Julia Valle-Noronha
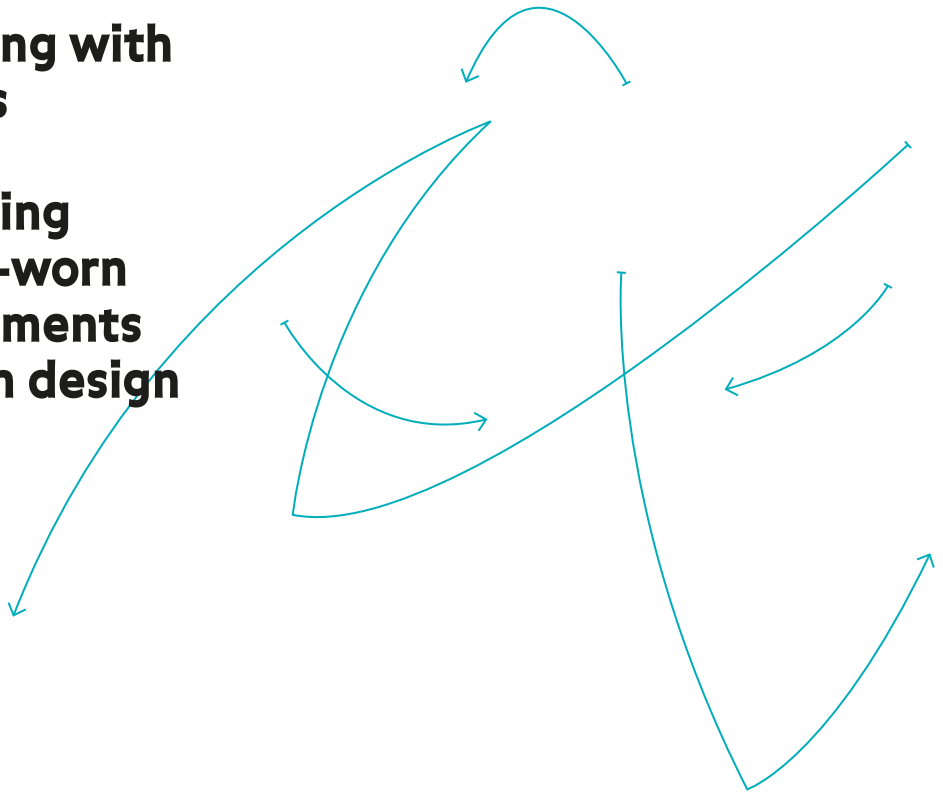
Becoming with Clothes

Activating wearer-worn engagements through design

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Contents

I also thank the financial support from Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq/Brazil), Center for International Mobility (CIMO/Finland), Hannaholmen Säätiö (Denmark-Finland) and the eventual survival packs from Hursti Foundation.

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FREQUENTLY ASSOCIATED with the superficial and the frivolous, fashion has been treated as a subject of lowly relevance in both practice and research. Not exclusive to fashion, this overvaluation of the superficial and the visual has deemed the relationships between individuals and designed artefacts as weak and unengaged. In order to shift this state of affairs, this research asks about paths towards more active engagements between wearer and worn. More specifically, it is interested in understanding how fashion designers can support this change through practice. In order to answer this question, the experiences between wearer and worn and the ways these two entities interact become a central matter of concern. The realm of experience has been marginalised in the considerations of fashion studies as they have privileged investigations on fashion as a system of signification. Through a literature review, this research

confirms that the few considerations on the experience between wearer and worn are articulated at a theoretical level with little applications to practice.

This doctoral research is situated between the fields of fashion, design and philosophy, and unfolds as two iterative experiments in fashion design, developed under a research through design approach. Within the experiments, the design process is exposed and its outcomes are investigated through the experiences of the participants. Against the lack of previously developed methods to investigate experience between individuals and their clothes, the research engages in crafting a methodology able to embrace this study subject. Named 'wardrobe interventions', this method inspired by Cultural Probes collects data longitudinally on long-term relationships via deployed kits containing a garment and a diary. In the project, the importance of the

interaction between wearer and worn is made visible in the theoretical framework, as it prioritises experience and agency over culture and visuality. Here, the data collected is interpreted under the light of a revised phenomenological approach, strongly grounded on theories of material agency.

The first experiment, Dress(v.), explores dress in an active form and asks about ways to enhance the wearer's reflectiveness on wearing practices. The findings from this first experiment suggest care, wardrobe novelty and time as spaces to be explored further towards more engaged relationships. The second experiment, Wear\Wear, builds on these findings. It explores answers to the question of time as a space for design and proposes surprise as a catalyst to active engagements between people and clothes. The results reveal that open-endedness can be used as a tool to motivate stronger engagements and make visible

the agency of clothes. The findings expose how knowledge on clothing is constructed through embodied experiences and mutual affects — or in other words, through becomings. Once open to such becomings, wearers are aware of clothing's ability to act, and more engaged relationships may emerge.

This doctoral dissertation expects to share with its readers an urgent need to make visible the agency of clothes. It contributes to previous fashion studies by broadening understanding of the ways humans and clothing interact and presents a methodology to support this endeavour. In the field of practice, the investigation suggests ways of entangling research and practice, highlighting the relevance of wearing as a matter of great concern to designers in the field of fashion.

WHEN APPROACHED THROUGH PRACTICE, a research project inevitably relies on previous experiences. This preface seeks to provide you, the reader, with the motivations that both preceded and motivated this dissertation. The questionings that gave rise to the ones explored here started in 2006 through my own practice as a clothes-maker and, throughout the years, as a clothes-wearer[1]. My discontent with trends inspired me to learn how to sew and cut patterns, with many lessons coming from my father. Due to the lack of fashion courses in higher education in my hometown, I became a Social Communication bachelor. Accidentally, in 2003, a job opportunity as a graphic designer in a fashion company provided a way for me to enter the professional field of fashion design.

Between 2006 and 2013, then as a full-time fashion designer, I divided my time between commercial fashion companies – ranging from bespoke to streetwear – and my own experimental production. This experience provided me with hand-on knowledge of the fashion system, but also led me to question the fuel of the fashion machine. Concomitantly, I experimented within an atelier setting, carrying out my own production. Lacking formal education in the field, I was not bound to previous paradigms within fashion and its system. I could learn by testing, experimenting, and, very often, by making big mistakes. With time it became clear that the explorations and encounters in the atelier were more rewarding to me than following weekly sales reports and running against time to launch yet another 300-piece collection, another 15-minute fashion show. In an intimate setting, the relationship with the materials and the clients was enriching. I cultivated, each day more, an interest in the interaction between wearers and clothes. How do their bodies shape the pieces differently? How do they engage in dialogue with each other? Can I motivate changes in how people consume and relate to fashion? Seeking to invest in exploring these questions, I applied for a Master's in Visual Arts. It seemed to me that looking at the space between clothes and people could be the answer to many of my questions, and probably to those of many other fashion designers struggling with the reasonings behind their makings too.

1
I am fascinated by the specificity that the English language allows when describing a dressed body as a wearer, a specificity which Portuguese, my mother tongue, does not allow. Throughout the text I will widely use the word to refer to participants in the projects that are part of this doctoral research, and to dressed humans in general. With this choice I aim at highlighting both the body that wears and that is being worn, in an embodied interaction.

For my Master's I dove into the concepts of space and time to explore the gap, or the latent space, between people and the clothes they wear, greatly influenced by phenomenology and Taoism. This was done under an art and technology environment, the NANO.lab at UFRJ (Valle-Noronha 2014). The MA was a gap in itself in many senses, allowing me to come to terms with clothing and fashion, and encouraged me to pursue a doctorate in Design at Aalto University, my first formal education in the field, resulting in this dissertation. In the doctoral research I give continuity to the investigations started in my MA, now under a Design environment. My previous experience, and the research at Aalto, suggested to me that the way to understand my role as a fashion designer was to investigate not only *how* clothes are made, but especially how they are *worn*, not only what clothes *are* but especially what clothes *can do*. The motivation behind this project, then, might be articulated as a need to breathe, as a gap to reflect on what it is that we are doing as fashion designers. In fast-paced production, with at least four collections unveiled each year, the whole industry seems to be breathing in the same rhythm. To hold one's breath and step back is an uneasy action that allows one to understand the fashion system from different perspectives, and to start acting with it again, at a different pace: that of clothes. In the end my fuzzy background seems to be justified by the creation of a space where Communication, Arts and Design can meet.

This work is about communicating *with* clothes, and not only *through* them. It is approached from a designer-researcher viewpoint, informed by both industry experience and academic work. It is not quite about the clothes I make – as a communicator, as a visual artist, as a designer, as a researcher, as a wearer. More precisely, it is about these clothes being worn, outside in the real world, without constraints or controls. It is about the spaces between wearers and the things they wear, about clothes in an active form. I hope that, in the state we find ourselves today, the idea of exploring what happens in the latent space of interactions between wearer and worn can be developed into more fruitful encounters with greater respect for the different ecologies in and around fashion.

1

Introduction

IN EVERY (WORN) GARMENT LIES A BODY, or more accurately, a plurality of bodies, either as a physical presence or a tainted memory. When I take my woollen knitted black dress off at the end of the day, stretched zones remind me of the movements I made and the environment around me. Stretched cuffs can suggest a poor interpretation of the weather, or that the heating system had behaved badly. If the perspective is shifted a little, it can be seen that just as much as we affect the things we wear, we are also affected by them[2]. Marks on my body indicate that the pattern behind the dress follows a different shape than my own, constraining my movements and suggesting ways to walk. A cotton polyester blend shirt keeps most of the heat I generate, making it hard to adjust my body temperature to the summer weather that came earlier this year. Relating with the clothes they wear affects wearers' experiences with the world over and above visual negotiations[3].

There is much more to our clothes than usually meets the eye, beyond the image seen in the changing room mirror when trying on a piece for the first time, or the codes we attempt to deliver when asking our partner whether our clothes look okay before leaving home for an important meeting. Just like a new home, clothes can disturb our everyday routines and create new ones. Philosopher Maurice Merleau-Ponty (1968) notes how the encounters individuals have with the world affect their experiences and actions, stressing how even things devoid of 'intention'[4] can act on and impact lives. A skirt with a tight high waist might lead you to choose a different chair height to sit on at work. A white shirt can suggest avoiding pasta with tomato sauce for lunch at the cafeteria. A new cycle in the washing machine can be discovered and become your preferred choice after a linen suit has entered your wardrobe. From small choices to bigger endeavours, our relationships with our clothes can strongly impact our actions and the way we look, both for ourselves and for others, though this is rarely perceived.

2
The notion of affect and affection used in this work is borrowed from Deleuze and Guattari (1987). It does not necessarily denote emotional responses, but rather an 'ability to affect and be affected'. The term will be further explored in Chapter 3.

3
Parts of this chapter have been previously published in Valle-Noronha (2017b) and Valle-Noronha (2019). In both, the author is the sole responsible for the work.

4
Theorists in sociology and archaeology, amongst others, discuss that intentionality cannot be accounted as an exclusive product of the human mind. More on this discussion can be found in Malafouris (2013, 119–133); Latour (1991, 110–114); Ihde (1979, 77–78); and Verbeek (2005, 113–116). Here, I will refrain from such discussion, as this is not within the core interests of the work. Instead, I state that I share the viewpoint of theorists that see intentionality as properties that reside in material engagement (Malafouris 2013, 119; Verbeek 2005, 116).

Some theorists suggest, though, that the fact that such impacts are not usually perceived or even discussed may be due to the fact that clothes (as well as other designed objects) are so intrinsic to our everyday lives that they become invisible (Buckley and Clark 2012, 20; Entwistle 2000). However, in general, the idea of clothing and fashion for the average northern western individual relies a lot more on visuality than on its affordances, more on what is perceptible on the surface than what is hidden or latent. The ways in which previous works on fashion have drawn attention to what can be 'read' in the images produced by fashion (e.g. Barthes 1990) supported the emergence of outer appearance as the central topic of concern (Bruggeman 2018). This preoccupation with outer appearance is a recognised tendency in industrialised societies, by no means exclusive to fashion (Anusas and Ingold 2013). Yet it finds in fashion a prosperous field. As a consequence, clothing and fashion have historically been referred to as superfluous and ephemeral (Lipovetsky 2002), entangled with the notion of constant changes through trends. This perception causes clear results in academic production and society. For a long time, scholars and people in general refused to take the work of those in fashion seriously (Nixon and Blakey 2012; Lipovetsky 2002). Regarding their work as a shallow practice brings serious consequences to the ways makers and wearers relate to fashion.

However, accusing fashion of emphasising visual aesthetics is not entirely wrong or entirely negative. It is true that fashion strongly relies on visual qualities, stressed in the image making skills of fashion designers (Finn 2014b; Kawamura 2005). This ability to play with the visual dimension of clothes has been very well explored within the fashion industry. On the one hand, when associated with the creation of trends, it plays with human-constructed interests in unceasing stimulation (Hassenzahl and Tractinsky 2006). In this way, consumers are persuaded to increase consumption and easily discard goods. This process of constant and fast acquisition and discarding supports what design theorist Cameron Tonkinwise (2005) calls 'disposable durable' – or the early disposal of long-lasting things. On the other hand, by excelling in image making, fashion becomes an effective tool for empowerment via identification and production of a sense of belonging and personal growth (von Busch 2018a).

