Identifying Critical Points of Departure for the Design of Self-Fashioning Technologies

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Abstract

Designing technologies that clothe, adorn, or are otherwise placed on the body raises questions concerning the role they will play in dressing ourselves. We situate self-fashioning – or the process through which we stylise and present our bodies – as a complex practice where a series of social, material, and contextual factors shape how we present ourselves. Informed by reflective discussions and projective design tools, we contribute three critical points of departure for self-fashioning technologies: (i) Purposeful examining discomfort as an ongoing phenomenon, (ii) Supporting mimesis and visibility as qualities to be negotiated, and (iii) Envisioning the multiplicity of the body. We call for the design community to help devise fashionable technologies that are sensitive, caring, and responsive to the complexities of fashioning our bodies.

CCS Concepts

• **Human-centered computing** → **Interaction design theory, concepts and paradigms**.

Keywords

self-fashioning, fashion, fashionable technology, wearables, soma design, body-centric design

1 Introduction

Self-fashioning, or the decisions concerning our clothing, jewellery, physical appearance, and other ways we choose to "stylise" our bodies [27, 71], is an important subject for Human-Computer Interaction (HCI). Wearables [36], e-textiles [80], and other forms of technologically-enhanced fashion [79, 81] have become increasingly common over the last decade. However, the ways in which we choose to present our bodies are closely entangled with our immediate, material, and socio-cultural contexts [18]. While we design technologies that will progressively become part of our everyday self-fashioning practices — such as technologies with which we dress [39], adorn [20], or otherwise mediate the ways in which we present ourselves [59] — we will inevitably make decisions on how our designs *should* make bodies look and how such technologies *should* look on the body. As such, we feel the need to move beyond the purely functional aspects of wearables or other electronic devices designed to be on the body and explore how fashionable technologies — situated at the intersection of design, science, and technology [70] — can support us in curating and presenting our identities through the lens of the clothed body. Our motivation is to better understand how we fashion our bodies in the professional, social, and political contexts that we navigate in our everyday lives,

Figure 1: A detail of Rachael's collage, in which she explores her relationship with craft and its aesthetics.

and to define a design space for self-fashioning technologies that foreground the body, identity, and cultural norms.

In this paper, we unpack the complexities of self-fashioning as a somatic practice where *conforming* and *transgressing* are constantly negotiated. We, the authors of this paper, have professional backgrounds spanning interaction design, fashion design, graphic design, and architecture. As researchers, our work also touches upon subjects of ethics, cognitive semiotics, gender studies as well as feminist philosophy and technoscience. All of these perspectives were brought together in an exploratory and creative workshop intended to foster critical and generative dialogues among our different ideas and experiences. To spark the conversation, we structured the workshop around three different activities. The first one invited us to wear outfits that represented our personal styles and preferences. The second activity combined soma design methods with a fashion-inspired exercise, encouraging us to reflect on our dressing choices and the experience of seeing and being seen by others. In the final activity, we created collages using craft materials and photographs to envision future versions of ourselves, which also facilitated the articulation of our personal and professional experiences. The discussions from the workshop were then analysed and categorised into themes that deepened our understanding of the intricate design space where social expectations and norms are enacted on our bodies.

Informed by the discussions held in the workshop, we contribute three critical *points of departure* for the future of self-fashioning technologies in HCI: (i) Purposeful examining discomfort as an ongoing phenomenon, (ii) Supporting mimesis and visibility as qualities to be negotiated, and (iii) Envisioning the multiplicity of the body. They are intended as considerations for designers when embarking on the ideation of self-fashioning technologies. Rather than presenting them as rigid guidelines, we see these points of departure as invitations to embrace the diversity and dynamic nature of our clothed bodies throughout the design process. We adopt the epistemic position that clothing and other forms of adornment are

an interface between our bodies and the external world [70], and as we engage in practices that protect, embellish, or conceal the body, we simultaneously transfigure our senses of self [73]. Situating ourselves in this non-dualistic and relational view [34] allows us to deeply explore how our bodies are entangled with socio-cultural forces that have shaped our habitual ways of presenting ourselves [26]. Through doing so, we seek to question and examine the role that self-fashioning plays in our daily lives and communities, as well as the social rules that become ingrained in our bodies [29]. Such interrogation is necessary if we are to design self-fashioning technologies that make space for the examination and affirmation, alongside the change and transformation, of socio-cultural attitudes.

In conclusion, we call on the design community to help devise fashionable technologies that are sensitive, caring, and responsive to the complexities of dressing the body. This contribution may be relevant to practitioners working with technologies such as dynamic fabrics [50], electronic textiles [49], shape-changing artefacts [43], machine-learning garments [44], and digital jewellery [45]. It might also resonate with designers at the intersection of fashion and technology, researchers seeking a critical perspective on fashion technologies, or those interested in the underlying ethics of this design space.

2 Theory and Related Work

In this section, we (i) outline some known complexities of self-fashioning as a practice and (ii) discuss how we experience ourselves as self-fashioned bodies.

2.1 Mapping the Complexities of Fashion and Self-Fashioning

Fashion, in the broadest sense, can refer to dress, appearance, and style; socio-cultural forces; material cultures; a commercial industry designing, manufacturing, and selling commodities; or a complex

system of signification [66, p.2]. There are many academic attitudes towards fashion. Some argue that fashion can be regarded as a form of art [53]; others point to the social and historical significance of fashion [52]; many critique fashion as an environmentally destructive industry that fetishes overconsumption [55]; and yet others argue that fashion can be a productive site of feminist critique [60].

