ‘qualities of pluralism’, ‘embodiment’ (S. Bardzell, 2010, pp. 1,301–1,307). It manifests topics that are usually “underexplored, ignored or excluded from design” (Juul Søndergaard, 2018, p. 73), such as the “emotional wellbeing of researchers” (Moncur, 2013, p. 1,883) and somatic impacts of research practices.

THE AUTOBIOGRAPHICAL SOMA DESIGN PROCESS

The process of creating The Armor was inspired by soma design (see Höök, 2018; Höök et al., 2019) and autobiographical design (Desjardins & Ball, 2018; Sengers, 2006) and is detailed below.

Research context and positionality statement

This research evolved during an interview study, which was part of *re.tangent*, a research project that explores (playful) remote family interactions in Austria and Belgium. The project was conducted by interdisciplinary researchers from the social sciences, HCI, and design research. My role as a Ph.D. student was to conduct interviews and use the gathered insights as prompts for prototypes. I am a design researcher with a background in fashion and textile design, working within HCI with wearables, embodied interaction, and body-centered design. Since I have many years of experience living away from family and friends, I had various personal connections and memories concerning the research context.

Experiences during interviews

The interviews were conducted in the homes of five grandparents and five grandchildren, each having family members living at a physical distance. I inquired during one-to-two-hours long interviews into communication strategies and how they maintain their relationships. During the encounters, my role as a researcher was constantly challenged; partly because the content of the interviewees was similar to my own (living away from my family) and partly because they shared in-

timate stories (e.g., about feeling lonely, deceased loved ones). The interviews were conducted over three months and I slowly began to turn my attention 'inwards', deliberately engaging with my body. I started to describe somatic insights in narratives. To give an impression, I include three exemplary narratives:

The interviewees and I had never met in person before I entered their homes. We only communicated through email. When I rang their doorbell, both, they and I, did not know what to expect. They only knew that a 'researcher' was coming to visit. Once they saw me, some expressed their surprise that I was so 'young' – based on my appearance. They probably had expected a researcher to be more mature-looking. Thereupon, I felt I had to prove and defend myself, showing them that I know what I am doing, that I am not 'too young'. In the following conversations, I was slowly dropping knowledge about me to ensure they realized that I have expertise and experience in doing an interview study, in doing research.

One child asked me: "what do you play with your grandparents?" Since all my grandparents have already passed, this question triggered upsetting memories and feelings of missing them constantly. I was conflicted about what to respond. My research aim was to talk about playfulness and maintaining family relations. I wondered if the topic of dying grandparents could match that aim. I responded: "I often play Monopoly with my grandmother", which was true in the past. I felt highly uncomfortable about lying. I wanted to be honest, but also protect my emotions and those of the interviewee: since he was only six years old, I was not sure if it would be appropriate for a stranger to bring up topics related to death.

One grandparent shared with me that she feels "left behind" by her family: they think she is very independent, so they don't visit her often. When in fact, she would like to see them more and would need some assistance with daily tasks, but she doesn't want to ask for help so as not to annoy them. I was upset: I knew I could not help her with her life situation, but I felt the urge to do something. I would have liked to write to her family, or share the interview transcript with them so that they would know about her feelings. But of course, that is inappropriate. When I left, she wanted to hug me and told me it was nice to have someone to talk to. I was surprised because a hug seemed very intimate. I was torn between allowing for that or trying to maintain distance. Finally, we hugged. It was a moment of closure: we shared some intimate conversations, but both knew we would never meet again.

During the interviews, I was constantly conflicted between maintaining my role of the 'professional researcher' that 'should not' engage too many emotions and opening up about my relations to shared stories and personal emotions. This is, indeed, a common conflict as the emotions of researchers and participants are inseparable from the research (see Balaam et al., 2019; Behar,

1996; Blakely, 2007; Dickson-Swift et al., 2009; emerald & Carpenter, 2015; Rager, 2005), yet, it is still an underexplored issue.

After the interviews

I reviewed my personal narratives, transcripts, and videos from the encounters. I identified situations where I adjusted my behavior according to expectations, impacts on my somatic experiences, and conversations where I was conflicted about how to act and react as a 'professional'. I focused on my felt experiences of doing research, particularly norms, oppressions, limitations that I internalized. I decided to externalize them, give them a physical form, and bring them to the foreground and physical existence.