Building on the opportunities that fashion offers to the consumer culture, such as the ones mentioned above, companies have successfully explored fashion's commercial appeal. Fashion, as it is generally understood today – a material and symbolic system tightly connected to trends and the passing of time (Kawamura 2005; Lipovetsky 2002) – reaches the great majority of the northern

western society via large-scale production. When mass production is able to offer low prices and commercially expand beyond national borders, fashion is seen to become more 'democratic'. The best example is found in the recent growth of fast-fashion, which makes it reach a worldwide audience. It provides the general public with access to 'what's in season', de-centralising access previously exclusive to a small part of societies. The results of this so-called 'democratisation' of fashion offer an oxymoronic part (von Busch 2018a). While the number of individuals able to wear and somehow be involved in fashion increases, their access to what lies behind clothes decreases proportionally. In this way, though increasing the number of individuals able to consume, fashion retains exclusivity in terms of who writes its history. Fashion scholar Otto von Busch (2008) points out how this so-called democratisation of fashion works in a single direction, conferring it no sense of real democracy: "[...] when H&M diffuses high fashion collaborations to the masses in a 'democratic' approach to fashion, consumers are still only meant to choose and buy [...] fashion as prêt-à-porter. No real opportunity is offered to 'talk-back' to the system, which some would argue to be somewhat democratic" (von Busch 2008, 32). By increasing access to prêt-à-porter clothes, the fashion system suppresses closer engagement with it. Users are provided with greater access to buying things than with opportunities to truly engage in taking an active part in fashion (Fraser 2014a, 157). Philosopher Peter Paul Verbeek, speaking of mass-produced objects, identifies a similar issue: "The 'bond' between humans and artefacts is hampered not only by a lack of involvement in their production, but also because the artefacts evoke a minimum of affection when used" (Verbeek 2005, 19). In the hands of the wearers, a clear detachment from the creation, the making and the materials occurs, resulting in the loss of knowledge on clothing and textiles. What is left to consumers is the buying choice, preventing them from being truly engaged in producing a more meaningful account of fashion.

Recent discussions in fashion studies have evidenced the problem of weak attachments between individuals and the things they wear (Bruggeman 2018; Fletcher 2016; Gill and Lopes 2011; Niinimäki 2011). However, even though this topic is emergent, it has received few practical contributions. While the studies done until now identify some of the sources of the problem and help us develop a vocabulary to approach the issue, they have not yet accomplished consistent practical applications. In order to shift this state of affairs, alternative modes of making, commercialising, consuming and experiencing clothes are needed. This doctoral study looks into the relationship between wearer and worn in the search for modes of designing that

can incite stronger engagements between the parts. It does so via a 'research through design'[5] approach that gives continuity to my practice in experimental fashion as a clothes maker, a designer and a researcher. The research approach, which includes design practice as a means to academic inquiry, allows that knowledge is produced via design activity. Ultimately, the research contributes to the growing field of investigation done through practice within fashion design and research.

What I advocate for through this study is that research through design (cf. Koskinen et al. 2011) can support a shift from looking at fashion as a field of visuality and meaning to one of materiality and experience. Such an approach can put theoretical positions to the test in lived experiences by closely relating them to the matter in question. By entangling theory and practice it is possible to produce knowledge that can be applied in the realms of academia and industry, and serve as a catalyst to actual change. Such research perspectives can provide us with a truthful account of what happens in practice when designers start to dwell upon these issues. Can we, as designers, promote changes in how people experience their clothes? Can different clothes incite different relationships with wearers? Can the agencies of clothes and wearers be made visible through design[6]? Motivated by these questions, this experimental research looks into clothing in an active form. It seeks to explore other ways for making clothes, taking into consideration the different practices that constitute fashion. By doing so, it hopes to access possible paths to recover the agencies of wearer and worn, and reveal understanding on wearing – a practice intrinsic to us all.

5
The term 'research through design' describes different research approaches centred around practices of design often based on design projects. It stems from Frayling's categorisation of research into, through and for arts and design (1993). The topic will be further explored in the Methodology Chapter.

6
The word 'visible' in this question does not denote exclusively visual expressions of agency, but also other sensorial expressions. This 'visibility', thus, can be brought forward by more general affects, such as reflective, tactile and emotional feelings.

Notes on design, fashion and clothes

In this section, I define and position how the terms design, fashion and clothes are addressed, since they are basic concepts used throughout this work. The interest of this research cuts across the three concepts, but concentrates especially on fashion (as a field of knowledge) and clothing (as a tangible matter of fashion). The clothes produced as part of this investigation are located within a fashion design research context.

Design is understood as a broad field of practices that includes some dimensions of fashion design. Traditionally, design is seen as conscious efforts to shift a specific "situation into a preferred one'" (Simon 1969, 55) with the creation of tangible or intangible 'things' as suggested by design theorist Richard Buchanan (1992). Researchers in design and philosophy Jamie Brassett and Betti Marenko (2015, 12) discuss Simon's definition, suggesting that such conscious efforts are likely at the core of all professions. Although agreeing with Brassett and Marenko (2015), I consider design as a process that seeks to effect change. The design activity produces things that serve as mediation between makers and those who come to engage with it in their everyday lives. In this research I am especially concerned with design as a field of research – thus, as a field that seeks to understand how this production can effect change in the different ecologies at interaction, such as those of humans and clothes.

The word 'fashion' is used to refer to a realm of relations and forces at work as well as to the field of knowledge I speak from. When I refer to fashion in this dissertation, I am taking into consideration both its material and immaterial dimensions: the diverse (human and non-human) bodies in fashion, the fast-paced shift of trends, the everyday practices of wearing clothes, the production of identity and culture, technological advances, as well as the clothes on hangers in shops and at catwalk shows. The material and immaterial dimensions of fashion are seen as co-constitutive and co-dependent, where one strongly relies on the existence of the other. Fashion thus lies, for example, not only in the Comme des Garçons red neoprene coat, but also on how its hues, forms and polyester reverberate in our ecologies in a greater sense, influencing the ways with which we relate to the world around us.

Within the various practices of fashion, the production under this research is referred to as 'experimental fashion' – a term that lacks a clear academic definition. Many academic institutions and fashion practitioners consider it as a creative activity that involves processes of experimentation (CSM 2016, MICA 2016). 'Experimental' by definition refers to a practice that presupposes a series of experiments, tests and trials that seek to expand knowledge on a specific field. It is tightly bound to the idea of experience, 'as opposed to authority or conjecture' (OED 2005), which I understand as an opportunity to give voice to the different forces at play in fashion. In this work, I lean on the few discussions that exist around 'experimental fashion' within fashion studies to define the term. Francesca Granata, researcher in film and performance studies, suggests that experimental fashion is a branch within fashion that sits at the border of the wide field of fashion and reaches out to interdisciplinarity (Granata 2012, 79). Speaking from articulations between fashion and textiles, philosophy and technology, Lars Hallnäs (2004) acknowledges this interdisciplinarity of experimental fashion, and connects it with academic research. He suggests that, in order to build fashion as a field of research, it is important that foundational reflections be articulated together with experimental work (Hallnäs 2004, 73). By bringing these definitions together, what I mean by experimental fashion is a field of study that looks into fashion not as a singular discipline. Alternatively, it welcomes inputs from plural sources, giving voice to the different entities that act in the phenomenon observed.

In the research I look into the relationships between wearer and worn as a phenomenon to be explored. Due to that, the worn – i.e. the things individuals wear such as clothes – takes a relevant role in the investigation. Despite being framed within fashion studies, my production is understood as *clothes* and not fashion. This naming acknowledges that it is through experience and interaction that clothes can become fashion (Loschek 2009). This brings forth the material dimension of clothing, which shares centre stage with the other entities in question[7]. The clothes here are thus seen as unfinished. In that sense, the functions, roles and meanings of clothes do not precede the actual wearer-worn relationships, but are updated by them. The choice of this wording serves yet another purpose, as the term is more specific than the usual synonym *dress*, as used in the

[7]
The term 'entities' is used here in a broad sense to refer to any subjects/objects, material or immaterial, which constitute relationships. According to OED (2005), an entity is any substantial animate or inanimate body, just as well as a structure or a system of organisation.

academic context. Dress, apart from its flexibility as both a verb and a noun, has been conceptualised as extending the category of clothing by including body modifications, adornments or supplements as well (see Eicher 2010; Entwistle 2000). Clothes and clothing, on the other hand, evoke a more materialist account of dress, situated in the everyday, a tendency allowed by the colloquial tone of the word[8].

This dependency between clothes and other entities in the production of 'a fashion' does not suppress the relevance of its material side. This means that clothes are not seen here as 'mere clothes', but rather as entities loaded with affordances (Miller 2005; Verbeek 2005; Gibson [1979] 2014). The idea that the material dimension of clothes is in a lower hierarchical position than the immaterial one is frequently seen in the discourse of fashion designers and fashion schools[9]. Often, the first is referred to as mundane and uninteresting; the latter is connected with creativity, sensuality and imagination. This can be illustrated by the way that fashion studies have, in the past, been mostly concerned with its intangible side. The concern with the tangible 'things' of fashion (e.g. Küchner and Miller 2006) was taken mostly by studies in material culture. This work tries to add to efforts that seek to give due importance to the matters of fashion from within the field itself.

What design – as a field of practice and research that seeks to effect change – offers in the intersection with fashion is the possibility of producing material and immaterial changes *in*, *through* and *around* the relationships between wearer and worn. The ways these two fields intersect in this research is through design theories and methods, which support the development of a theoretical background to this work. The works of Gibson ([1979] 2014), Appadurai (1986), Miller (2005) and Verbeek (2005) ground the way this work looks into the relationship between individuals and designed things – as one that reckons the agencies of inanimate matter. The 'Cultural Probes' developed by Gaver et al. (1999) – and their unfoldings – provide methods to investigate such relationships outside the controlled environments, in real life. With this support, previous efforts in design allow this research to accomplish its interest in investigating how wearer and worn relate in the everyday.

9
Though generally approached from an immaterial viewpoint, some fashion schools are giving the materiality of fashion its due respect. One example is Aalto University, where experimentations in developing textiles clearly highlight the materiality of clothes (Niinimäki et al. 2018). Aalto managed to bring this matter to light by merging its fashion and textiles programmes into one, inducing collaboration between the students from both sides.

8
In the context of this dissertation, the words clothes, clothing and garments will be used interchangeably.

This work, thus, is an invitation to become aware of the exchanges we have with the things we – as makers, researchers or wearers – wear. It is an exploration of the conversations between the textilities of cloth and tactility of our skin meeting each other, the feeling of comfort of wool on cold days and the discomfort of a seam bearing the weight of fabric against our skin. In the end, this is an ode to these everyday encounters and how through them we may produce fashion, intimately and – above all – together.

1.2
The research questions and aims

Unlike many design practices, fashion design is rarely about solving problems (Chun 2018), such as reducing energy consumption or enhancing life quality through design. Most of the time, it imparts other wishes and goals as either an industry practice or a creative expression – to empower a gender, ethnicity or cause, provide a sense of belonging, please the general public, generate a bigger cash influx to the industry, fuel discussion or produce social difference. The motivations that drive this research are aligned with a non-commercial interest. It seeks to explore clothing as entities that are in dialogue with the environments around them, and which individuals relate to on a daily basis. The main research question asked in this doctoral project emerges from the practice and seeks to explore paths to what hides beyond the surface of garments. Tightly connected to my experimental production in fashion design, a broad research question looks into the relationships between wearer and worn by asking, "How can I, though design, promote more active relationships between individuals and the clothes they wear?"

Philosopher Villém Flusser suggests a view on the communicability of the object very much in line with the interests of this research: "Can I give form to my projected designs in such a way that the communicative, the inter-subjective, the dialogic are more strongly emphasized than the objective […] and the problematic?" (Flusser 1999, 58–59) The overarching question in this dissertation works as an unfolding of Flusser's question. My research project aims to find in design opportunities to shift wearers' and clothes' roles from passive to active within the fashion system; to achieve a stage in which individuals (as consumers and wearers) and clothes can both have their agencies perceived and cherished; and to allow that the knowledge and values they carry can be substantiated as unique and

valuable manifestations that are the result of affective encounters. By further understanding the relationships between makers, clothes and wearers, researchers and designers can explore paths towards such a shift and act as catalysts to change in the hierarchical fashion industry. This change can directly affect the entire system, moving towards an actual democratic fashion.

In the quotation above, Flusser complements the discussion on individuals' agencies in fashion, presented in the previous section. In his suggestion, design today leads users to focus on objects, in detriment to the development of relationships. Together with Flusser, Anusas and Ingold (2013) theorise a feeling perhaps shared among many designers: "mainstream practices of design in western industrialized societies aspire toward a logic of form that reduces our ability to perceive the depth and scope of our material involvement with the world around us" (Anusas and Ingold 2013, 58). They reduce our experiences with objects to their surfaces, repressing engagements that go beyond external appearances and reach their "hidden interiority" (Anusas and Ingold 2013). Examples of hidden interiorities include the complex enmeshing of fibres on textiles or the multiplicity of languages behind the codes on a laptop. By losing sight of such hidden 'parts', not only is the knowledge on the things and practices around us lost, but so too is the agency[10] to act *together* with them relinquished.