We adopt the position that fashion can be regarded as material articulations of gender, sexuality, culture, and status [18], and as such, negating fashion as an academic subject can disadvantage critical perspectives on the material factors that shape our bodies [2]. For example, the socio-cultural standard of beauty [85] is politically entangled with structures of gender, sexuality, and post-colonialism, serving to position women as objects of the male gaze [46] and upholding attributes of white women within heteronormative culture as the global standard of beauty [67]. This diminishes bodies that fall outside the narrow parameters of fashionable beauty and can even glamorise the oppression of certain bodies [67] while appropriating and commodifying the ways of dressing that emerge from underrepresented circles [3, 6].

Acknowledging fashion as a site of complexity, we turn to *self-fashioning*: the process through which we stylise and present our bodies. In 1980, Greenblatt adopted the term 'self-fashioning' to describe the historical construction of public personas in the Renaissance, such as in how men and women would dress to portray themselves as embodying masculine and feminine virtues of that time [28]. As such, one interpretation of self-fashioning is the desire to create an identity that reflects who we want to be [51], with clothes seen as the medium through which we represent ourselves and relate to others in various settings [27]. Often, self-fashioning can involve trying to adapt to certain professional, social, and cultural norms [28].

However, Foucault emphasised that exploring alternative ways of constructing identities — through self fashioning practices — can open up spaces of resistance [22]. This interpretation of self-fashioning has a distinctly activist character, delineating spaces of protest by transgressing norms and boundaries [77]. This is also reflected in HCI research, including work by Pataranutaporn and colleagues, which probes the boundaries of empowerment and oppression in the design of garments that access a woman's hormonal data [61]. Similarly, Okerlund and colleagues invited a community to create personal statements through dress, probing feminist, gender, and transdisciplinary perspectives on inclusion and exclusion in maker spaces [57]. Halperin and colleagues studied how the materiality and potentiality of electronic streetwear can provide new opportunities for social movements [30]. Furthermore, Schiphorst and colleagues created *Wo.Defy*, an interactive garment that explores the cultural history of Chinese women who challenged marital norms in the late 19th and early 20th centuries through their hairstyles and dresses [69]. Finally, Buford and colleagues explored political statement-making through mask-making practices during the COVID-19 pandemic in the United States [7].

These ideas of self-representation have already inspired enquiries in HCI, including outfit-centric approaches for interaction design [39]; how mobility in wearables creates space for fluid representations of self [41]; how the customisability of wearables allows people to incorporate them in their personal style [36, 40]; and how boiler suits [19] and even memes [20] play an important role in the

social interactions among Finnish university students. Lakhdhir and colleagues also investigated how hobbyist sewers use clothing for self-expression, shedding light on the expressive side of sewing technologies [47], while Pratte and colleagues explored the interplay between empathy tools and catwalk fashion technology, taking as a starting point for their design work the anxiety a woman feels when walking alone at night [65].

We are interested in how these two different characters of self-fashioning — conforming and transgressing — sit in contention with each other. Our pathway to exploring this contention is through the manner in which we experience social expectations and norms being enacted on our bodies. To explore this more deeply, we turn to embodied and somaesthetic interpretations of self-fashioning.

2.2 Experiencing the Self-Fashioned Body

Fashion is inseparably linked to the body. Fashion theory has traditionally focused on semiotic analysis (e.g., [4]), examining fashion as a visual or symbolic phenomenon rather than engaging with the embodied or experiential aspects of dress [54]. However, Warwick and Cavallaro argue that the boundaries between how we choose to represent our bodies and their material embodiment are blurry [10]. They argue that "*dress actively participates in the emplacement of corporeality as a discursive phenomenon and contributes vitally to processes of cultural mythologisation and legitimation. At the same time, it maximises the body's multiplicity by grafting upon it additional layers, surfaces and personas, thus forging a prismatic construct*" [10, p.7].

We combine several strands of feminist philosophy to help us critically broach the design space of self-fashioning technologies. First, we draw on the feminist philosophy of performativity proposed by Judith Butler [9], which we use to interpret fashion as part of a performance that makes our bodies "matter" because it alters the way we look and affects how we can participate in different social or cultural contexts. Because we can dress our bodies in different ways, we shift through different personas as we participate in different contexts. However, despite its centrality, the body itself is often treated as a simple "clothes hanger" for garments [10], rather than a central "being-in-the-world" through which meaning is made [29]. To bridge this gap, we draw on corporeal feminist Elizabeth Grosz, whose work demonstrates that this performativity is not simply limited to the surface of bodies, such as the ways we dress, but is deeply engrained in our very corporealities [29]. This perspective resonates with Butler's idea of the body as "*stylised*" into existence through cultural and performative processes, which produce a lived, sexed body [8]. Finally, we draw on the work of Elizabeth Wissinger to understand fashion from a feminist perspective; as a performative and cultural practice that fuses self, body, and garment together as one [84]. It is through that lived body that it is possible to have interactions with other bodies and objects in the world, including the ways in which it is observed by others [24]. This points towards more experiential approaches to understanding fashion, such as that of Negrin, who argues that Merleau-Ponty's phenomenological perspective can be applied to understand fashion as a kinaesthetic and corporeal phenomenon; in other words, a phenomenon that affects how we can move through the world [54].

The emphasis on the materiality of fashion raises the question of how we might understand the embodied experience of dress as a medium through which we experience the world [23, 54]. Here, we turn to a somaesthetic interpretation of self-fashioning. Shusterman has interpreted self-fashioning as a cultural practice that, not only shapes external appearance but also transforms embodied experiences, highlighting the body as a site where aesthetic and cultural values converge [73]. There are many ways in which societal expectations and norms become ingrained in our bodies. For example, somaesthetics draws attention to the *cult of the body*, which causes many to invest considerable time and money in physical activities, dieting, and even plastic surgery [71]. Popular media — of which fashion is a driving force — often promotes stigma towards bodies that may not be considered "normal". Shusterman argues that "*besides encouraging media pluralism and interactivity, something must be done to discourage the media's tendency to establish oppressive norms of external body form through advertising that systematically suggests that pleasure, success and happiness belong only to the young, thin and beautiful of certain race*" [71, p.45]. As such, even those of us who try to avoid participating in transient and ephemeral fast fashions can still be subject to expectations of how we should look, act, and dress.