Turning to design

I used mixed media (Figures 1-5) like sketches, mood boards, and collages to document, visualize, and express my somatic experiences (Tsaknaki et al., 2019, p. 1,240). Based on that, I collected physical materials to find representations and metaphors that depict the felt experiences I had identified. The intention arose to make 'something wearable', as it would allow for bodily and intimate engagement through movements and direct skin contact. To achieve that aim, I placed, ideated, and explored materials on my own body and of others (Beuthel & Wilde, 2017, p. 7; Tomico & Wilde, 2015, p. 4). I engaged in a conversation with materials (Schön, 1983), aiming to deeply understand and tinker with them (Karana et al., 2015, p. 41). I searched for representations of specific somatic experiences by deeply engaging with their bodily impact, asking myself: how was I affected bodily, how did it make me feel? The sensation of physical materials on my body became a manifestation of those reflections. I asked colleagues to wear early prototypes of The Armor to gather initial, somatic feedback. For instance, the materials were stiff, restraining, skin-cutting metal net; soft, comforting faux leather; semi-transparent plastic material. I used, e.g., a metal net to represent my somatic experiences of not responding and moving freely, thereby, protecting me and my emotions. And I combined semi-transparent materials with non-transparent faux leather (Figure 4), symbolizing my conflict related to 'being professional', meaning, wanting to be open and honest, but also not sharing everything and maintaining boundaries.

THE ARMOR OF A RESEARCHER

The Armor consists of four wearable elements: a vest, a collar, a shoulder-piece, and a mask (Figures 6-10). They are not attached to each other. They can be combined in various ways, which allows for expressing diverse experiences, constraints and protective measures. The following will detail the elements of The Armor and the intentions I had while making them.

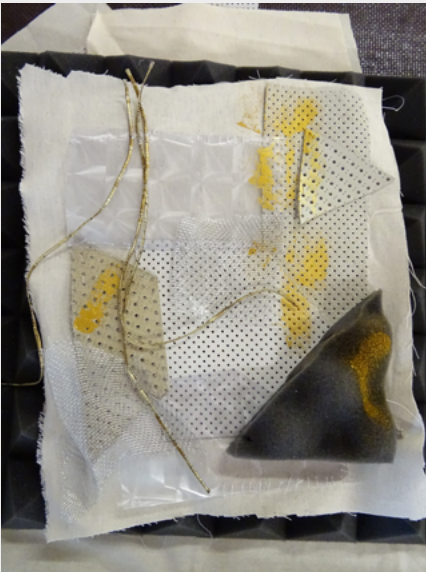


①



②

Figures 4-5: Impressions of the making process: (1) mood board, (2) sketches, (3) material board, (4) placing materials on the body, (5) author working on a prototype. Photographs: Janne Mascha Beuthel, 2020.



③



④



⑤

The first element is a vest (Figure 6). It is made of cotton fabric and faux leather, which symbolizes protection and defense due to its durable properties. The cotton fabric was pleated to create a shield-like aesthetic. The vest was painted to achieve a metal appearance intended to look like a conventional armor. The vest is the base of The Armor. It simultaneously protects and insulates from an encounter. It is a shield, covering, concealing, and, through its stiff material, constraining the body. I envisioned the vest to represent the role of the researcher that I enact during research encounters. When engaging with participants, I introduce myself as a researcher, act and dress in a certain way to appear professional and capable of leading the endeavor; metaphorically, I put on the vest to present myself as a researcher.

The second element, the collar, is worn around the neck and shoulders (Figure 7). It is made from faux leather combined with semi-transparent plastic material. The plastic distorts the surface of the faux leather. It gives an illusion of transparency without being actually transparent. The collar is an additional shield that covers the heart, metaphorically, covers emotions. It manifests my feelings of having to distort reactions to appear more professional. This can be an act of protecting myself from being assailable. At the same time, it can constrain me from allowing vulnerabilities in conversation with participants. The materials represent situations in which I negotiate transparency, i.e., decide whether or not to share personal stories and uncertainties.

The third element is a shoulder piece that is wrapped around the neck (Figure 8). It consists of a metal net, plastic, and faux leather. It lets the shoulders appear increased in size, aiming to make myself appear 'bigger', meaning more impeccable, mature, knowledgeable, possibly fulfilling the expectation of being and meeting a researcher. At the same time, the edges of the metal net are sharp, they cut into the skin and restrict movements, especially of the head. When wearing this element, the viewing direction is controlled: the person directly in front is brought into focus, not allowing for many distractions.

The fourth part is a mask (Figures 9 and 10). It is made from a metal net, spray paint, and golden ribbon. It covers the mouth and nose and leaves the eyes mostly uncovered. Its materials are semi-transparent, allowing a distorted view of the face. The mask manifests the ambiguity of my experiences: On the one side, I want to protect myself, not to share too many personal details; on the other side, I want to talk openly, express thoughts and vulnerabilities. The mask aims to critically question how authentic I can be in research, how much of myself is part of the work I do, and what remains undisclosed. Not talking about certain insights or information that might appear study unrelated or not appropriate for a formal publication, can result in certain experiences never being brought to the foreground, never written and reflected upon.



