

The Deep Body

Exploring users' insides through design fiction

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Design approaches in the last two decades have shown extensive interest in and developed diverse strategies for taking users' bodily capabilities and embodied experiences into account both within the design process and in the design outcomes. This workshop focuses on one specific way in which users' bodies have been characterized and addressed by design practice across such diverse approaches as wearable technologies, design for self-tracking, somadesign, etc.: 'the deep body.' In this context, 'the deep body' refers to the various manners in which design activities engage with users' bodies with the consideration that they possess an internal dimension, whether literal or metaphorical, that can be explored through embodied design. Based on this definition, the workshop will actively engage participants in a collaborative exploration of the now and future of 'deep bodies' in design. We will utilize presentations, discussions and embodied and speculative ideation and so build a collection of fictional abstracts that outline design approaches and outcomes, and practice-oriented definitions for considering the 'depth' of the body.

CCS CONCEPTS • Human-centered computing→HCI theory, concepts and models; User models; Interaction design theory, concepts and paradigms

Additional Keywords and Phrases: body-centred design, embodied design, speculative design, fictional abstracts

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1 BACKGROUND

1.1 Embodied users and deep bodies in HCI research

Somatic turn [34] in the field of human-computer interaction (HCI) from the late 1990s onwards has meant intensified interest in and engagement with embodied experiences of future users. Early engagements, e.g. in [39] and [13] soon led the way to a wide range of manners in which users are conceived in embodied terms, including but not limited to considerations of full-body, expressive movement [15, 25, 53], skilled practice [12, 29] and embodied sense making [26, 30]. Based in phenomenological and somaesthetic traditions, among others, scholars argued that designers need to develop vocabularies, tools as well as embodied sensibilities to appreciate and address users' lived, situated, embodied experiences [22, 33, 42, 48]. Such work has been often contrasted with "solutionist" approaches to HCI that rely overly on sensor-based (self-)tracking for solving health problems or self-knowledge and enhancement [2, 21, 24].

Reviewing these developments across HCI, Homewood et al. [21] identify a series of moments, from the introduction of concerns with embodiment to HCI, to the diversification of such concerns, more recently on to more-than-human approaches to the body. In another review paper, Kaygan et al. [28] investigate embodied user representations across design and design-led HCI literatures, and so draw attention to the expanding views as to what aspects of the body can and should be addressed by design activity. According to the authors, one significant aspect of that expansion has been a concern with the "internal," either conceived literally with reference to internal bodily processes, or figuratively by evoking internal senses such as proprioception as well as somatic awareness, achieved e.g. through meditation.

Here we call "the deep body" those conceptions of the user whereby designers imagine and address users' bodies as having an internal dimension, be it literal or figurative, that can be accessed through embodied design practices.

In many cases, the insides refer to bodily processes that are often inaccessible by regular senses. HCI research, including studies of bodily experience, has made widespread use of biosignals [1], such as heart [41] and breath rates [47]. Research through design examples have utilized tracking of as well as creative engagement with bodily fluids such as menstruation blood [9, 16], breastmilk [19] and saliva [20]. The concept of embodied interaction has been proposed as a way to involve HCI field capitalize more effectively on the complexity and plasticity of physiological systems, with references from designing for circadian rhythms and eating habits [44].

In other cases, the "insides" refer to internal senses, also formulated as the "feel dimension:" how one experiences the world from the first-person point-of-view through proprioception and spatial awareness, but oriented towards the world as action potentials [31, 48]. This sense of somatic experience has been further expanded, particularly by inspiration from somaesthetics, in order that design research can engage with embodied, affective states and felt experiences. Somadesign [22] applies practices such as meditation, Feldenkraus and Alexander-technique [23], to de-habituate embodied experience, turn attention inwards, reflect and foster a deep understanding and aesthetic appreciation of "inner experiences" of the body and its parts, processes, functions and movements, such as breathing [52], bowel function [45], muscle movements in the pelvic area [46]. Somadesign thus cultivates somatic connoisseurship [23], that is trains designers' as well as users' aesthetic sensibilities so as to let them achieve a non-habituated, deeper and more nuanced experience and understanding of their own body.