When we discuss the body in self-fashioning, we adopt this somaesthetic position that considers the body and mind to be a singular whole [35]. This position is informed by perspectives from both soma design [34] and felt ethics [26]. Soma design involves designers becoming attentive to the aesthetic potential of our design materials. This facilitates a deeper understanding of how interactive technologies will be experienced [34]. We adopt this attitude to make space for critical reflection on the ethics and values of the way we dress [26]. In doing so, we seek to disrupt the habitual practice of self-fashioning, explore how social norms have come to shape our values and attitudes concerning dress, and unpack how we participate in these norms and expectations through dressing our bodies.

Our purpose here is to question our own experiences of self-fashioning in an attempt to articulate the complexities inherent in this bodily practice. In doing so, we aim to identify and unpack critical points of departure that can inform practitioners broaching this design space.

3 Research Process: Fabricating Critical Fashion Futures

We — seven authors — gathered for a workshop intended to foster critical and generative dialogues between our different ideas and experiences. This full-day workshop was conducted on campus at KTH Royal Institute of Technology in Stockholm, Sweden. All of us were known to at least one other member of the group prior to this workshop, either having collaborated directly or more loosely belonging to the same extended research network. Due to the potential of this topic to touch upon matters such as gender, sexuality, or race, we decided to keep this workshop small and intimate, with the researchers participating being open to sharing their experiences and known to treat sensitive topics with both criticality and care. Given that no external participants were recruited for this research, the workshop did not require formal ethical approval in Sweden.

As our epistemological position considers clothing as intimate interfacing connecting the inner and outer, we also conceive self-fashioning as a type of knowledge that requires the wearer to attune to their living bodies in relation to the world. In the same way that prototypes encapsulate knowledge in design [86], we consider self-fashioning as a form of somatic knowledge we acquire materially, implicitly, and generatively. By trying to access this somatic knowledge — assisted by the projective affordances of our workshop activities — we aim to uncover part of the complexity encapsulated in our bodies, including the influence of socio-cultural factors that have shaped our self-fashioning processes.

The following are the profiles of the participants at the workshop:

- **Rebeca** is an interaction designer with a background in communications and media. She leverages feminist perspectives to explore body-centric technologies.
- **Rachael** is an interaction design researcher with a background in fashion design. She studies embodied ethics in designed technologies.
- **Mafalda** is an interaction design researcher with a background in architecture, focusing on forms of designerly knowledge.
- **Kash** has a background in psychology and cognitive semiotics and his research focuses on human perception of embodiment in anthropomorphic, artificially intelligent technologies.
- **Dominika** has a background in cognitive sciences and gender studies. Her research involves theoretical analyses of relational boundaries between social robots and humans through the skin.
- **Maria** has worked with theatre, performance, and design pedagogies. She researches the interplay between metric culture and embodiment through feminist epistemologies and existential media theory.
- **Claudia** transitioned from graphic design to interaction design research. Her research focuses mostly on introspective, first-person, and somatic design practices.

The workshop was purposefully kept open and exploratory. However, we designed three activities as starting points to stimulate the conversation. First, we each wore clothes to the workshop that we felt were representative of our personal styles and preferences regarding dress. At the beginning of the workshop, we introduced ourselves and described the clothes we were wearing. This included garments and accessories that had personal value, had been acquired during an important moment in our lives, or were garments we wore regularly and often for various reasons. Second, we engaged in an exercise that we called the "*Aesthetics of Posing*". This exercise combined soma design methods [34] with a fashion-inspired activity. It was intended to provoke reflection on how we had chosen to dress and how we experienced seeing and being seen by each other. As with other soma design methods [5, 83], this approach was adopted to bring our lived experience to the fore by defamiliarising the ways in which we normally interact with each other — in this particular case, by placing our bodies and our chosen garments under each others' close scrutiny. Through eliciting different feelings and reactions, the activity was designed to make us more aware of our bodies and how we experience ourselves

Figure 2: Some of the materials used in the *Fabricating Critical Fashion Futures* workshop.

being perceived. Then, by articulating these embodied sensations, we expected to come to a deeper understanding of how our bodies had been shaped by our broader lived experiences [26]. During the activity, we took photographs of each other to use as collage material. The third activity was called "*Fabrications of Fashion*". This activity took some loose inspiration for the fabulation method intended to foster critical speculation on future scenarios [38, 75]. In our workshop, we created collages that explored a future version of ourselves. These collages served as projective artefacts that assisted us in verbalising our perspectives and facilitated sharing reflections that made us vulnerable [13, 26]. The photographs from the first part of the workshop served as a base for our collage work. We used craft materials — including re-appropriated fashion magazines, fabrics, and sequins — to sketch envisioned future selves that could have a different relationship to the fashioning of their bodies (see Figure 2).

Throughout the day, we gathered four hours of recorded discussions and our individual notes, as well as the seven collages that we created during the workshop. The first author initially grouped our discussions into four discussion themes, illustrating some of the complexities of self-fashioning practices. As our approach is grounded in phenomenology and focuses on understanding experiences and ways of being in the world, three authors reflected and analysed the transcribed conversations in relation to the collages with the aim of deepening our understanding of how we each experienced the themes. The remaining four authors of this paper were then invited to review our work and offer their input in order to deepen the connections between perspectives or to more clearly articulate the differences in our experiences. This process enabled us

to arrive at a deeper understanding of the complexities associated with self-fashioning. We present and develop these conversations in Section 4, before identifying critical points of departure for self-fashioning technologies in Section 5.