Flusser, Anusas and Ingold's ideas fit fashion well, with trends shifting at an extreme pace and the messages delivered in fashion campaigns strongly emphasising the 'objectifiable'. Fashion scholar Daniëlle Bruggeman (2018) brings the topic into discussion from a similar perspective: "The fashion system usually thinks in terms of idealised identities and outer appearances. It looks at bodies as surfaces onto which a visual image or immaterial concept is projected – a conditioned form of aesthetics and taste trained and cultivated at most fashion schools" (Bruggeman 2018, 7). However, the prioritisation of 'surfaces' and visual aspects in fashion is also part of our everyday encounters with it (Buckley and Clark 2012, 55). Take the example of seeing a garment for the first time in a shopping

mall. Something in its form attracts me. I find it beautiful, useful, an exemplar of the latest trend. I take it to the dressing room and try it on. 'How do I look in it?' is the first question that comes to my mind, and the first I try to answer by looking in the mirror (Figure 1). This first encounter and often most of those that follow explore the forms and surfaces of designed clothes, seldom reaching their 'hidden interiorities'. Nevertheless, that garment could tell of different things, apart from its form, trends and the brand it carries, if one is open enough to carefully consider it (Figure 2). Starting from the surface, the projection metaphor provides a good account of what I would like to take into consideration here. When an image is projected onto a surface, be it a material or immaterial projection, it gains new texture, new context, new meanings; it is already not the same surface as it was before, it becomes new, affected by the projection not only conceptually but also materially. How is the change effected? How does it affect the surface? What can the new surface afford to a wearer-worn relationship?

By looking at how individuals relate to my own creative production in experimental fashion, this work seeks to address parts of its broad research question. This dissertation is not anchored in one definite question to which clear answers are expected. Instead, it works within a scope of interest, open to the unexpected results of the studies. It starts with the presupposition that in any wearer-worn relationship there is a space for interactions of all sorts[11]. Can we, through design, enhance this space, turning it into a more active and interactive one? This research looks for new forms of practicing fashion design that can compose what Deleuze and Guattari (1987, 257) would call a 'more powerful body' – one that welcomes and embraces reflections, actions, passions and other general affects. This viewpoint – and the use of concepts that stem from it – positions this research between the fields of fashion, design and philosophy. This positioning will be further explored in Chapter 4.

As the research evolves, supported by literature, and the results of the experiments start taking form, new questions arise. Though better understood in context, the sub-questions include:

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Literally designating an action in a space between two or more entities, *inter*-action denotes a plurilateral and not always linear form of relating. In literature, the words *experience*, *engagement* and *interaction* are often used interchangeably. In this dissertation, relationships are seen as interaction and clothes as interactive by their nature.
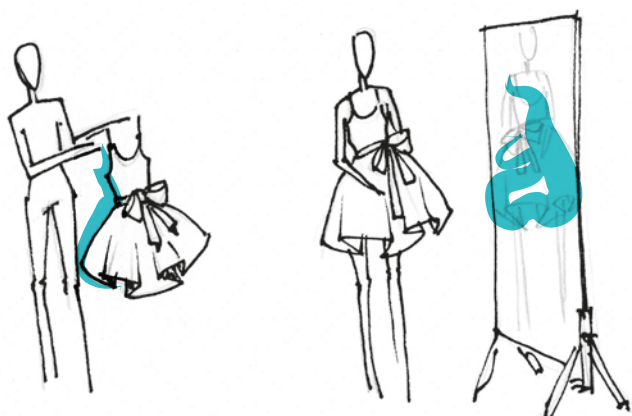
FIGURE 1
A visualisation of an 'active' space between wearers and clothes.
In the example, the space does not invite active engagements,
restricting accessibility to the surface, to its visuality.
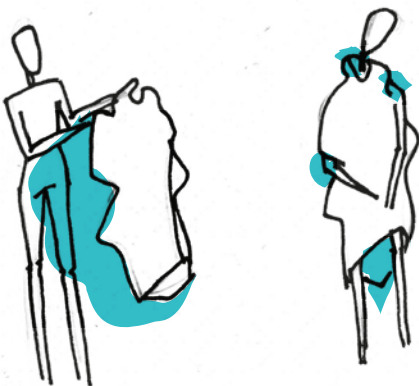
FIGURE 2
A garment that proposes an interaction beyond the
surface, which reaches its hidden interiorities.

— What aspects of clothes can lead to more reflective and engaged wearer-worn relationships?
— In which ways can time be explored as a space for design to bring novelty throughout the use phase?
— How can the agency of clothes be made visible[12] through design?

This doctoral project emerges from my practice as a fashion designer and the concerns that arose from it. It gives continuity to this practice, but now under an academic research setting, oriented towards exploring the specific scope of interest delineated by the questions. In order to explore the inquiry, two experiments involving practice were developed and tested as interventions in the world, resulting in an experimental approach to doing research (Brandt and Binder 2007, Eriksen and Bang 2013). Each of these experiments comprised a clothing project in experimental fashion design, namely Dress(v.) and Wear\Wear. The experiments investigate how the produced pieces were experienced by individuals, with the second experiment building on the results of the first. The data generated from the experiences is collected via ethnography and autoethnography. Figure 3 briefly introduces how the research was constructed. Within the larger scope of interest, the experiments are positioned and aim to cover parts of the wider research question. A more detailed version of the figure will be introduced in Chapter 4, where the methodology is explained.

How can fashion designers promote more active relationships between wearer and worn?

What aspects of clothes can lead to more reflective relationships?

DRESS(V.)

How can time be explored as a space for design?
How can the agency of clothes be made visible?

WEAR\WEAR

RESULTS
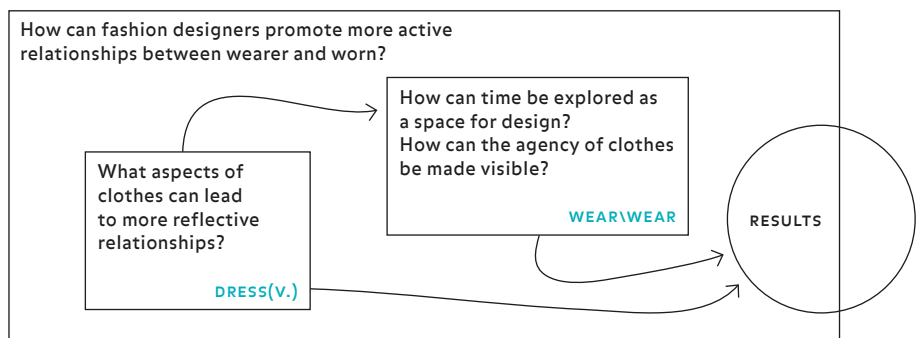
FIGURE 3
A simplified visualisation of the relation between the broad research question and the questions that arise from each project.

Situated at the intersection of academic and design practice, the work seeks to unlock paths for an approach to production in fashion design that is more aware of the subtleties clothes can hold and what they can affect – of what designed clothes *can do*. This ability to 'do' is not seen

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See footnote 6.

here as a mere personification of the clothing, but rather a recognition of the material agency of such design entities. 'Material agency' as a concept is borrowed from a stream in philosophy and social sciences that sees things as holding agency. The concept will be further explored in Chapter 3 and will permeate the work as a theoretical background. By exploring the entanglements developed between wearer and worn, it is hoped that the importance of the relationship between these two entities and makers can be updated. The organic development of the research demands that the content be reorganised to facilitate clear communication. Therefore, this experimental research is delivered with the final research in mind and not strictly as it took place in time. The following section will briefly guide you through how this dissertation has been structured and outline the contents of each chapter.

Dissertation structure

This doctoral dissertation is divided into nine chapters, which includes this introductory chapter. Here, the motivations behind the research are exposed, considering inputs from both industry and academia. The research questions are outlined and the work is theoretically positioned between the three fields of design, fashion and philosophy. Stemming from its questions, the dissertation's aims are presented. The second chapter reviews the literature in the specific scope of interest to which this work aims to contribute, that of research in fashion design done through practice. Here the path from fashion as a topic of interest to a field of knowledge is traced, culminating in the development of investigations that include practice. A review of publications in academic journals and doctoral dissertations provides the reader with an overview of the different approaches to investigating fashion through practice, with a particular interest in the methods used and how the wearer is considered. With the review of the literature, an underdevelopment of investigations into experiences with clothes is identified. This gap directs the design of the research, the definition of the theoretical background, as well as the methodology crafted.

The third chapter contextualises this work within a theoretical framework that can fill the gap previously identified. The chapter discusses concepts used throughout the dissertation – the notions of material agency, affect and becoming – with regard to their application to fashion studies. Some of these concepts emerge from the findings and were not considered from the outset. They facilitate

the development of a vocabulary to discuss the relationships between individuals and the things they wear and delineate the theoretical framework. In sequence, recent examples from literature in fashion illustrate this discussion and point to new directions to research fashion. Using a material agency approach, articulated from within a phenomenological tradition, these new directions shed light on what to be considered when reflecting on wearer-worn relationships. Chapter 3 completes the background against which the doctoral project stands by contextualising design and fashion studies within this framework.

The fourth chapter details how the research through design was conducted. It starts off by introducing how individuals' experiences with artefacts have been investigated in recent years in design and fashion studies and highlights Cultural Probes (Gaver et al. 1999) as providing investigators with necessary conditions to look into such experiences. Following this introduction, the proposed method – wardrobe interventions – is explained. Methods used for participant sampling, data production, collection and interpretation are presented here.

The fifth and sixth chapters concentrate on the two experiments, Dress(v.) and Wear\Wear, with both following the same structure. I write these chapters with the help of the thirty-two participants in the studies, who lend me their voices through diaries, group discussions and reassessment interviews. To begin, the motivations behind each experiment are discussed and contextualised. The design intents are made explicit via diary notes with accompanying discussion, followed by a detailed account of the design process from the early beginnings to the final outcomes, rendering these sections largely descriptive in both textual and visual forms. Here, the deployments are reported, with comprehensive specifications on how the method was implemented and the data produced. The chapter ends with findings from each experiment. A short seventh chapter follows, summarising the results from the studies and articulating general findings.

The eighth chapter briefly discusses the methodology used in this dissertation. It reviews the research and design methods. Next, the concluding ninth chapter starts with an overview of the main findings in relation to the research questions. The investigation is then examined from the viewpoint of its validity and reliability considering the methodology applied. The limitations of the research are identified and discussed in sequence, followed by a description of how it contributes to the communities of fashion studies and practice.

Throughout the dissertation you will find different text formatting that hint to the information content. Italicised texts were extracted from personal diaries used as data in this research project. Their source can be either my own notes on the design process or the dressing/wearing diaries (kept throughout the development of the projects), or one of the thirty-two participants' diary notes or excerpts from group discussions. Indented texts in blue, found at the introduction of chapters and sections, indicate evocative texts. Their source is either the works of other authors or my own writing – in a style less constrained to academic standards. With these short texts, I aspire to evoke images, thoughts and moods that the reader will carry throughout a section, guiding the general tone of the work. On illustrations and visualisations, the blue colour will indicate the creative practice, allowing the reader to smoothly follow the paths taken by practice- and theory-based parts of the research.

The voice in this dissertation will shift from first person singular to passive, directly reflecting the theoretical stance taken and the source of information delivered. A passive voice is chosen for most of the review of the literature and theoretical background chapters, in which mainly external sources are discussed. Personal viewpoints are made clear with the use of first person singular. The contents of other chapters encourage a stronger subjective and situated position (Haraway 1988) and welcome a first person singular voice throughout, acknowledging the ways in which my body as a researcher directly affects the research. In such chapters, much of the content derives directly from the development of this research either as experienced or actively produced data through fashion design practice or research. With this choice, I expect to offer an investigation that takes place in the 'real world', with living bodies and affecting matters, as opposed to the lab environment.

2

Reviewing fashion practice in academia

RESEARCH INTO, THROUGH AND FOR FASHION is a rather recent phenom-
enon. Braced by the late appearance of fashion higher education in the
1990s (Finn 2014b, 43), it was not until the early 2000s that fashion
design practitioners started to delve consistently into academic
research. This chapter overviews the burgeoning field of fashion studies
in three sections. Its main interest is to understand in which ways this
field of research has started to gain body and, in particular, how
research approaches based on practice have developed in academia.

The first section provides you, the reader, with a brief historical
account of fashion as a field of knowledge and how it has developed
throughout the twentieth century and beyond, particularly in the
last two decades. This overview hints towards new directions for
investigating the field, as it overcomes the reductionist perspective
on fashion as a system of signification (Ruggerone 2017; Negrin
2016; Entwistle 2000) and the validation of practice-based research
in academia.

The second section is a literature review on how the field of research
based on fashion practice has developed in the last decade. In its
first stage, it briefly describes how the literature was selected.
The following section divides the publications reviewed into three
categories. Each category focuses on a different source of information
for practice-based research in fashion. They are those centred on
(1) the user (here addressed as wearer), (2) pattern cutting and (3)
autoethnography. This categorisation seeks to understand how the
three main points of interest in this dissertation have been explored
in literature. Overall, the review seeks to understand how other
designer-researchers have produced knowledge and is particularly
interested in the methods used. Consequently, the chapter aims to
shed light on what the present landscape in practice-based research
in fashion looks like, what fields it has explored and through which
methods. Finally, the chapter concludes with remarks on how
investments from a practitioner viewpoint can support fashion studies
to gain a broader understanding of the needs and potential for
fashion in academia and industry[13].