Figures 6-10: The elements of 'The Armor' worn by the author: (6) vest, (7) collar, (8) shoulder piece, (9-10) mask. Photographs: Moritz Kubesch, 2020.

DISCUSSION

Bardzell *et al.* (2015) explore how Research through Design objects contribute to knowledge production in HCI. They claim that “knowledge is unfolded in objects” (p. 2,094), meaning not only the ‘intentions’ of the person making the object are highly relevant (p. 2,093), but also that “*the critical reception of objects can also articulate and develop its knowledge impacts*” (p. 2,095).

The Armor was shown during a one-day exhibition at a media art festival, where I presented and discussed it with visitors. The visitors were able to see The Armor and touch the materials. Unfortunately, due to COVID-19 related restrictions, they were not able to wear The Armor. Visitors were my colleagues, friends, and strangers with or without experience in research. To present an artifact that is based on autobiographical experiences means to formulate vulnerabilities openly. I felt very exposed as I revealed my reflections and actions, positive and negative ones, especially as some of my colleagues and supervisors would review the work. The reactions to The Armor were very different, depending, e.g., on personal relations to the topic. In the following, I outline some themes, associations, and questions that emerged — these point to the knowledge and insights that evolve from The Armor.

Professionalism and emotions

Many discussions revolved around questions like what or who is professional? How should a professional researcher act, appear, behave? Some visitors related to my experiences of encounters where interviewees perceived me as ‘too young’, which equated to them as ‘not professional’. Visitors shared stories of not being perceived as professional based on their height, appearance, gender, or spoken language. This could happen when interacting with participants that might have

an idealized image of a researcher, during teaching, meetings, or when interacting with colleagues and supervisors. The term 'researcher' often entails a certain image or expectation of how one should look, dress, act, speak, which does not reflect the lived reality of people that practice research.


The conversations during the exhibition led to questions around emotions: Can you be professional and react emotionally at the same time? Should emotions be part of scientific research? Visitors shared that they feel pressured to hide, repress, or ignore their emotions to be able to maintain 'neutral', to fulfill research aims and expectations. The pressure of behaving professionally is an issue that has to be brought to the foreground. Balaam *et al.* deliberately engage with emotions they experience and call other designers and researchers to report on and deeply engage with their emotions as crucial elements in research (2019, p. 10). The Armor is an autobiographical, somatic response to their call. It is a starting point for a material-driven practice of exchanging and discussing experiences of doing research. Moreover, the insights from visitors point towards a need for redefining professionalism, reshaping images, narratives and connotations to reflect actual researchers. For future iterations, I envision The Armor to be worn by (i) Ph.D. students, who might share my experiences or extend them based on their personal stories; (ii) researchers, who are not Ph.D. students (anymore), which would bring challenges and difficulties of an early-career researcher to their attention; (iii) the interviewees who inspired The Armor, to encourage conversations and reflections about their perception of a 'researcher'.

Expressive materials

The Armor fostered conversations about, e.g., professionalism, challenges of doing research, and insecurities. The materials used to make The Armor and its appearance detached these conversations from myself and my personal stories, and instead allowed others to relate their own experiences to The Armor. Material metaphors were enabling discussions about negative emotions of discomfort, failure, and mistakes. Some visitors envisioned how their armor would look. They imagined, e.g., additional protective shields, or a weapon to enter research encounters. One visitor described a colorful suit to overplay insecurities, another shared she would wear a see-through armor to reveal, but also protect her 'real self'. By representing personal insights as physical materials, and approaching professionalism through material thinking, some experiences might be emphasized, mitigated, exaggerated, or distorted, yet, in any case, materials can enable and empower the formulation of issues, oppressions, and expectations that are usually not openly discussed. Materials can be "expressive entities" (Höök *et al.*, 2019, p. 6) that become discussion tools and empower the manifestation of underexplored or neglected somatic experiences. The Armor can be inspiring to oth-

er practitioners who intend to engage with issues through material explorations and provocations, and researchers looking at different means to evoke discussions rooted in personal stories and experiences.

CONCLUSION

The Armor is not intended to be a solution for issues a researcher might face; rather the autobiographical soma design aims to inspire others to (critically) reflect on expectations they aim to fulfill, protective measures they undertake, and their somatic engagements and oppressions during research encounters. The Armor is one exemplary case of how to physically manifest embodied experiences of researching materials. The knowledge that The Armor entails is constantly expanding and co-created, e.g., by writing about it in a paper. It is not a finished entity; instead, it enables and provokes further discussions on professionalism and the role of researchers and their experiences. 

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