4 Conversations on Self-Fashioning Practices

This section presents and conceptually develops the four discussion themes developed during the workshop *Fabricating Critical Fashion Futures*: (i) The paradox of visibility, (ii) Fashion politics as outsiders, (iii) Inner critic; alter ego, and (iv) Carefully crafted ugliness. In each case, we discuss and develop how the two different characters of self-fashioning — conforming and transgressing — sit in contention with each other, and how we encounter this in our lived experiences. We include examples of our collages where they support our articulations. It is important to note that these discussion themes are not mutually exclusive, and we expect there are many other sites of complexity that could be identified in this design space.

4.1 The Paradox of Visibility

Our first theme concerns how we experience our bodies as being (in)visible in relation to different communities and contexts. We discussed how self-fashioning practices mediated the visibility of our bodies, for example, dressing in a certain way to direct attention away from one part of the body towards another, potentially controlling how comfortable we felt. However, this can also raise additional questions about self-perception: "*what does [wanting to dress that way] mean for how you view yourself?*".

Figure 3: Kash's collage represents his personal journey of self-discovery and embracing the queer and the fabulous.

Conforming can be not only about the pressure to meet societal expectations, but also about expressing belonging to a community. As Kash explained, "*[My collage] is a representation of the journey that I'm already on, which is embracing the queer and the fabulous. And also kind of balancing it, as I do like to dress relatively conservatively and stick to the more classical silhouettes. But I've always wanted to have like a fabulous confidence and just go out. And that's why it is a party going on [in the background], because I usually dress up when I go partying. I don't so much care about dressing up for work. But when I'm going out, that's when I care. More often than not, when I'm going out is when I'm in queer spaces*" (see Figure 3).

Belonging and not belonging are powerful experiences, but they are not necessarily binary. Kash noted, "*For me is being seen by other queer people. In gay spaces, the 'standard gay man' is muscular, white, tall... things that I will never be. I'll never be muscular, I can never be white, you know? So there's almost a feeling of... I'm never going to belong, no matter what I do. So I guess it's an effort to try to belong in another way. Of course, it is freeing in the sense that I'm around people that are like me, that think like me, that understand me in ways that other people maybe can't. But at the same time, I also feel a little bit invisible being a person of colour in such spaces.*" Here, belonging and not belonging are not two separate experiences. Our bodies can be situated across multiple dimensions of our socio-cultural context, which can lead to feeling like a part of and an outsider to the community simultaneously. For Rachael, it is not "*a very strong binary between being visible and being invisible; it is more about what part of you is seen*".

However, transgressing — either intentionally or by being considered an outsider — is an equally complicated experience. Claudia experiences herself particularly visible in certain contexts: "*I don't feel invisible. Sometimes, I feel extremely visible as a Latina woman in a predominantly white environment. For me it's how do I make myself less visible to others when I want to? It's not the other way around.*" The way in which we are perceived by others is entangled with socio-cultural categorisations of different bodies. For example, Kash reflected that moving from India to Europe prompted a shift in his self-perception due to how he was perceived by others in that new context. This is exacerbated by the fashion industry, which Rachael argued can perpetuate essentialisations and fetishisations through fashion editorials that appropriate and glamourise or sexualise the aesthetics of different cultures. Mafalda had experienced being essentialised, not being seen as an independent individual, but as a "*type*" according to the category into which they have been assigned: "*It's not really about me; it's about whether or not somebody else is into that type.*" Kash had similarly experienced being fetishised as a queer person of colour. It is not possible to fully disentangle ourselves from these associations; for as much as we try to conform with our current socio-cultural context, we can still be regarded as not belonging. Conversely, if we try to transgress or not make attempts to belong, others may categorise our bodies as belonging to another stereotype.

This theme suggests the potential for self-fashioning technologies to support belonging and participation in different contexts and communities. However, this requires sensitivity and responsivity to how different bodies experience themselves as being visible and

Figure 4: Claudia's collage represents uncertainty around her, particularly illustrated as a beautiful yet bulky suitcase she carries in her status of being a foreigner in the move.

invisible within those different contexts and communities. Further, there is a need for criticality around how fashionable technologies themselves might change the way that people experience their bodies as visible.

4.2 Fashion Politics as Outsiders

Our second discussion theme concerns the micro-politics or social values of different fashion cultures. We explored this from the perspective of being seven people from different countries who all moved to Sweden for work or study. For example, Rebeca noted how "*Barcelona was reflected in the way I dressed. Bright colours matching the sun and surf aesthetic that surrounded me. When I moved to Stockholm, these clothes came with me. For the first few months, I walked to campus with a colourful backpack with a flower print. It was a print I liked, yet I found it uncomfortable to wear. I hid my backpack under the table as if I didn't want anyone to see it. I ended up buying a beige one. I also did the same with other garments. Little by little, my wardrobe began to be tinged with dark and neutral tones. Unconsciously, I was letting myself be carried away by what I saw around me, trying to blend in.*" Since then, wearing black had now become a comfortable colour that helped Rebeca not stand out from the crowd.

Most of us agreed that we had conformed to a more reserved style of dressing since we had moved to Sweden. We discussed the cultural significance of the Swedish style of dressing, characterised by minimalistic, often non-accessorised, and oversized garments.

While this aesthetic was very uniform, it reflected a very Scandinavian aesthetic in form and function. Rachael reflected that, when she began to work in Sweden, she was told that dressing in a way to overly draw attention to oneself was considered a social and professional faux pas, attention-seeking that could reflect poorly on one's character. By contrast, Dominika noted that in Sweden, she felt less pressure to conform compared to her previous home, as there is a greater diversity of styles in media and other public forums: "*Advertisers with tattoos or piercings are much more visible in the everyday.*" Previously, Dominika was more conscious that if she wore her piercings, then people might associate it with something negative, and she was wary of being reduced to those associations simply because she liked to present her body in a certain way. As such, conforming and transgressing are not simply aesthetic values, but also connect to more deeply held social ones.