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Part of the literature review in this chapter has
been explored in Valle-Noronha and Chun (2018).
The author was solely responsible for reviewing
the literature. The work was co-authored, with
the author having the main responsibility.

2.1

Opening up
fashion studies

> The question of fashion is not a fashionable one among
> intellectuals. [...] Fashion is celebrated in museums, but
> among serious intellectual preoccupations it has marginal
> status. (Lipovetsky 2002, 3)

Whether made of fabric or feathers, we all wear clothes. Standing
closer or farther from our skins, this worldly practice has the ability to
connect and divide, incite and suppress, liberate and confine. Fashion
holds powers beyond visual traits, hidden both in the various practices
of those who make, wear, experience, deal and reflect on it as well
as on its matters – from bird feathers to conductive thread woven in
fabric. Massive in content, fashion and what it is made of has recently
become open to encounters and dialogues via research. As researchers
and practitioners reflect on the practices and matters of fashion, they
slowly disclose answers to the question: what can fashion do?

Since the publication of Lipovetsky's quote that opens this section,
much has changed. Despite the persistence of a prejudice against
fashion as a serious topic (Nixon and Blakey 2012; Kawamura 2005),
fashion is now developing into a standalone field of knowledge. It
entangles different theoretical foundations to construct its own – as
an interdisciplinary field. Named by Granata (2012) as a field 'in-
between', fashion and the clothes people wear have been observed
from other disciplines with interest for over a century. The first
publications on the subject date from the nineteenth century (Almila
and Inglis 2017; Simmel [1904] 1957; Veblen 1899; Spencer 1891) and
discuss fashion as a process of imitation that served to define social
classes (Kawamura 2011, 5; Thornquist 2014, 39; Entwistle 2000,
115–118). The sociologist and economist Thorstein Veblen (1894)
focuses on fashion's economic roles within society. He uses fashion,
and the way women use clothes to produce difference and reify their
social status, as a means to discuss what he would later conceptualise
as 'conspicuous consumption' (Veblen 1899) – the practice of buying
luxury to display and support social power. Simmel's essay 'Fashion'
(1957 [1904]) emerges from a sociological and philosophical viewpoint
and advocates for fashion as a phenomenon particular to modern
western societies and their dynamics. His essay can be taken as one of
the first in western literature to address how fashion (and clothes) is
used not only to support social differentiation, but also to construct

the image of the individual. Though discussing fashion from an exclusive European and North American viewpoint (Almila and Inglis 2017), Veblen and Simmel's writings form an essential foundation for an academic account of fashion. The authors acknowledge the various roles fashion plays in humans' social lives and start to point out the relevance of the different phenomena in fashion becoming a topic of academic interest.

The second half of the twentieth century saw a number of fashion-related publications that both criticised and built upon the works mentioned above. This first inflow of production in the last century stemmed from the fields of semiotics (Barthes 1990), history (Laver [1969] 2012), sociology (Lipovetsky 2002) and psychology (Kaiser 1990), to name a few. These contributions inclined towards investigating fashion and clothing as carriers of social symbols, or as a cultural manifestation, focused on how meaning was built by society. They faced the prejudice of dealing with a subject that was understood by many as one of 'lower' importance (Kawamura 2005; Lipovetsky 2002). In the early 2000s fashion studies started taking new forms, now as a more established field. At that moment, the field starts to receive contributions that decentralise the discussion in regard to its theoretical heritage. Articulations with contemporary philosophy begin to take shape, in which Joanne Entwistle (2000) can be seen as one of the pioneers of this turn. She posits the body and the practices of fashion as an essential space for investigation, questioning previous understanding of fashion as mere discourse. Drawing on the traditions of structuralism and phenomenology, she suggests that fashion is situated in diverse bodies that produce fashion and the relationships they establish with each other. Entwistle criticises how previous research in "sociology, cultural studies, costume history and psychology tends to be theoretical in scope and does not examine the mechanisms by which fashion translates into dress in everyday life" (2000, 3). Her work supports the interdisciplinary nature of research in fashion. By bringing embodiment and experience forward as relevant spaces for investigation, it opened the path to further articulations that break with the semiotic tradition. Fashion theorist Llewellyn Negrin (2016) adds to this perspective by denoting the lack of research centred on experience and the need for a shift. She notes: "Fashion, by dint of the fact that it is designed to be worn, is inextricably linked with the body" (Negrin 2016, 115). Despite this unavoidable connection between fashion and the experiences held by the dressed body, fashion studies have neglected its experiential dimension, "treating it [fashion] primarily as a 'text' to be decoded semiotically or as an image to be analysed in terms of its aesthetic form" (Negrin 2016, 115).

In the quotation above, Negrin (2016) stresses the need to overcome the perspective of fashion as a system of signification to one of practices as a means to include experience in fashion's scope of interest. With this shift, while the symbolic aspects of fashion remain accounted for, their material implications start to emerge. They are the means through which those involved (e.g. clothes, embellishments, wearers, makers) engage in experience. This call for attention to the matters of fashion has been recently elaborated by several researchers (Sampson 2018; Smelik 2018; Ruggerone 2017; Negrin 2016; Ainamo 2014; Thornquist 2014; Gill and Lopes 2011). They all share an interest in the role of experience to understand fashion and look into the various practices that constitute it, such as wearing and making clothes.

The next section looks into the emergence of research based on practices of making clothes – one of the essential practices in fashion – and clarifies the aims of the literature review in this chapter.

2.2
Fashion as a field of practice

To look into fashion as a field of research is to look at a broad number of practices, matters, symbols and entangled relationships. To look into fashion in context is to work towards research approaches that fit the phenomena we speak of. Such a project often involves taking risks such as employing novel methodologies or crossing theoretical frameworks from different disciplines. This section tells of the risks taken and paradigms broken as practitioner-researchers dive into fashion research.

Getting to the core of fashion as a ground of both research *and* practice calls for efforts from within the practice itself. Such efforts can render visible knowledge that could not be accessed through other research approaches (Bolt 2007, 4–5). In supporting the development of research based on practice, Kawamura (2011, p. 124) adds that knowledge in fashion theory can support practice to reach its intended goals. Thus, articulations between practice and theory can generate knowledge applicable to both industry and academia. However, considering that fashion became an academic discipline in the 1990s in many nations (Finn 2014b), it is not surprising that investigating the practice of making clothes from a practitioner perspective is

still a very novel track in academia, still contested by many in the field (see Skjold 2008, 81). This initial production of fashion research based on practice, reviewed and analysed in this section, encounters difficulties in its early stages, like any other field. While it struggles for recognition, and lacks a consistent body of work to build upon, it often relies on adaptation of methods from other disciplines (Griffiths 2010, 74) in a similar way as this research does.

The review that follows consists of publications in the field of fashion practice. It covers journals and academic institutions that have consistently added to the field, selected through a sampling done in theses banks and the Finnish Publication Forum[14]. It was finalised in March 2018 and comprises twenty-eight articles and twenty-one dissertations in various subfields of fashion practice, some of which are discussed in this chapter. The separation between articles and dissertations makes visible the difficulties in disseminating this type of research beyond the limits of institutions, and will be discussed in the conclusion of this chapter. All the works collected were categorised in regard to: date, affiliation, subfield within fashion, research method used and involvement of participants (see Appendixes 1 and 2). This categorisation was adapted from Diana Ridley's proposal for a tabular comparison of texts (Ridley 2012, 72).

The authors in this review make use of different terms to refer to their research approaches (e.g. research through design, practice-based, practice-led, action research). In reviewing the texts, the term employed by each author will be kept in respect to their theoretical stands. More details about these differences, and how this research project positions itself among the different approaches, are found in Chapter 4. The review is limited to qualitative research that includes clothing as part of the investigation, written in English and Portuguese, sourced uniquely from digital repositories. Though many works in fashion practice have been published under the broad umbrella of the arts and humanities, the framing leaves them out of this review. It focuses on those that emerge exclusively from arenas of fashion design research.

The subsections below categorise studies into three groupings: (1) studies informed by or involving users, (2) creative pattern cutting and (3) autoethnography centred on relationships. The categorisation

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The Finnish Publication Forum classifies and rates publications such as academic journals, academic book publishers and conferences. More information can be found at www.julkaisufoorumi.fi

reflects the focus of this research on wearers' experiences of experimental clothes, which are produced under a creative pattern cutting approach. The three categories show how the voice of the designer-researcher can take different dimensions within a research project and how other voices – those of wearers and things – may be intertwined in the inquiries.

WEARER INFORMED PRACTICES

Clothes gain life when they are worn. It is the use and experience of clothes that elevates them from stable objects to meaningful things. Malcolm Barnard suggests that fashion is "what people wear" (Barnard 2007, 3). Though this may sound simplistic, a broad definition of wearing brings together all wearable manifestations of culture and style. It accounts for the powers that lie behind wearable things, regardless of geographical or social position. Ingrid Loschek clarifies Barnard's description by discussing the difference between clothing and fashion:

> Clothes, including accessories, are products which are realised by means of a design process. Which of the products are accepted and become fashion is determined by the society, a group within society or a single community. [...] Fashion extends far beyond the objective aspect of the product, clothing. It gives clothing a social purpose. (Loschek 2009, 134)

While somewhat reductionist, Loschek nicely describes how it is through experience and use that clothes become a powerful object, capable of catering to needs and expressing interests. The author's perspective suggests that individuals' needs and desires should be taken into consideration when a garment is designed. In the fashion industry this is often done exclusively through a combination of evaluating sales and shifts in trends (Bye 2010, 27–31; Loscheck 2009, 99–100), disregarding wearers' actual interests and experiences. Similarly, in academia, much of the practice-based fashion research focuses on the processes of making as the central source of data, often leaving aside an investigation of clothes as worn – thus experienced – objects. In opposition to this paradigm in both fashion and academia, a series of research projects have designated the interests and needs of wearers as design priorities, breaking with the hierarchical perspective of the designer that dictates fashion (Kawamura 2005). This section will explore some of them via the works of Bugg (2006), Dunlop (2011), von Busch (2008), Radvan (2013), Townsend et al. (2017), Black and Torlei (2013), Gordon and Guttman (2013) and Fraser (2014a).

Bugg (2006) explores a multi-method approach to further understand the benefits of accounting for movement in the design of dance costumes. Through three case studies, she interviews dancers and observes their performances to gather data. To test the outcomes, Bugg uses fashion shoots, editorial, videos and live performance through an iterative process in which the experience of performing *with* the garments is seen as a relevant source of input into her designs. Dunlop (2011), on the other hand, is more interested in the relationship between maker and place, and in particular how the location of the designer is integral to the work. In maker/wearer/ maker, the main project developed within her dissertation, she gifts clothes to friends, family and herself to better understand design as an embodied and located making. The deployed clothes are materialised back to the researcher as pictures of the pieces in use. The pictures comprise the data collected back from wearers and are formatted into a photobook (Dunlop 2011, 119). Even though this project involves users, Dunlop's main interest is the role of the fashion designer. Due to this, no iterations are done with the support of the collected pictures.

Resonating with the interest in what constitutes a place and how fashion can fuel engagement and empower communities, Otto von Busch (2008) involves participants in different activities and locations to rediscover the radical potential of fashion to move, animate and connect individuals. His activities and projects conceptualise what he calls a 'hacktivist' role of fashion designers: "not the one of a classic unique genius of fashion. Instead it is in the form of orchestrator and facilitator, as an agent of collaborative change." (von Busch 2008, 50). In doing so, he proposes an alternative to the mainstream role of designers as dictators of fashion (Kawamura 2005, 64–72) and raises debate on the future directions of fashion. He adds to the discussion on the passive wearer-worn relationship constructed by the industry and suggests empowering individuals so they can take a real active part in the fashion system.

Caterina Radvan (2013) focuses on the social roles of the fashion designer by designing seamless knitwear for individuals with motion disabilities. Her work challenges how previous studies aimed at 'camouflaging' disabilities (e.g. Carroll 2009; Hernandez 2000) in order to restate normative dressing assumptions. Instead, she takes participants' conditions as a source of inspiration. The results of her work support respect and understanding through a wide sample test with users and an experimental approach to fashion design. The outcomes are unexpected and express high-quality design. They cater for the ideals of inclusive design, reaching beyond the initial target group. To access her sampling group, she involves them in two stages

of investigation. In the first stage, eight participants are interviewed and test the developed samples. In the second, a larger number of participants are assessed via questionnaires. How (and if) the pieces are incorporated in the individuals' dressing routines remains unknown, as test assessments were restricted to fitting experiences. A longer-term assessment would enrich the results, adding an extra layer of support to the development of such pieces in the future.

Townsend et al. (2017) exemplify the need to account for time when the experiences of wearing are taken into consideration, building on Arxer et al.'s (2009, 46) observation that identities change over time. In their methodology developed from a user-centred approach, a series of workshops and semi-structured interviews follow participants through time as they discuss elderly women's emotional needs when it comes to fashionable offerings available in shops. Spread in time throughout the course of the study, the workshops take advantage of the nature of fashion design via generative and exploratory methods and the interviews support triangulation of data for quality outcomes. The authors investigate the collected data via a phenomenological analysis, and question previous approaches in which the investigation concentrated solely on interviews. The approach suggests that the discussions could diverge from the central topic of concern to reveal hidden points of interest.