1.2 Design fiction as a means to explore deep bodies

Speculative and Critical Design, along with Design Fiction, have primarily been employed to adopt an anti-solutionist approach in HCI [14]. Speculative design seeks to challenge prevailing cultural and societal norms by crafting artifacts that embody the contexts, ideas, ideologies, and narratives of future societies [14]. Critical design, on the other hand,

diverges from speculative design by deliberately engaging with future scenarios in a critical manner [14]. Design Fiction, a central tool in speculative and critical design practices, encompasses the practices of world-building, character creation, design, and speculation [5]. It has garnered increasing attention from HCI researchers through the creation of fictional abstracts [11], user studies [5], fictional probes/prototypes [37], and even fictional papers [32]. Design Fiction enables the depiction of worlds influenced by technological artifacts, incorporating stakeholders often overlooked, such as non-human actors or marginalized communities. It offers a balanced perspective on the future, presenting both utopian and dystopian scenarios [51], or what is termed as “ustopias” [36]. While Design Fiction involves narratives of unknown futures, its primary goal is to provoke reflection on the present, prompting sense-making, action, and paradigm shifts [6]. For instance, a Design Fiction narrative about habitation on Mars may spark reflections on the necessity for such endeavors and how to address environmental transformations caused by climate change. Similarly, fictional abstracts can shed light on critical perspectives regarding the potential social consequences and experiences resulting from the integration of technology into bodies and minds [8].

Capable of questioning current and future implications of practices, we argue that design fiction provides a fruitful approach for exploring the established and emergent qualities of specific ways user are imagined, addressed and engaged with in design – in this case, ‘deep bodies’ – that are found widespread across design explorations in the field of HCI. As such, design fiction will be used in this workshop to elaborate on the underlying assumptions and extrapolate design practical as well as societal implications of a specific albeit varied conception of users.

2 WORKSHOP GOALS & THEMES

This workshop aims to bring together practitioners and researchers to discuss now(s) and future(s) of deep bodies in design. By discussing our current approaches and speculating futures about how bodies are conceptualized, utilized and intervened in design, we aim to critically engage with the ‘depth’ of how bodies are considered in design practices. Accordingly, in the workshop, we will consider, but not be limited to, the following themes as lenses to examine deep bodies of design:

2.1 Defining ‘Bodies’ and ‘Depth’

Examining a realm in design where the conceptions of bodies are fluent and everchanging [21], in this theme, we will critically engage with the ways that we define ‘bodies’ and ‘depth.’ We will discuss for instance: What are the boundaries of a ‘body,’ e.g. molecular definition of bodyhood, homeostasis and plasticity, more-than-human approaches, etc.? What metaphors do we use to understand the depth of bodies, e.g. surface/depth and inside/outside? What does it mean to look ‘inside’ oneself and/or others in techno-centric, biomedical, psychological, empathic, etc. ways? What do we expect to see when we look ‘inside’?

2.2 Dealing with Depth through Designs

Design and design research has focused on exploring the design outcomes that might enable a deeper understanding of bodies. We can identify some trends in that direction: For example, **(1) design as excavation** where designers look under the skin for innovation potentials, showing interest in biological knowledge (e.g. use of biosensors, inbodied design [44] etc.); **(2) design as translation**, where designers render all kinds of bodily experiences visible and/or tangible, trackable and open to manipulation and experience (e.g. [17, 18]); **(3) design as guidance**, where designers guide and aid users towards better understanding, identification, management and repair with an eye to personal objectives, challenges and concerns (e.g. through tracking [10, 40], guidance [47], sharing [38] etc.). By discussing and extending these approaches,

in this theme, we will speculate different ways design outcomes can question and extrapolate from existing understandings as to what a deep understanding of bodies means and entails.

2.3 Methods for Understanding Deep Bodies in Design

Researchers are moving away from viewing bodies solely as objects of design and are instead creating methods that put bodies at the forefront of the design process, aiming for deeper involvement and comprehension of bodies in design. These methods include activities like using their bodies to sketch ideas [35], and immersing in design contexts through role-playing, exercises that heighten bodily awareness (i.e., sensitizing [50]) and observations from both first and third-person perspectives [49], as well as utilizing body maps to better attune to their bodies [3]. Our workshop will critically reflect on state-of-the-art methods and speculate new ones to enhance our understanding of deep bodies in design.