When moving social contexts, we can unintentionally transgress by being unaware of those values. For example, Claudia explained how moving to Sweden prompted her to notice the lack of lint on people's clothes. This had not previously been of any significance to her, but then it caused her to feel self-conscious and aware of the lint on her own clothes. Shortly after moving, Claudia materially exteriorised the slight embarrassment of wearing inadequate clothing by encapsulating the lint of her sweaters within an acrylic capsule, which allowed her to directly see and reflect on her feelings. The collage-making process further facilitated her engagement in imaginative speculation regarding this concept of shame, considering the possibility of an artefact that could mitigate the experience

Figure 5: Dominika's collage represents elements that resonate with her aesthetics.

of uncertainty when moving to new cultural contexts, disclosing information that might go unnoticed if not examined carefully (see Figure 4). "*Taking this concept of lint and shame, what if we had a technology that scans your images and tells you, 'Okay, so if you go to a different culture, take into consideration that these are some small things about your fashion that might be a bit off, potentially embarrassing you. This is not about necessarily fitting in the new culture, but it's about having this knowledge beforehand and being able to act on that information.*" As such, conforming and transgressing are part of a process of becoming familiar with a different societal context and its implicit social values, but they nevertheless can cause us to experience uncertainty, shame, and embarrassment in the way we dress. What constitutes a way of dressing that we should or should not feel embarrassed about is also complex, being entangled with societal conceptions of gender, wealth, and status as well as more mundane contextual factors.

This discussion theme suggests that self-fashioning technologies could potentially support or subvert the social values associated with presenting the body in different settings. However, doing so in a meaningful way requires sensitivity and responsivity to how different bodies move and migrate. Further, there is a need for criticality around the values that emerge around fashionable technologies themselves.

4.3 Inner Critic; Alter Ego

Our third discussion theme concerns the societal and professional standards for women and how we experience — and often participate — in these systems in tension with some of our personal ethics

and values. The majority of us identify as women, and we discussed how, while Sweden has strong cultural feminist values, we often still encounter many societal expectations regarding how women should look and behave in our personal and professional lives.

Many of us reflected on how we conformed to particular ways of dressing in professional settings, particularly in earlier or less secure stages of our careers. For example, Mafalda recalled her early professional experiences as an architect, noting that she often found herself in meetings with predominately male colleagues. She noted that "*the way you carry yourself in these meetings is very important,*" which led her to avoid wearing clothes that might be perceived as overly extravagant and unprofessional. However, she also reflected, "*I always thought it was inspiring because the older artists, older women that I would see walk into the room, they actually had let go of this. They would bring in the big earrings and a sassy attitude.*" The standards set for professional attire and behaviour are still problematic, as Rachael noted that she felt the need to adjust to more traditionally masculine ways of presenting her body — such as wearing tailored suits or other clothing — when presenting research at conferences. However, by conforming to these expectations, we also participate in reinforcing them; not only reproducing a masculine aesthetic for professional attire, but also upholding historically white and Western notions of professional dress more broadly.

Further, those of us with children discussed on how we experienced societal expectations differently. Mafalda, in particular, reflected that having children prompted her to try to transgress against the expectations placed on her. "*I used to dress more classic*

Figure 6: Rebeca's collage conceptually represents the idea of an alter ego that shines a light on vulnerabilities rather than hiding them.

than I do now. And I think it's because of my children. They liberated me from trying to look a certain way. There are moments where, you know, I put on a short skirt because 'a mother wouldn't wear that'. That's exactly when I wear it! Because it feels better to not let go of feeling like an attractive woman, which is very easy to lose in the process of becoming a mother." However, we found it difficult to firmly delineate spaces of conformation and transgression in relation to having children, noting how women can experience this expectation from both directions. By dressing like "*a women with children*" one does not conform to the expectation of being "*attractive women*" and by dressing like an "*attractive woman*" one does not conform to the expectation of being "*a woman with children*". This is further complicated by the expectation that, in our societal context, women with children should also continue working, which in turn, reinforces a type of feminism that advocates for women's professional success.

We experienced these numerous societal expectations through feeling insecure and vulnerable, almost regardless of the decisions we made concerning how to present our bodies. This manifested in our everyday practices of grooming and caring for ourselves. Dominika reflected on how she experiences self-doubts even while engaging in everyday routine tasks such as grocery shopping. "*Why do I put on makeup? There's definitely an insecurity for me to be seen as I am, like not crafting it. And that's because I feel like people wouldn't see what's inside me, so I need to put it outside. I need to show that I can dress nicely and be feminine because if I don't put it out there, it's like, 'Who is this person?'*". Dominika's self-fashioning

practice is a way of dealing with perceived insecurities, but also a way of expressing herself. This is reflected in her collage, in which she presented herself surrounded by her personal aesthetic expression (see Figure 5). Rebeca worked with these ideas in her collage-making process, contemplating the possibility of self-fashioning as expressive of vulnerability as opposed to trying to conceal it. "*For me, it's interesting that idea of having an alter ego where you can make your vulnerabilities shine.*" In contrast to the desire to go unnoticed, Rebeca envisions the value of embracing her vulnerability and just shining, without the need to "*hide anything about myself*" (see Figure 6).

However, we also noted that the insecurities and vulnerabilities we experienced were not only caused by the expectations placed on our bodies, but also by our participation in them. Dominika reflected, "*I'm very judgy towards myself. And, of course, that takes the joy out of it. I take ages to craft an outfit that I just wear on any random day. It's like, 'Why is it so important to me? That's such a waste of time.' Sometimes I think 'It's insane how much time I put into this'.*" We noted that self-fashioning as a practice reveals the complexity of conformation and transgression, as in many of our personal, professional, and societal contexts — both conforming to or transgressing societal expectations — are deeply entangled with existing social structures and power dynamics.