Also taking user-centred design as the point of departure, Black and Torlei (2013) create a methodology for unfolding needs and exploring possibilities to enhance experience quality in a hospital stay. Drawing from an ethnographic tradition, they undertake participant observations and semi-structured interviews over two weeks to collect data for redesigning a hospital gown. Patients' bodies, hospital risks and medical needs are taken into consideration together with the needs of other stakeholders, such as production, laundering and maintenance companies. The disposable garment they propose brings better fit to increase comfort through a piece that can be cut to adapt to the specific needs of the wearer. They suggest improving the efficiency of the complex hospital gowns maintenance system by excluding and simplifying phases. Despite the involvement of patients and nurses prior to development, no evaluation was done of the final result to assess whether the proposals met expectations. Following the same task of redesigning a hospital gown, Gordon and Guttman (2013) take a similar user-centred approach. Guided by models offered by Lamb and Kallal (1992) on consumer needs and LaBat and Sokolowski (1999) on the fashion design process, their new design aims at enhancing usability and visual appeal of the gowns. Prior to the design phase, two former patients and two hospital staff were

interviewed. After prototypes were finalised, the researchers assessed the outcomes via an evaluation panel and five focus groups. These second and third assessments allowed the researchers to identify persisting problems and iterate the design with necessary changes.

Fraser (2014a; 2014b) involves different fields of knowledge through textiles, engineering and design collaboration to develop studies in form and materials. By taking forms and colours as matter for engagements, her work often resembles the *Parangolés* of Brazilian neo-concretist artist Hélio Oiticica, where individuals embodied such elements as they explore new spaces of freedom (Dezeuze 2004; Oiticica 1934). Fraser's work navigates possible futures for clothing design through an experimental research framed within a critical design approach (Dunne and Raby 2001). She develops, through the engagements between participants and clothes, events of 'Critical Use' (2014b). In these events, clothes take the role of 'conversations' rather than 'statements', challenging previous understandings on their roles. Instead of focusing on meaning, the interest is shared between the different experiences and practices of making and wearing clothes. In this way, the work questions' Herbert Blumer's widely accepted conception that "while clothing may say something, it is scarcely involved in conversation." (Blumer *apud*. Davis 1992, 8). It points out how clothes can potentially take active roles, expanding beyond mere support to meaning making.

The above examples highlight the value of social engagements and suggest the importance of experience and time in clothing inquiries. By adapting and combining methods previously established from other fields, such as interviews, participant observation, participatory art, workshops and focus groups, the authors delve into particularities of fashion design and research. They take into account individuals' agencies and needs concerning comfort, aesthetics and overall feelings, but often refrain from evaluating the final outcomes through longer assessments, leaving it to punctual fittings and one-off tests. An analysis of the works mentioned above demonstrates that a single method cannot account for the complexity of wearing experiences. Multiple viewpoints are thus required to effectively explore fashion from the perspective of experience.

Regarding the outcomes investigated, the studies above generally fall within two scopes: strictly utilitarian clothing (see Black and Torlei 2013; Gordon and Guttman's 2013) or highly experimental pieces (see Fraser 2014b; Bugg 2006; von Busch 2008). By becoming aware of the importance of wearing experiences to both research and practice, more powerful manifestations could be achieved in the two spheres.

If this awareness – proposed by academic research – becomes an integral part of the design process, practitioners might be able to impact wearing not only from the visual and superficial but also from clothes' interiorities, i.e. through experience. In the field of fashion design, there are few research areas able to effect change in the practice of fashion design. One of them is the field of pattern cutting. The next subsection looks into practice-based fashion research dedicated to what precedes clothes in their usual fabrication process: the flat patterns.

THE CREATIVE PRACTICE OF GARMENT CONSTRUCTION

Pattern cutting is at present a lively field of research and one of the first subfields of fashion to gain traction in academia from a practitioner viewpoint. Interested in proposing advances within this scope, practitioners have investigated pattern cutting from diverse perspectives, such as technical, creative and social. In these research projects into pattern cutting the creative part is placed very closely to the technical aspects of constructing garments. The highlighting of the technical aspects might explain one of the reasons of its early developments. Researcher Efrat Shraga (1982), as an early example, proposes the creation of a software based on measurements of the human body to generate patterns that fit better. In his research the interest is technical and, despite involving practice, does not explore creativity. Recent works that expand beyond technical considerations by incorporating creative expression are discussed below. The efforts of researcher Kevin Almond via the International Conference of Creative Pattern Cutting at the University of Huddersfield brought pattern cutting practitioners together and greatly supported the establishment of the field. As a result, the practice of constructing clothes was more broadly discussed in two special editions of the Journal of Fashion Design, Technology and Education in 2013 (volume 6 Issue 2) and 2016 (volume 9, issue 2), dedicated to the 'creative cut' as put by Almond (2013). These publications have helped frame research into pattern cutting as a 'space' of knowledge where practice and theory meet, and strongly support its prominence in general fashion research.

Zero waste pattern cutting is a successful case in expanding the boundaries of a field via practice-based research. The method was previously used as a creative exercise for fashion designers (see, e.g. Teng and Major 2003), but lacked academic definition and discussion. The topic was initially discussed by McQuillan (2009) and Rissanen (2013) through a series of publications. After this initial academic debate, the method was adopted outside academia in fashion design

practice and education. Speaking from a sustainability viewpoint, both authors engaged with the proposal of reducing fabric waste by exploring zero waste methods in pattern cutting. McQuillan (2009) discusses precariousness and uncertainty in designing with a zero waste approach and describes her design process, considering both positive and negative aspects. She sees in zero waste an opportunity to balance fashion and sustainability towards a better future (McQuillan 2009). Rissanen (2013) starts from the distressing statistic that in conventional pattern cutting methods, around fifteen per cent of fabric is wasted. In concluding, he raises questions on the aesthetics of pieces produced under a zero waste process and acknowledges sustainability as a 'creative catalyst' for fashion design (Rissanen 2013, 154). After these initial efforts, a series of works have added to the investigation on zero waste (e.g. McQuillan et al. 2018, Saeidi and Wimberley 2017, Townsend and Mills 2013). Together, these investigations were responsible for multiplying viewpoints on both pattern cutting and sustainability, in which opportunities for education, industry and research were found. Moreover, they support a change in how pattern cutting is usually perceived as a technical practice, allowing potentials in the field to be explored as a creative and powerful practice. As this research is interested in affording changes that affect not only academia but also the practices of making and wearing clothes, zero waste is a relevant example to explore.

Other works challenge the long-established parallel lines of metric pattern cutting and propose models for making flat patterns that take the mobility of the human body into consideration. Designer-researcher Inês Simões (2012) questions the traditional flat pattern model and proposes slight modifications that reflect the motility of the human body. Methodologically, she mixes approaches from the arts, social sciences and clothing engineering by combining methods of self-portraiture, visual measuring and wear trials. Alterations are made to the traditional pattern cutting base to encompass the natural curvature of the arms and legs. Though subtly different from the block pattern cutting paradigm, what Simões offers is a motivation to question already established rules to achieve greater comfort in clothing. Designer Rickard Lindqvist (2015) takes a more drastic approach in challenging the static traditional pattern cutting base. He proposes overcoming the paradigm of parallel lines in pattern construction by looking at the shear forces of the skin as well as the mobility of the average human body. Inspired by the flat patterns of dancer and designer Geneviève Sevin-Doering (Sevin-Doering 2018), he reduces the amount of parts in a garment's flat pattern and takes full advantage of the bias of fabric, which provides flexibility even in elastane-free woven fabrics. His proposal could be criticised for

the increased amount of fabric it uses, moving against the tide of the mainstream contemporary fashion research discourse. Nonetheless, there is great value in how it explores better ways of working with the material properties that fabric constructions can offer, a useful finding for the fashion industry. In order to test the outcomes, he uses real bodies in experience tests, similar to a fitting process in fashion. In this way, despite strongly challenging the paradigm of parallel lines in pattern cutting, his work absorbs a very traditional approach to understanding how the pieces act in real-life experiences.

The majority of the works reviewed here bring qualitative and exploratory approaches to research in pattern cutting. They explore the three-dimensionality of the human body and how flat drawings can represent or distort this body. More often than not, they leave aside an aspect that is intrinsic to understanding the qualities of a built garment beyond visual perception, namely, that of experience. Holding focus on the designers' processes, outcomes are tested in dummies or through brief assessments like fittings, strongly resembling established industry practice (Bye 2010, 45). Though research into how practitioners perform their work is important, the gap in understanding how their outcomes (clothes) are experienced remains. Barnard (2007), Loschek (2009) and Entwistle (2000) claim that clothes gain life and meaningfulness once worn. To look further into clothes as experienced is therefore of utmost importance. That said, what could it mean to add deeper experience investigations to the development of clothing? Could efforts to fine-tune methods for evaluating and understanding the quality of experiences between clothes and people benefit both academic research and industry? In reflecting on such questions, practice-based research in fashion can generate knowledge on what clothes mean while suggesting changes in how they are designed and produced. In the following section, I introduce examples of autoethnographic research that bridge design, production and use to demonstrate what studies on a reflective experience can offer to research in fashion.

RESEARCHING THE SELF IN FASHION STUDIES

The relationship between wearer and worn is far from simple. Philosophers Gallagher and Zahavi suggest that when someone chooses to buy a garment, the explanations for the reasons behind the choice go beyond the firing of neurons in their prefrontal cortex (2008, 176). The authors advocate bringing a phenomenological perspective to understand everyday activities such as buying a dress or wearing shoes. More experimental approaches to practice-based fashion research have added to this stream of thought by investigating the researchers' selves through autoethnography-inspired methods.

By focusing on experiences, these approaches take a more reflective account of both the making and experiencing of clothes (or other worn objects) and make a clear move away from mind-body dualism by giving sensory experiences their due importance. Recent examples take a subjective perspective on wearer-worn relationships, focusing on the process of making (Lee 2012), caring (Spława-Neyman 2014) or experiencing (Sampson 2016; Varcoe 2016).

The works referenced above support the interdisciplinarity of fashion research while speaking from the cross-section of psychology, arts, fashion and philosophy. At the same time, they challenge the ways of designing research in fashion and clothing. These processes of redesigning fashion studies are valuable to understanding the needs of different methodologies and what they have to add to our field of practice and research. When research is immersed in practice, modes of making can suggest new methodologies that better embrace the particular needs of a field.

Sampson (2016) explores the relationship people have with their shoes through a philosophical approach and poetic experiments on shoe making and wearing. Sampson collects data via an autoethnographic approach together with performances to bring this intimate relationship to light, reinforcing the space shoes occupy as 'symbolic, metaphorical, or imaginary artefact[s]' (Sampson 2016, 3). Furthermore, it reckons their material qualities in embodied experiences. By making and wearing shoes, the author observes the stories told by impressions left on the body. The work provides fashion studies with the proposal of wearing as a methodology to better understand how fashion is experienced.

Lee (2012) takes a similar approach to investigate her practice of hand-weaving seamless clothes. She takes a subjective and reflexive approach from a fashion designer viewpoint to investigate the subjectivity of clothes, makers and wearers. Lee discusses the processes of making and wearing garments and making research, and draws parallels between these three practices. In order to do so, she creates a series of hand-woven seamless garments and articulates her creative practice through theory. She proposes seamlessness as a method to create identity in a process of mutual embodiment between maker and object (Lee 2014, 18). In order to support her inquiry, Lee sits among the fields of fashion, psychoanalysis, anthropology, art and cultural theory, amongst others, proving the interdisciplinarity of the field she speaks from. With her work, she confirms how making reflects processes of knowledge building and identify formation, shedding light on wearing as a method to be further explored.

The process of subjectification is also the foundation in Spława-Neyman's research (2014). It examines sustainability issues by raising questions on the 'futuring and defuturing' potentials of design and making practices (building on Fry 1999). Within her work, the domestic space serves as context for the intertwining of research and craft. She explores relationships of care in making, mending and experiencing the worn in a descriptive autoethnography. Through such activities, the author confirms that the things she engages with are not passive. Instead, they directly affect the direction of the relationships. The work highlights the importance of material engagement in design, and concludes that much is learned through and with the bodies.

Varcoe (2016) combines drawing and wearing as a methodology to understand and explore the concept of 'feeling fashion' in an experimental approach to rethinking fashion practices. She engages in fashion performances and participatory art projects supported by methods of 'selfing, scoring and drawing' (Varcoe 2016, 15) to observe feeling fashion. This process unfolds over five iterative projects, developed and investigated longitudinally. Her research question – 'how does fashion affect the relationship between people' (Varcoe 2016, 73) – unfolds in a richly illustrated dissertation, in which Varcoe speaks in the first person, channelling the voices of study participants. She concludes with findings on how collective and individual feelings affect what one wears and vice versa and how clothes can direct the roles played by humans as social beings (Varcoe 2016, 168–171). Her work draws parallels between fashion and artistic practices, and asserts that knowledge can be produced via performative methods.