3 WORKSHOP STRUCTURE

This one-day workshop will be conducted in person, allowing individuals to not only present and discuss their visions of ‘deep bodies’ in design, but also engage in roleplaying activities in which they will be able to enact and reflect on each other's visions. Two weeks before the workshop, we will prompt participants to submit a brief presentation of their vision related, but not limited, to workshop themes. The workshop will be planned as an all-day, 8-hour-long activity. It will consist of five parts:

- **Show & Tell (2h):** Participants will be invited to briefly present and reflect on their visions. This will enable participants to acknowledge the diversity of views toward deep bodies of design by contrasting and discussing each other's works.
- **Embodied Ideation (1.5h):** Participants will work as a group and select one of the works presented in the previous session. They will use embodied ideation activities (i.e., bodystorming [43], embodied sketching [35]) to create speculative designs based on the selected works by using papers and other simple materials (i.e., experience prototypes, paper prototypes). These ideas will create a basis for the role-playing activities in the following sessions.
- **Lunch (1h)**
- **Role-playing & Presentations (2h):** The groups will use ideas to engage in a role-playing activity to present the visions in an embodied manner. They will be asked to imagine characters to act as and contexts to role-play in to explore and present what kind of worlds, experiences and societal impacts the ideas could bring in. During the process of planning their role-playing presentations, they will be supported with templates for creating characters, and roughly defining a context for their role-playing presentations. After half an hour of preparations, each group will make a presentation in which they role-play as characters within the visions.
- **Reflective Discussions & Writing Fictional Abstracts (2h):** Building on the prior sessions of presenting, prototyping and enacting the visions for deep bodies in design, we will have a discussion session where we reflect on opportunities and challenges of understanding deep bodies in design. This discussion will aim to combine and contrast approaches, as well as outline critiques regarding the now and future of deep bodies in design. This discussion will also focus on outlining several Fictional Research Abstracts [32] based on the points discussed and the visions presented. For this, the organizers will create a template to help participants write the abstracts. Finally, we will discuss further steps (i.e., how to turn the visions & fictional abstracts into a publication and how to stay in touch for further discussions and collaborations).

4 INTENDED OUTCOMES AND DISSEMINATION PLANS

Given our aim of gathering individuals interested in critically engaging with the ‘depth’ of how bodies are considered in design practices, we intend to use this workshop as a starting point for unpacking now(s) and future(s) of deep bodies in design. One of the outcomes we envision this community to make is a collection of fictional abstracts that map out critical and speculative methods, designs and definitions for ‘depth’ of body in design research. We believe that such a contribution could fit follow-up joint publications, e.g. an extended abstract in CHI about fictional visions for ‘deep bodies (similar to [4, 8]) and a full paper in IMWUT about defining, designing for and methods of achieving deep bodies in design. Second, we intend to use the workshop as a starting point for a larger, possibly ongoing conversation around exploring deep bodies in design. To achieve this, we will establish a Discord channel with the participants for future collaborations and discussions. To attract a wider audience, we will also put together and distribute a visual poster that summarizes the outcomes of the workshop through social media channels and a workshop website.

5 CALL FOR PARTICIPATION

This one-day workshop invites researchers and practitioners to discuss how bodies are conceptualized, utilized, and engaged with in design as things with depth. Throughout a mixture of presentations, discussions, and embodied and speculative design activities, we aim to critically engage with the ‘depth’ of how bodies are considered in design practices.

We invite candidates to submit a 2-6-page pictorial or paper (i.e., position papers, case studies, design fictions, speculative and critical designs). The submissions are expected to present a current or a future vision about how the view toward bodies in design are or could be deepened in relation to one or more of the three workshop themes: **(1) Defining ‘Bodies’ and ‘Depth’:** What is a body and what does it mean to have a ‘deep’ understanding of bodies in design? **(2) Dealing with Depth through Designs:** In what ways do we and can we achieve a “deep” understanding of bodies through design? What can we design to do so? **(3) Methods for Understanding Deep Bodies in Design:** What kind of design methods are there, could there be to understand and address bodies in their depth? The submission should be in PDF and submitted via e-mail (hkay@sdu.dk). They will be reviewed based on relevance and contribution to the workshop.

6 ORGANIZERS

Harun Kaygan is Associate Professor of Design Culture at the University of Southern Denmark, Kolding. He is interested in the cultural and political role and implications of design practices and outcomes. His current research concerns how design engages with users’ bodies and well-being today.

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Oğuz ‘Oz’ Buruk is an Assistant Professor of Gameful Experience at Tampere University, Finland. His research focuses on designing gameful environments for various contexts such as body-integrated technologies, computational fashion, posthumanism, urban spaces, extended reality and nature. He frequently employs methods such as speculative design, design fiction and participatory design.

Ida Jørgensen is a postdoc at the University of Southern Denmark, Kolding. Her research focuses on how the (gendered) body is imagined, modeled and enacted in design of games and playable artifacts and technologies.

Linus Kristupas Gabrielaitis is a doctoral researcher at the Gamification Group, Tampere University, Finland. His research focuses on games and gaming, map sketching and diagramming as speculative/ artistic practices for more-than-human design.

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We have used ChatGPT 3.5 in the Abstract and Section 2 as a rephraser (see [7]).

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