This discussion theme suggests that self-fashioning technologies could potentially support people in how they experience insecurity and vulnerability in their body. However, doing so in a meaningful way, requires sensitivity and responsivity to the systems in which

Figure 7: Mafalda's collage representing carefully crafted ugliness. In this piece, she encounters the tension of always having to "make pretty" instead of embracing the richness of ugliness.

the ways in which we present ourselves are deeply complex and entangled. Further, there is a need for criticality around how the role that fashionable technologies will play in the societal expectations placed on different bodies.

4.4 Carefully Crafted Ugliness

Our fourth and final discussion theme concerns the difficulty in disentangling ourselves from conceptions of beauty. We discussed potential ways of transgressing against expectations of beauty. Those of us who worked as designers noted that the pursuit of beauty, or at least the aesthetically pleasing, seems to be a constant. However, in considering when ugliness could bring alternative approaches, we argued that "ugliness" in fashion is not an absence of beauty but rather a distinct aesthetic choice that is often still pleasing. When Mafalda noted that "*the ugly in fashion is something that I really like*", Rachael responded that "*'Ugly' in fashion is not ugly-ugly. You know what I mean? It's like the 'aesthetics of ugliness'. It's a carefully crafted ugliness. It's never... just ugly.*"

Mafalda explored how to embrace ugliness in her own self-expression through her collage-making process, layering textures as a means of enhancing her approach to dressing and self-expression. She is particularly drawn to the utilisation of deconstructed natural materials that are not so pretty, but intensely textured, as it could be a "*massive skirt that's made out of dirt and grass*" (see Figure 7). She reflected, "*I've been struggling for a long time with this. I have a tendency to 'make pretty'. In my way of dressing, I also have this sort of tendency to make it clean and pretty. I don't wear a lot*

of outrageous things. I wouldn't wear a piece that's made out of different fabrics. But then I'm like, in this world we live in, and as we move on, we're going to have to patch up and we're going to have to make texture." However, we pointed out that Mafalda's collage was still pleasing to look at, despite her attempts to capture "ugliness". Even in our attempts to transgress our conceptions of beauty by creating ugliness, we still produced something that conformed to being aesthetically pleasing.

We discussed the idea of "carefully crafted ugliness" in our own self-fashioning practices, and whether that should even be defined as ugliness. Rachael noted, "*We craft our bodies in certain ways, like changing the way we dress so — to look better or worse. So there is an element of crafting in 'ugliness' – whether it even should be defined as ugliness is a different thing — but that is kind of crafting*". Our conceptions of beauty and ugliness are complex and not binary. One dimension of that complexity is that even when trying to resist normative conceptions of beauty, many of us still cared for ourselves and took care of our appearance, presenting ourselves in ways that made us comfortable within our socio-cultural context. Further, many of us designers also received more formal training that shaped particular aesthetic preferences that have emerged from different artistic and historical traditions, which has shaped a sensibility towards how things should look, and by extension, how our bodies should look. These sensibilities become so implicit that it is difficult to transgress against standards of "beauty", for even our conceptions of "ugliness" have been similarly shaped. Maria explored these complexities in her collage (see Figure 8) through

Figure 8: Maria's collage represents beautiful constraints. She uses the corset as a metaphor for her envisioned future.

the use of a corset as a "tension element". She explored how self-fashioning could still be beautiful, but driven by the constraints of beauty. These new constraints would be motivated by environmental considerations in future fashion choices as well as nurturing creativity and individuality. "*I do think [the future] should be fun, it should be beautiful, and it should be flashy. But I think that there will always be constraints, even in hundreds of years, because that's the paradox of the individual in society, right? And that's why there's this corset. I do think that they will probably look different in the future than the constraints we have today. And hopefully the environment will play a larger role in shaping our styles. I think that they can still be just as flashy and glittery and colourful, but probably taking that into consideration. And that's why they're also some seeds, because like with any different layer in life that's somehow represented by styles, you not only leave traces but you potentially also plant some seeds.*" Here, Maria reimagines the idea of conforming to beauty standards in a positive manner, where beauty standards could potentially participate in a less destructive fashion industry.

This discussion theme suggests that self-fashioning technologies could potentially support the process of careful self-crafting and reimagining our ideas of beauty. However, there is a need for sensitivity and responsivity to our underlying preconceptions of beauty and ugliness. Further, criticality is needed around how self-fashioning technologies themselves should be carefully crafted.

5 Identifying Points of Departure for Self-Fashioning Technologies

Here, we present three critical points of departure for self-fashioning technologies: (i) Purposeful examining discomfort as an ongoing phenomenon, (ii) Supporting mimesis and visibility as qualities to be negotiated, and (iii) Envisioning the multiplicity of the body. We see these points of departure as generative spaces of tension for designers to envision self-fashioning as a practice where we constantly attune to our dressing bodies. This attunement process should be undertaken with critical intent, attending to both the inner and the outer dimensions of our being in the world — how we conform, transgress, or exist in the space in between. By doing so, designers can critically examine and question the values that have shaped our practices and the potential oppressions that might be reflected in our bodies, the way we dress, and even in the image we have of ourselves [72]. This creates space for generative reflections on how we can design self-fashioning technologies that support change and transformation.

By introducing these considerations, we seek to explore a design space for self-fashioning technologies that put the body, identity, and cultural norms at the forefront, encouraging more inclusive and socially-aware design practices. However, we acknowledge that these insights are drawn from our personal experiences. We, therefore, present them not as rigid guidelines for the design of such technologies but as open and flexible points of departure that reflect the dynamic nature of our clothed bodies. We hope that they serve as a foundation for designers to consider when embarking

on the creation of self-fashioning technologies, while also evolving to incorporate other realities that may have been overlooked.