What the works above have in common is a strong subjective perspective developed through autoethnographic approaches, which are at times combined with other ethnographic methods, an approach present in this dissertation. They engage with theories in philosophy to investigate the relationships between wearer, worn, material and community, highlighting embodied and tactile forms of knowledge, both in making and experiencing clothes. Moreover, they advance methods for what is defined here as fashion research, by deeply exploring the practice of designing and making in fashion. For example, Lee (2012; 2014) posits seamlessness, a clothing construction technique, as a method to encounter and unfold the process of embodiment that takes place in human-non-human relations. Varcoe (2016), on the other hand, takes the phenomena of 'making onesies a fashionable item in a community' to investigate individual and collective responses to a new (and peculiar) trend.

2.3
Conclusion

From the efforts made in this first decade of practice-based research in fashion, it is possible to draw lines that indicate the directions taken so far as well as gaps in the production and possible future endeavours. This section will discuss what the literature review elucidates and indicate areas less explored within the field. As with any multifaceted field of study, practice-based research in fashion can encompass a broad range of approaches, methods and theories, due to which a single methodology is insufficient for investigating its entirety. The role of the researcher as both generator and interpreter of a study makes it necessary to position such works within a postmodern tradition (Creswell 2007, 25). In it, the researcher acknowledges how such inquiry is essentially situated in time and space and breaks with previous scientific traditions that held an objective positioning, placing the object of study at a distance from the researcher. Within this tradition the research is understood as naturally being affected or even produced by the researcher (more on this discussion on fashion in Ruggerone 2017). In their efforts to research fashion from within its practice, designer-researchers face the difficulties and joys of interdisciplinarity. As the plurality increases in the range of practice-based research in fashion, more experimental attempts appear, hinting at new ways of researching fashion and the specific knowledge fashion practitioners may hold.

A consistent trend can be found in the topics addressed in literature, with a clear concentration of contributions that intersect fashion and sustainability, technology and creative pattern cutting[15]. Other intersections include: performance, gender, architecture, costume, experimental fashion, inclusive design, health and sportswear. These concentrated efforts suggest inconsistent growth in specific research areas. The area that interests this research, the longitudinal experiences with garments, has received a narrow number of contributions. When it comes to methodologies, traditional research methods are

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 Creative pattern cutting (Hollingworth 1996, Almond 2010) describes experimental approaches and artistic expressions through different ways of cutting patterns for clothes. These approaches can rely on a single method or combine different methods, increasing the complexity of the work. Despite often increasing greatly the price point of the resulting piece, such methods can strongly support the creative development of fashion designers and pattern cutters (Almond 2010).

often being used, with new proposals still being rare. Even though traditional methods can be helpful in exploring the field of fashion, they may fail to take into account the complexities of the field. Finding the right balance for research questions and methods to address them is essential to accomplish a satisfactory result in the research. In seeking to address this need, some researchers combine traditional qualitative approaches (e.g. focus groups, open questionnaires and interviews) to collect data.

The recent fall of the Cartesian dualist perception supports the idea that theory and practice inevitably inform each other (Dewey 1995), an idea still challenged by some fashion scholars that insist on theory-practice dualism (see Skjold 2008, 81). Angela Finn points out the lack of suitable methods for collecting information on practice-based research (Finn 2014b, 64) and the theorising of "knowledge within fashion from the perspective of the practitioner" (Finn 2014b, 81). She suggests that when practitioners engage with research in more experimental ways, such as practice-based approaches, they "allow new ideas and theory to *arise from research practice,* rather than conducting research practice in a way to satisfy accepted methods as a high priority" (Finn 2014b, 68 [emphasis added]). Granata (2012) suggests that more experimental approaches in fashion research reside at the limits of the field, to which experimental approaches to practice-based research can be included. Through experiments (i.e. a scientific practice aiming at expanding knowledge in a specific area), such efforts can, by reaching out to interdisciplinarity, contribute to reshaping how the field is understood and outlined today (Granata 2012) from within. On the one hand, fashion research can benefit from such actions as it conforms and defines its body and the most suitable methods. On the other, fashion practice can benefit from new approaches to making, evaluating and creating that emerge from research. In that sense, investigations prove to be fruitful not only to academia but also to practice.

The number of journal publications within practice is still small when compared to other approaches that do not rely on practice (Finn 2014b), with most of the contributions appearing in the last five years. Fields more closely related to 'traditional research' – such as articulations with exact and medical sciences through the subfields of pattern cutting and care – are now clearly prominent in relation to other subfields, such as more experimental approaches to fashion design. This is believed to reflect how serial publications still do not welcome artistic research in their formats, where limitations in regard to the length of articles, number of images and the impossibility of using videos and sound still apply.

On the other hand, the production in doctoral dissertations results in a very different landscape, understood as a consequence of the greater flexibility allowed in the content of dissertations based on practice (Thornquist 2014). They present more experimental methodologies and more diverse subfields such as psychology (Lee 2012), death (Interlandi 2012) and performance (Varcoe 2016; Larsen 2014), all categorised here under the subfield 'general fashion' (see Appendix 2). Many of the works, in both doctoral dissertations and journal articles, interlace more than two fields. In this review, though the fields highlighted by the authors are used for categorising them, it is well to note that inter- or pluridisciplinarity is more often than not a common approach to fashion research. The work of Rissanen (2013) is an example that speaks of sustainability through the use of the pattern cutting method. Clarifications on how the works were categorised are provided in Appendix 2.

Pattern cutting
39.3% (11)

Costume
3.6% (1)

Sportswear
7.1% (2)

Technology
7.1% (2)

General fashion
17.9% (5)

Care
14.3% (4)

Sustainability
10.7% (3)
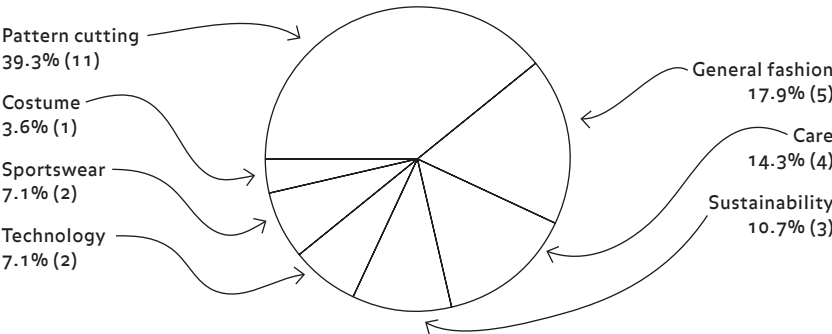
CHART 1
Distribution of practice-based research in fashion by subfields in journal publications.

General fashion
27.3% (6)

Sustainability
22.7% (5)

Pattern cutting
13.6% (3)

Costume/performance
13.6% (3)

Minorities
4.5% (1)

Gender
4.5% (1)

Architecture
4.5% (1)

Technology
9.1% (2)
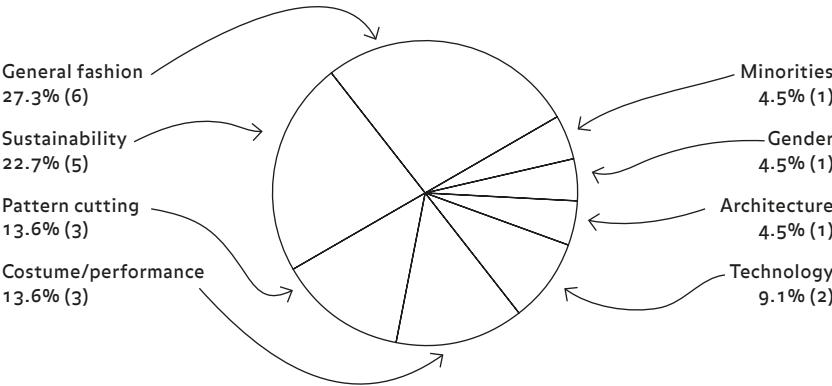
CHART 2
Distribution of practice-based research in fashion by subfields in defended doctoral dissertations.

By juxtaposing Charts 1 and 2 it can be perceived how the scenarios differ between the two arenas: journal articles and doctoral dissertations. While in doctoral dissertations the subthemes are quite varied and balanced (with the exception of Sustainability), the subfield of pattern cutting considerably dominates publications in academic journals. As previously discussed, this might have been motivated by how a journal welcomes initiatives such as that of Almond (2016; 2013). Additionally, restrictions to form and content and a possible small number of submissions from research based on practice (Finn 2014b) may also contribute to the predominance of the field. The result of such initiatives directly affected the development of discussions on the topic, leading to quality articulations in pedagogy, research and practice. This development brings forward the importance of academic journals' support in making an area of research visible and impactful to society.

This literature review indicates that, though experience is integrally central to fashion – i.e. there is no fashion without bodies that experience and produce it (Loscheck 2009; Barnard 2007; Entwistle 2000) – research in this area is usually restricted to brief engagements, making it a clear gap (see Charts 3 and 4). Fittings, photoshoots and evaluation questionnaires are some of the common approaches to investigating how wearers and worn interact. While this certainly reflects how the fashion industry has historically created, developed and evaluated its production, it indicates that fashion research has still not been able to fully acknowledge the value of experience. The life of the clothes does not cease with their first encounter with humans or wardrobes[16]. Instead, it is exactly in time and use that clothes or other artefacts can reveal their agencies, embody meaning and offer function. Regarding the agencies of clothes and how the matters of fashion, such as clothing, can affect design practice, little has been discussed in the literature reviewed. Spława-Neyman's work (2014) is the only to offer the idea that clothes are things we design *with*.

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The wardrobe here is understood as both a physical space holding an individual's wearable belongings or a more abstract comprehension of where one's clothes exist (Fletcher and Klepp 2017). This definition aims at taking into account how different individuals and cultures understand the physical or abstract space of their wardrobe. Considering that, within a wardrobe, garments come and go, change hierarchical positions and are accessed with different frequencies of use, the wardrobe is seen as a non-static space, always in constant flux.

As relationships naturally evolve through time (Fenko et al. 2010; Karapanos et al. 2009), understanding how people and clothes relate requires long-term investigations. In the cases presented here where a longer time frame is investigated, outcomes are highly artistic and framed under an autoethnographic approach (e.g. Sampson 2016; Fraser 2014; Lee 2012). In spite of this framing, methodological approaches that consider fashion from the outset are valuable to the development of fashion studies. Sampson (2018) suggests wearing as a methodology adapted from autoethnographic approaches, which allows the researcher to access what worn things mean and do. My research is interested in adding to such efforts in incorporating long wearing experience assessments to practice-based research. It does so by offering insights into a design production and wearer-worn engagements that sit closer to the everyday. As the literature indicates, experimental or artistic perspectives prevail, rendering the everyday engagements little explored. It is believed that through such efforts, new methods of enquiry can be suggested, able to assess not only academic research but professional work too, in a way that extends beyond visual qualities.

The work presented in this doctoral dissertation aims at contributing to filling this gap. It proposes a method to investigate how wearers and worn interact, looking more specifically at the ways that experimental fashion can affect such interactions. It can be situated in the intersection between research that dissects a creative process grounded on creative pattern cutting experiments and those that take a philosophical perspective to investigate the relationships between maker-wearer-worn. In this way, this work is interested not only in covering the design phase of clothing but especially in understanding the relationships held between the makers and/or designers, the wearer and the worn. The next chapter will introduce key concepts that support this research's position concerning how it understands such relationships. The theoretical frameworks and philosophical approaches presented in the chapter discuss the relevance of considering how wearers, makers and clothes are mutually affected.
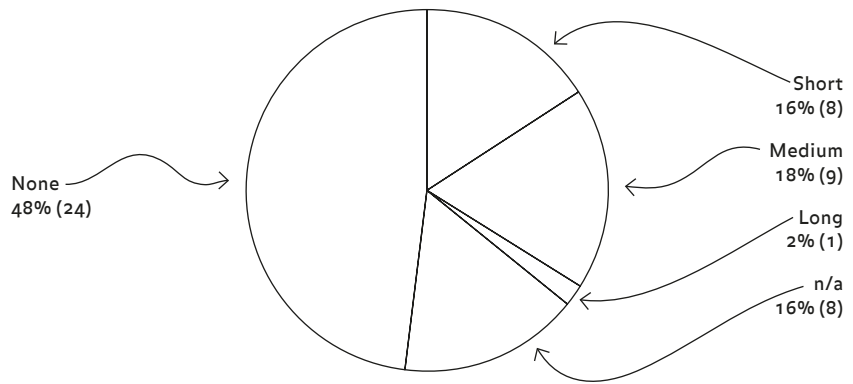
CHART 3
Length of assessments categorised as short (less than a day), medium
(between a day and a week) and long (over a week) as reviewed in
a total of 50 publications (articles and dissertations). The category
'n/a' stands for works that do not provide details on the length of the
assessments, even though they mention or allude to such evaluations.
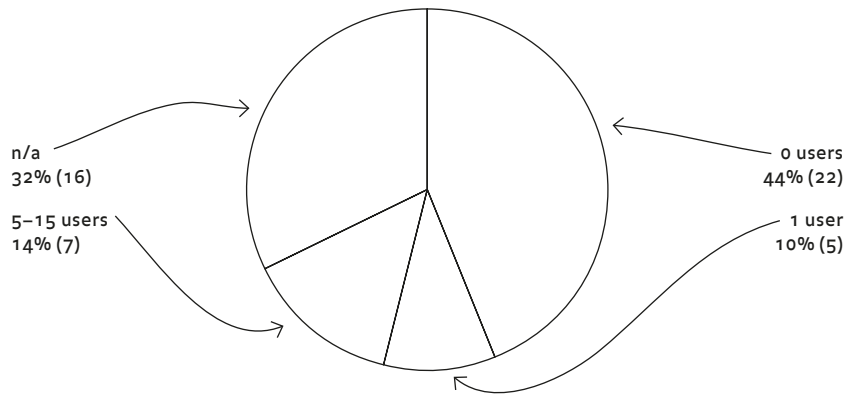
CHART 4
Number of users involved in studies in the literature reviewed.
The category 'n/a' stands for works that did not quantify the number
of users even though they do mention such involvements.