5.1 Purposely Examining Discomfort as an Ongoing Phenomena

Discomfort for the sake of conformity has a long history in fashion, from headdresses [12] to corsets [76]. Recent studies show that gendered differences in clothing comfort still have clear implications for quality of life [17]. Though HCI research generally values comfort as a key factor in designing wearables (e.g., [21, 31]), we argue that examining the discomfort experienced in how we conform to expectations can function as a catalyst for self-discovery and resistance. It can render greater insights into the social, cultural, or political factors that have shaped our conceptions of the normative and acceptable, and how we ourselves participate and conform to those expectations in different ways. Claudia's linty sweater made her aware of the process of adaptation to a new culture, and trying to unpack, articulate, and act purposely on her discomforts became a fruitful learning experience about herself, particularly drawing attention to how her fashion sensibilities were socio-culturally shaped and changed as she moved across cultures. This shaping is an ongoing process and demands cultivating attentiveness to understand what remains under the surface of the discomfort itself.

Embracing discomfort can be a transgressive act, resisting normative expectations of how one should present themselves and challenging the notion of helpless or passive "fashion victims" (a normally heavily gender-laden term) [32]. However, it is also important to be sensitive to the complexities of transgressing. During the workshop, we discussed our discomforts — both insecurities and vulnerabilities — extensively and how transgressing is experienced differently for different bodies in different contexts, whether due to gender, race, or contextual factors such as temporality. We explored the value in crafting for/with ugliness and change, taking us to speculate on future challenges; for instance, how computers — and ourselves — would age in the context of a new generation of quantified bodies that are also transforming in front of several cameras. More importantly, how should we design to empower ourselves amidst the inevitability of change?

Engaging with discomfort in design should not entail assuming that all bodies experience an equal level of comfort to begin with [25]. Whereas some of us might experience transgression as a powerful act, others might not desire or be able to transgress due to personal, social, or material factors. Conforming might be a matter of survival. Thus, while we advocate for purposely examining discomfort as an ongoing phenomenon of our experience, care and criticality are needed towards the situatedness of our own sensibilities [26].

Discomfort is intricately examined in Demir's *Pain Creature*, which attempts to articulate pain and unpleasant experiences [14]. This study investigates the potential of interactive wearables to foster somaesthetic awareness of bodily discomfort by exploring new ways of being and living in a body with chronic pain. Through the interplay of sound and tactile qualities, the work encapsulates and materialises the multifaceted dimensions of the pain experience. Demir's work exemplifies how the articulation of discomfort, in different creative forms, can act as a catalyst to explore our expectations about how our bodies are perceived.

Our critical point of departure, therefore, is for designers to engage with discomfort as a means of critically exploring the social expectations placed upon our bodies and how they might be transformed. We see potential for self-fashioning technologies to actively foster transformations in our socio-cultural attitudes towards dress. Methodologically, it might look like purposefully creating spaces where vulnerabilities and discomforts can be explored during the design process of self-fashioning technologies [64], with the support of tools that aid in the careful articulation of the expectations placed on certain bodies and not others [26]. This resonates strongly with recent work by Chichau and colleagues [11] and Popova and colleagues [63], who demonstrate how careful engagement with discomfort can yield deeper understandings of technologies and act as a catalyst for connections to emerge between groups of people. Further, computational clothing could support wearers during the times when we inevitably experience our own bodies as uncomfortable and changing, and help us engage in processes of transformation, meaning-making, and becoming otherwise [15, 74]. However, there is a need to be sensitive and responsive to how different bodies are differently orientated towards the very labour of change and transformation [25].

5.2 Supporting Mimesis and Visibility as Qualities to be Negotiated

The potential of clothing-based displays and their potential to support personal style has been well-documented [16, 36, 40]. Much research in HCI has already focused on enhancing self-expression through colourful lights and displays [37, 42, 62], enhancing the performance and spectacle of fashion [10]. However, this conception presupposes extroversion and can potentially make mistaken assumptions about the identity of the wearer or their desire to draw attention and stand out from others. We argue that such technologies should consider the paradox of visibility and how people can differently experience themselves as visible or invisible within different communities and contexts.

To discuss conformity and transgression here, we draw on the quality of *mimesis*, referring to the imitation of our environment. Our desires to belong are multifold and complex. Sometimes, the desire to belong marks a kinship or affiliation with a meaningful community or, conversely, indicates feeling like an outsider. At other times, our desire to belong is commodified and used to market fashion trends, even being advertised to make us feel as if we belong to a particular circle [82]. How we fashion our bodies to belong — to conform — is influenced by a series of socio-cultural factors and the historicities of our individual bodies. During the workshop, we described how entering a new culture impacted our ways of dressing and our attempts to adapt to different social expectations. Particularly for bodies that might be considered less normative within certain contexts, transgressing or failing to conform to social expectations of dress may not only be perceived as simply not fitting in, but might also exacerbate existing feelings of discomfort and difference. These might appear subtle, yet are often significant for the wearer.

Mimesis is a quality of fashion in that dressing ourselves allows us to individualise and de-individualise the body [68], in other words, negotiating how different or similar we look from everyone else. This can enable people to decide when to be seen and when to withdraw our bodies from becoming the subject of another's gaze [46]. Conforming and transgressing here are similarly complex; transgression might make one hyper-visible and judged for their failure to conform, while conforming might involve reinforcing problematic societal expectations. For example, as some of us are women working in a Western context, conformity might be viewed as perpetuating "conservative", "modest", or "reserved" (also gender-laden terms) modes of dressing.

The idea of exploring designs that support self-expression and social identity is reflected in the work of Epp and colleagues, who navigated the tensions between differentiation and belonging with Finnish university students [19]. In this particular case, the use of technology to personalise boiler suits demonstrates the versatility of social wearables by allowing students to stand out and express their individuality and, at the same time, reinforce their connection to a group. The authors emphasise that design should facilitate the reflection of both individual and collective identities. However, they also highlight the ethical implications of social wearables, warning of the potential for these technologies to reinforce existing inequalities, promote discrimination, or enable social pressure.

This critical point of departure, therefore, is to bring attention to the different experiences of visibility and to work to support the choices that wearers make to fit in — or not — within different environments. In practice, this might look like leaving space for people to contest the ways in which we envision technologies being used and worn; that is, to allow them to be appropriated and ascribed different meanings, and for the technologies themselves to be remade as they are worn. This resonates with many different threads of research in HCI, including how medical devices might be concealed and revealed in different social situations [56] and how technologies that support the menopause journey are used and re-appropriated by different bodies [48]. Self-fashioning technologies similarly have the potential to support wearers in exploring ways of self-expression and belonging to different communities and contexts. Further, computational clothing should support withdrawal as an act of care to retake control over a self that is no longer there for the consumption of others nor undertake the emotional labour of "being seen" [1, 33].

5.3 Envisioning the Multiplicity of the Body

The multiplicity of the body refers to how there are many different facets to ourselves and our identities, some of which may even sit in tension with each other [58]. During our workshop, we discussed the complexity of conforming to and transgressing societal expectations in accordance with our values, in particular, in our socio-cultural contexts, where we found it hard to disentangle our daily practices from the problematic structures that we exist within. We argue that attending to this multiplicity of bodies could open intersectional pathways into self-fashioning technologies, attending deeply to the different ways that people are situated, positioned, or marginalised. During our workshop, we reflected on the multiple facets of our self-fashioning practices and also how we choose to

highlight — or hide — different facets of ourselves. We discussed, for example, how motherhood encloses women within a particular set of essentialising stereotypes that one needs to consciously break free from in order to reclaim back their status of being multiple, i.e., having more than one facet of their identity. Similarly to fetishised bodies, one's individuality and value disappear when one is limited to exist as a "type" embodying different degrees of desirability and abjection.

Self-fashioning can "*maximise the body's multiplicity by grafting upon it additional layers, surfaces and personas, thus forging a prismatic construct*" [10, p.7]. The body is continuously transforming; in other words, it is in a constant process of becoming. As we have discussed, this can support people in exploring different ways of being and belonging. However, within the context of the fashion industry, this has also proved controversial. For example, fashions and ways of dressing that emerge in black, queer, or Indigenous communities and subcultures often become fetishised, appropriated, and remade into products to be marketed to wealthy, white, and straight consumers [3, 6]. There is sensitivity required, therefore, for how we support different identities and forms of belonging in ways that are caring and critical of how fashion itself can essentialise or fetishise them.

Digital narrative clothing can serve as a tool to amplify social movement practices and bring people together. For instance, the Resistive Threads project — an electronic denim jacket that plays audio stories, poetry, and music — emerged from the vision of expanding the reach of the zine *(Dis)location Black Exodus* [30]. It captures attention and raises awareness among the public, fostering greater participation in social movements. However, it also raises critical questions about appropriation and target audiences. While some argue that the jacket should be exclusively used by Black communities to prevent co-optation, others advocate for a more inclusive approach to foster broader coalitions. The project underscores how technologies can be intimately and delicately entangled within the different threads of identity and community.

Our critical point of departure here is that designers should support people in exploring multiple facets of their identities and values. In practice, this might involve engaging with design perspectives and philosophies that actively support change and becoming. In our case, we find soma design [34] to be one such approach as it focuses on enriching our ways of being in the world, rather than constraining our bodies to any one "right way" to be in the world. This resonates with calls by To and colleagues for HCI research to move away from conceptions of problem solving for Black, Indigenous, and People of Colour (BIPOC) communities that may inadvertently limit identities to damage-centred narratives and cut off pathways towards flourishing [78]. Self-fashioning technologies have the potential to support people in their different ways of being in the world, exploring the different roles, identities, and characteristics that make them complex human beings. However, computational clothing should also be attentive to the role it plays as a designed artefact in perpetuating the glamorisation or essentialisation of different identities.

6 Conclusion

In this paper, we have positioned self-fashioning as fusing self, body, and garment together as one [84]. We argue that it is necessary to attend to the corporeal experience of fashion as a way of interacting with the world [54]. In the generative space between conforming and transgressing, we shared our conversations around self-fashioning practices facilitated by the projective affordances of collage-making. From this workshop, we developed three points of departure for future self-fashioning technologies: (i) Purposeful examining discomfort as an ongoing phenomenon, (ii) Supporting mimesis and visibility as qualities to be negotiated, and (iii) Envisioning the multiplicity of the body.

It is important to note that we have turned to our phenomenological experiences as materials to devise our points of departure. We are all a group of early-career academics from diverse cultural backgrounds working as foreigners in Sweden. By turning to our dressed bodies as sites for knowledge generation, we seek to bring richness and meaning without denying our vulnerabilities. However, we are also aware that our abled bodies and experiences represent a limited set of perspectives. We identify these considerations as *points of departure* for a reason; these are grounded in reflexivity, yet they are not meant to be generalisable or definitive. That being said, we encourage other researchers to critically expand these considerations in light of other experiences that might escape from our representation.

Given the space between conforming and transgressing, these points of departure invite designers to conceptualise bodies as sites where ethics can be felt, enacted, and visualised while acknowledging the fluidity, relationality, and multiplicity of our bodies. We aim to inspire designers to envision future technologies that could assist wearers to attune to their dressed bodies as an act of self-knowledge, helping them to become attentive to their surroundings while empowering them to exercise care for themselves. In sum, we conclude with a call for the design community to help devise fashionable technologies that are sensitive, caring, and responsive to the complexities of dressing the body.

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