3
Fashion
matters

THE PREVIOUS CHAPTERS SIGNALLED the importance of the experiences
that compose fashion – such as wearing and making clothes – as a
source for inquiry. An overview of practice-based academic research
showed that such topics have only recently been considered to be
of scholarly interest. Recent efforts decentralise agency in such
experiences, considering that not only humans, but clothes too, hold
active parts in the development of relationships. The research questions
proposed here ask about the agencies and relationships between
wearer and worn (see Chapter 1). They require that these relationships
be understood as an interaction. To discuss relationships in such terms
implies that these two entities are seen as active, both effecting and
receiving inputs within the system. Through the questions, the research
explores ways to create more active engagement between the different
entities under discussion. As the research adopts a theoretical position
that understands clothes as active, considerations must be given to
how this engagement is understood in order to discuss relationships in
these terms. This chapter exposes the underlying concepts behind this
doctoral project, which emerged from the findings. It looks into notions
related to material agency, such as affect and becoming, drawing from
Merleau-Ponty's phenomenology, Deleuze's philosophy[17], and their
contemporary unfoldings. Their work is used as a framework to advance
knowledge in fashion and invite the emergence of new practices within
the field.

The first section in this chapter is concerned with phenomenology as a
framework to investigate experience with examples from the field of
fashion studies. After that, the concept of affect (Deleuze and Guattari
1987) is introduced via the work of contemporary fashion designers.
In the next section, the emergence of material agency theories and
how they have been employed in the field of design and fashion are
discussed. The result of these affects in wearer-worn relationships as
seen under the light of material agency theory is understood through
the concept of becoming, explored in sequence. Finally, the chapter
concludes with an overview of how this theoretical background is

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Some of the concepts explored in this chapter
were already considered in the development of
the research questions (i.e. agency). Others, on
the other hand, stemmed from the findings, which
pointed out to new spaces of knowledge to be
considered (i.e. affect, embodied knowledge,
becoming). This is due to the iterative design of
the research, which meant that the theoretical
framework went through changes during the
process (see Figure 7). Here, these concepts are
organised into schools of thought, not reflecting
the chronological order in which they appeared in
the research.

applied to the research project. Throughout the chapter, examples are given to bridge the theory to the experience of wearing clothes from my own interpretation of the literature.

3.1
Outlining the theoretical background

[The black asymmetric trousers] When I tried it for the first time it made me feel at the same time embraced and unbalanced, safe and daring. Nearly 20 cm of waistband defines my waist while about three metres of wool falls in different directions, at times resembling a skirt. "That's not a pair of trousers, it's a statement" I heard once. But what kind of statement it is making I would not know. I think it is more of an act that we do, together. Or I hope. As I climb stairs I hold some of the wool in my hands, making the trousers float well above the ground. When walking, a crispy sound follows us, reverberating on the deep folds. Generally, as I wear it, I lose sense of the limits of my small body. I become a little bit more like the trousers, a little less like me. (Author's wearing diaries, 12th February 2016)

The ontology of fashion has been widely discussed, though perhaps not necessarily debated (Almila and Inglis 2017). Among the various definitions of the term, there is widespread agreement on one part: fashion is not exclusively a matter of things, nor is it only a matter of abstract values, images and ideas. Fashion is made up of material and immaterial entities, in a permanent state of flux, constantly affecting each other. While fashion studies typically retain focus on the immaterial dimension of fashion, understanding both the material and immaterial dimensions of fashion is essential to grasp its phenomena holistically. In the words of feminist theorist Ilya Parkins: "What is needed is a nuanced materialism that can attend to the small moments that constitute [...] fashion, revealing the entwinement of material objects with apparently discursive practices of identity" (Parkins 2008, 502).

The previous chapter has described how research efforts have prioritised a focus on fashion's immaterial side, an approach consolidated in the sixties with the work of Barthes (1990), which is still being built on (c.f. Thornquist 2014). Such efforts asked questions that

look into fashion's symbols, meanings, what it communicates or how it represents culture. With them, fashion studies have greatly advanced. They provided the field with useful tools to understand fashion as a sociological and cultural phenomenon from approaches such as semiotics (e.g. Barthes 1990), sociology (e.g. Davis 1992) and history (Steele 1998). When it comes to the material dimension of fashion, much of the research has been conducted from an objective positioning (cf. Smelik 2018; Ruggerone 2017). These studies focus on the ontology of clothes or apply a semiotic or cultural studies perspective to understand a clothing item. Such focus is a common approach to articulations between fashion and history or museum studies. They support the mind-body dualism by looking at clothes not as things with which we interact, and mutually affect each other, but onto which we project our culture. Essentially, the abovementioned approaches speak of fashion as shaped by humans – and our cultures – but ignore the fact that the matters of fashion also shape us, as active matter.

Confronting this restricted interest in the ontological characteristics of clothes (i.e. what clothes are), this dissertation proposes that we look into their active side, or in other words, how they 'behave' and affect other bodies (i.e. what clothes do). By transposing the focus of interest, "the emphasis is shifted from an ontological concern about *what the body is* to an ethological account about *what the body can do*, namely what it can become through encounters with other bodies endowed with their own set of affective (material and immaterial) capabilities" (Ruggerone 2017, 579 [original emphasis]). Cultural theorist Lisa Blackman supports that such a 'turn to affect' can be particularly helpful in understanding that such relationships are "not confined to meaning, cognition or signification" (Blackman 2012; x-xi). As little has been dedicated to how the experience of wearing clothes unfolds, the recent efforts that look at the material dimension of fashion from the perspective of experience call for further contributions from within the field.

To explore this gap, this doctoral research takes a revised phenomenological perspective (Verbeek 2005) in which things, such as clothes, are seen as active in shaping how humans make sense of and exist in the world. This perspective brings focus to how matter is understood, decentralising the agencies previously centred on humans alone. Artefacts "[...] in short, disclose a world" (Verbeek 2005, 79), they directly affect both environments and experiences and their agencies should be considered when we speak of human-artefact relationships. Similarly, clothes (as wearable objects) are responsible for disclosing a world – they can direct movements, shape bodies or change the ways one interacts with what is around. The wearing diary

quotation that opens up this section illustrates this as it identifies how wearer and worn effectively shape – or affect – each other, in physical or abstract ways.

To look at clothes as holding agency, and therefore the capability to affect, helps this research to understand how garments may offer more active engagements and effect becomings in the different entities involved. The revised phenomenology provides concepts to explore 'what (experimental) fashion can do' – adapted from Spinoza's question 'what can a body do?' (see Buchanan 1997; Spinoza 1994; Deleuze and Guattari 1987, 256). Here, while concepts of affect and agency explain how clothing and people interact, the notion of becoming describes the results of these interactions[18]. Open to the affects of clothing, individuals become with the things they wear, as noted in the introductory quote in this section. Affected by the agencies of wearers, clothing become with their wearers. The following sections will explore these central concepts to the work and articulate them with examples from literature in fashion studies.

3.2
Phenomenology: a framework to investigate experience

A theoretical support that accounts for experience is needed to understand what lies between wearer and worn. Classical phenomenology in philosophy (e.g. Husserl 1970, Merleau-Ponty 2012) places the lived experiences upfront and suggests a framework to how our being in the world can be approached. Even though these foundational works do not provide any clear methods for a phenomenological enquiry, phenomenology appears as an approach to qualitative research guided by lived experiences (Creswell 2007). Furthermore, some designer-researchers have drawn from it guidelines to build their research or artistic methods (cf. Sampson 2016; Smelik et al. 2016; Kozel 2008). Such guidelines serve as a tool to understand experience free from the Cartesian dualism that clearly separates subject and object, depriving things of an active

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In the work of Deleuze and Guattari, becomings are not necessarily seen as the effected affects. Though the term offers this flexibility, becomings can also be understood as the affects themselves.

position. Understanding that experience precedes or starts reflection (and not the other way around), one of phenomenology's founding philosophers, Husserl (1970), highlights the importance of furthering knowledge on how experience takes place. His work was advanced by Merleau-Ponty, who bridged phenomenology to arts (see Johnson 1996). Breaking the boundaries between object and subject, Merleau-Ponty speaks of the act of painting not as one of portraying but as one of *being in the world*, or in other words, of experiencing and being affected by a "world's instant" (Merleau-Ponty 1964, 169). To him, our general experiences in the world, beyond the acts of creating artworks, follow a similar thought – our experiences are strongly affected by our being in the world. If this idea is transposed to the ways humans and clothing interact, the way garments can evoke thoughts and actions due to their materiality, together with the space-time one finds oneself in, can be considered as an example of being in the world. When looking at clothes from such a perspective, the focus is laid on the exchanges that take place in experience, rather than the cultural values embedded in clothes. With this, it is not meant that the experience is devoid of any cultural affect, but that other forces are at play and must be accounted for.

Merleau-Ponty's later works shift focus from experience as something that takes place in our senses to an "overlapping or encroachment, so that we may say the things pass into us as we into the things" (Merleau-Ponty 1968, 123). Through this thought, Merleau-Ponty develops the notion of 'flesh of the world', which can be understood as any worldly matter (Mazis, 1996, 74–76). What is perceived here as matter is both what is physically tangible as well as the intangible. The relationships between clothes and individuals, for example, can be seen as one of the many matters that compose fashion. They become entangled in experience and strongly affect each other as they 'pass into us as we into things'. In a way, we incorporate some of what passes into us in the form of a difference – be it subtle or not. These differences can impact us in our actions and choices or more physically in our bodies. Imagine how the high waist in the 60s defined women's shape, physically altering their bodies or how the recent sneakers trend has the power to change the way we relate to the city as a space to be occupied by foot. This difference is taken as a *becoming*, a concept which will be explored later in this chapter.

A fashion study based on a phenomenological approach broadens the understanding of what a specific piece studied bears and can offer to lived experiences. Taking as an example a blue woollen cardigan, a phenomenological investigation could produce information like how the light is reflected on the folds when the piece is worn, how the

material feels to the touch – is it warm, cold, smooth or rough – does it provide support to the body or feel heavy on the shoulder seam, does it make the wearer turn on the air conditioning, or how does it change the way one sits, etc. The work of Marion Young (2005) is an early effort in taking such a phenomenological approach to research in clothing articulated with feminist studies. In a series of articles, she exposes how women's actions and relations to their environment are affected by their situated and bodily experiences. In "Throwing Like a Girl" (1980), Young explores how female situatedness (in which clothes are found), hinders women's movements to a restricted space. To 'throw like a girl' then is not biologically different than to 'throw like a boy', but rather a differently situated action affecting their bodily experience of throwing.

A more recent example shares parts of this question. The work of Smelik et al. (2016) looks into wearables and solar cells embedded in a jacket. Here, the notion of embodied experience is central to investigating how individuals and such pieces relate. The authors draw on a reformulation of phenomenology via strands in new materialism[19] (Barrett and Bolt 2013; Coole and Frost 2010; Bennett and Joyce 2010), allowing them to reveal how technology can affect such relationships. They conclude that solar fashion can impact users' awareness of sunlight as well as invite social interaction, pointing out how these clothes affect wearers.

Despite stemming from different disciplines, the two works cited above share findings on how context and wear affect our being in the world, a concept that becomes relevant when dealing with relationships and experiences. Added to that, they call for a revision of Merleau-Ponty's phenomenology so that contemporary concepts and matters can be better described and investigated. By articulating phenomenology through the framework of material agency, this research invites the entanglement of Merleau-Ponty's phenomenology with concepts that support a decentralisation of agency on humans. What does it mean to investigate and design clothes that can take an active, thus affective, part in wearer-worn relationships?

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New materialism is one of the many streams in theory and philosophy that refuse to look at matter as inert, and propose that the position of humans among other matters be reconsidered. Some of the thinkers in the forefront of new materialism are Barad (2007), Bennett (2010) and Braidotti (2013), to name a few. Though at present the field has spread to a wide spectrum of disciplines, those of biopolitics, feminist theory and environmental studies are still in prominence.

3.3
On affecting bodies and becoming with clothes

A phenomenological gaze at the relationships between human bodies and the clothes they wear concludes that "[n]ot only are they intertwined, but they coshape one another" (Verbeek 2005, 112). Negrin (2016, 125) suggests that some fashion designers emphasise this perspective in their work. She points to Issey Miyake and Rei Kawakubo as representatives of this approach. In their work, garments are constantly being reshaped and reconfigured by the body of the wearer, a kind of affordance allowed by the material qualities of the designed pieces. In a way, they reconfigure and reshape the wearer's body too. "[They] allow for a much more fluid and organic relationship between the fabric and the body in which the garment is constantly changing its form in response to the movement of the body. Rather than the body being constricted by the fitted garment [...] the garments of Miyake and Kawakubo allow for a greater range of movement." (Negrin 2016, 126). However, the great potential of these pieces, to me, lies not in the 'greater range of movements' the wearer is allowed, but rather in what the encounter between wearer and worn invites and offers – be it a movement, a thought, an act. Figure 4 presents one of the works discussed by Negrin, the 'Dress meets body-Body meets dress' collection by Rei Kawakubo for Comme des Garçons. In it, while some movements are certainly constricted by the soft bumps, it is the experience of space and self that the pieces particularly affect as they protrude beyond the wearer's body, producing together something new. The powerful part clothes take lies in their political stances and how they affect wearers' experiences of the world when worn, what they become with these soft extensions, and what the clothes become with added movement and life.

Gender theorist Stephen Seely (2013) writes about such works as 'affective fashion', an approach to clothing and fashion design that seeks to expand beyond the visual. "An affective approach to fashion, moreover, involves an attention to its political implications, rather than reducing it to the wholly aesthetic [...] giving it access to a virtual field of potentiality." (Seely 2013, 248). In the introduction to the English translation of *A Thousand Plateaus* (Deleuze and Guattari 1987), Brian Massumi defines the terms affect and affection with clarity. He points out that "[n]either word denotes a personal feeling (*sentiment* in Deleuze and Guattari). *L'affect* (Spinoza's *affectus*) is an ability to affect and be affected" (Massumi 1987, xvi). This ability, he explains,

can also be perceived as the processes of increasing or diminishing the body's capacity to act. To put it in short, suggests philosopher Ian Buchanan, affect is a "capacity that a body has to form specific relations" (1997, 80), in which bodies and affects can be either human or non-human.

FIGURE 4
One example of Rei Kawakubo's work, in collaboration with choreographer Merce Cunningham. (Image credits: Merce Cunningham, *Scenario*, 1997.)

To this definition, and in connection with the intents and outcomes of this research, it must be added that even though affect according to Deleuze and Guattari (1987) does not necessarily denote feelings or emotions, this cannot be overlooked[20]. Queer theorist Sarah Ahmed (2006) discusses affects as 'impressions'. Drawing from phenomenology, the author also understands these 'impressions' as reorienting both humans and non-humans. In this way, humans thus impress on things and things on humans, affecting the ways they are arranged in place and time. However, what interests me more

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A good description of affect is found in Blackman (2012). Borrowing from Massumi (2002) and Williams (2010), she describes affect as "autonomous, pre-personal, non-intentional and a force that exceeds the psychological subject (Massumi 2002a). Affect within this perspective does not require an anthropocentric or psychological subject to understand or register its workings. Affect relates to 'processes without a subject' (Williams, 2010:247)" (Blackman 2012, 16).

in Ahmed's understanding on affects (or in her words, impressions) is how she embraces emotions and sentiments in the concept by acknowledging that emotions are relational (Koivunen 2010, 14; Ahmed 2004). To be impressed by the things one wears goes beyond the elastic band marks on the waist while wearing a tight skirt or being labelled as a teenage misfit due to one's choice of seemingly unconventional clothes. These affects must be also understood as feelings (be they emotional or not) capable of provoking profound sensorial, political and emotional implications. The interactions between people and clothes can result in, for example, tactile understanding of surfaces, production of meanings, or ignition of chemical and physical reactions via hormones.

What will happen in the encounter between bodies is unknown; these 'capacities' cannot be perceived or understood before the experience takes place (Deleuze 1992, 627). You may often know the reasons why you grab a certain dress from your wardrobe, but what that dress will afford, what kind of openness it will invite, cannot be predicted. When discussing such 'potentialities', the various bodies involved play a relevant part: they are the locus of affect. That means that despite such 'potentialities' being dependent on relations to be activated, there is no affect without a body, without matter (Buchanan 1997, 80). For this reason, in order to speak of how clothes can affect our bodies (and of how our bodies can affect clothes) it is essential that their material agencies be considered, their 'capabilities to act', to form relations and to become re-signified, re-shaped and re-formed with use. Deleuze and Guattari suggest that "[...] We know nothing of a body until we know what it can do, in other words, what its affects are, how they can or cannot enter into composition with other affects, with the affects of another body" (1987, 257). In this movement of exchange of affects, actions and passions, the authors see the emergence of another – more powerful – body: a body that *becomes with* other bodies through interaction.

When speaking of 'what a body does' Deleuze and Guattari directly draw from Spinoza's work (1992), in which the important distinction to make is not between human and non-human, alive or inert (Bennett 2010). Instead, the interest falls upon the encounters and affects that a body can offer. They indicate that affects are becomings – the dynamic exchange of different degrees of powers, of what the bodies are capable of. To understand what a body does, they suggest, the characteristics of a body should not be at the core of interest but instead its affects, what is it that that specific body can do when in interaction with other bodies. Bridging this idea to fashion, two different ways of investigating 'fashion matters' can be

counterpointed – one anchored on a more classic museology tradition and the other on a contemporary materialistic tradition. Whilst the first looks at the static characteristics of matter (e.g. length of sleeves, composition of a lace) the latter is interested in its becomings (e.g. how the body promotes and receives changes in a relationship).

Though coming centuries later than the writings of Spinoza[21] or the Asian concepts of active void[22], recent streams of physics, more specifically theories of chaos and complexity have emphasised the (unexpected) fluxes of changes intrinsic to all matter (Coole and Frost 2010; Barad 2007). Feminist theorist Karen Barad (2007) builds from quantum physics – more particularly from the work of Niels Bohr – to prove that all things emerge from the interaction (or in Barad's words, intra-actions[23]) between the different existing particles. In discussing Barad's work, Tim Ingold clarifies how matter can be understood as being in such a constant state of flux:

> Materials do not exist, in the manner of objects, as static entities with diagnostic attributes; they are not – in the words of Karen Barad – 'little bits of nature', awaiting the mark of an external force like culture or history for their completion. Rather, as substances-in-becoming they carry on or perdure […]. Whatever the objective forms in which they are currently cast, materials are always and already on their ways to becoming something else. (Ingold 2013, 31)

Just as Ingold reminds us, it is not necessary to go as far as the level of quarks and gluons to observe clothing. It is well to keep in mind the general idea that all matter is in constant change, and under the light of such scientific findings, *becoming* becomes more relevant than *being* and processes more relevant than states (Gleik *apud* Coole and Frost 2010, 13). This research is hence interested in these becomings between wearer and worn, as they act upon each other, in

21
Spinoza's works date from 1670–1677 and gave rise to many discussions on the agency of matter throughout the centuries, gaining particular force in the last three decades, especially though Deleuze and Guattari's articulations (1998).

22
Here I am thinking particularly of the concept of 'ma', with unknown date of origin, adopted in Japan from Indian Sanskrit writings of [what is known today as] Buddhism (Isozaki 2011, 95). Articulated in the field of design (Valle-Noronha 2014; Akama 2015), it acknowledges a *becoming together* between different matters (Akama 2015).

23
Karen Barad (2007) differentiates between the terms interaction and intra-action. For the author, intra-action denotes that the exchanges between different bodies cannot be dissociated from the bodies themselves. The word interaction in turn may locate these exchanges in a space 'in-between' – and in this way gives the idea of interaction as something external to the bodies. Here I am not making this precise distinction, and use the term 'interaction' to describe this exchange in a more flexible form.

engagements that at times resist or are more open to these affects. How can the worn incite their affects on the wearers? How can we design clothes open to wearers' affects? What would it mean to become *with* the things we wear?

> [By framing fashion within affect studies] the power of clothing (everyday or fashionable) to transform the wearers is pushed to the fore and the event of selecting and wearing clothes can thus be interpreted as an encounter between a human body and objects that initiates a process of mutual *becoming with*. (Ruggerone 2017, 580 [my emphasis])

Against the background presented above, and especially with the discussion on the notion of affect, it is made explicit that we, as humans, are in states of constant reconfiguration as we relate to the things we wear. In many ways we become with what we engage with in interactions at different levels. The notion of becoming used in this work is part of the concepts elaborated by Deleuze and Guattari (1987) and refers to the results of a capacity to affect and be affected. The authors note that "[...] becoming is not a correspondence between relations. But neither is it a resemblance, an imitation, or at the limit, an identification" (1987, 237). Becomings are essentially related to 'multiplicities', and not to single entities alone; thus the term is an active verb in the infinitive form and not a fixed state, and it can be understood as the result of an active affective engagement. Fashion, with its passing of time and constant transformations, already instigates the articulation with becomings. However, what fashion actually provides, in a hierarchical and dictatorial approach (cf. Chapter 1), is strangely closed to promoting affects. Overcoming the constant emphasis on fashion as a system of meaning production might open a path to envisioning it as a field of engaged interactions, where its different matters become possibilities instead of statements. Can humans become with fashion towards a reckoning of its material agency and its capacity to affect changes in the world and in us?

3.4

Material agency in design and fashion studies

In the field of design theory, the discussion on material agency starts from the notion of *affordances*. Proposed by psychologist James J. Gibson ([1979] 2014) the concept of *affordances* refers to a possibility of objects to 'invite' human and non-human interactions. Gibson noted that designed objects often evoke their function through form, touch or other perceived (or even unperceived) properties. The concept was brought to the design community with Donald Norman's articulations (or, at times, imperative statements) on the term (1988). Though not initially Gibson's intention, the term was incorporated by the design community to refer more strictly to interaction with human-designed objects, reducing its potentials of breaking with an anthropocentric viewpoint. Whilst the notion of affordance, as articulated by Norman (1988), denotes essentially a mental process, affect and agency inherit a non-dualist view of experiences as embodied, and thus taking place in both body and mind, and situated in space and time. However, the idea that non-animated matter can act in the world precedes the notion of affordances by a few centuries and has been increasingly revisited (see, e.g. Malafouris 2013; Bennett 2010; Knappett and Malafouris 2008; Gell 1998).

In the twenty-first century other authors started developing further how artefacts hold agency. For example, in the work of anthropologist Daniel Miller (2005) and philosopher Peter Paul Verbeek (2005) artefacts are understood as the result of an artistic or design process, and not generally matter. Despite stemming from different fields of knowledge, the two authors are prominent voices in bridging discussions on material agency into the field of design as they talk about (material or immaterial) artefacts. They reckon that even though the projection and production of artefacts rely so much on human choices, their materiality should still be taken seriously. Recent years have seen fashion scholars engaging in the discussion, supported by the early efforts of Entwistle (2000) in accounting for wearing clothes as an embodied practice. Smelik (2018), Bruggeman (2014) and Tiainen et al. (2015) add to the development of the field under a new materialist perspective. In their enquiry, they look into fashion designers that make use of new technologies, such as 3D printing and wearables, among which the work of Iris van Herpen (Figure 5) is the

most prominent. In this work I seek to support the viewpoint that not only clothes built with and through new technologies, but rather clothes in general, hold the ability to affect and can benefit from being approached from such a framework.

FIGURE 5
In the images, two Aeriform pieces by Iris van Herpen (model: Park Soo Joo, photo: Warren du Preez and Nick Thornton) as featured in Another Mag. Retrieved from http://www.irisvanherpen.com

Fashion researcher Anneke Smelik (2018) looks to new materialism as a framework for studying fashion, providing the field with a fresh perspective. Scholars in design and material culture (e.g. Verbeek 2005; Miller 2009; Appadurai 1986; Boradkar 2010) support the development of her research. She confirms that this framework can help fashion overcome its labelling as a field of mere representation which privileges the immaterial (Smelik 2018, 36). By acknowledging the importance of matter, fashion researchers are able to break with the semioticist tradition established by Barthes (1990) that largely ignores the material agency of clothes (c.f. Thornquist 2014).

These new perspectives call attention to the matters of fashion, not as traditionally approached by many museologists and historians – with fixed measuring systems as tools to read a garment (Steele 1998, 329; c.f. Finn 2014a) – but *with* and *through* the bodies that wear and are worn. What if, instead of reading clothes we listen to them? If instead of rulers and scales and magnifying glasses we take our experiences with making and wearing clothes as tools to make sense of fashion? This work advocates for contributions that merge information from fashion practitioners and wearers (through ethnography and autoethnography) to find new ways of researching fashion and to unlock the potentials of fashion as a catalyst to change.

3.5

Conclusion

In this chapter, I explored contemporary streams in philosophy, inspired by the works of Merleau-Ponty (2012), Deleuze and Guattari (1987), Barad (2007) and Bennett (2010) as a theoretical support to investigate clothing and fashion from the viewpoint of experience. As they reverberate in scientific inquiries in the last two decades, they reach the realm of fashion studies connected, especially, to articulations with technology. At present, new processes and materials emerge and start making their agencies clearer in the ways they affect relationships (e.g. responsive textiles, additive manufacturing, biomaterials, etc.). These theories help us understand how these relationships are formed and evolve. This doctoral dissertation proposes to explore a different side of the articulations between fashion and material agency from the works mentioned in the previous section. Taking advantage of a similar theoretical support to look into fashion and its matters (e.g. Merleau Ponty 2012; Verbeek 2005; Miller 2005), it seeks to demonstrate that not only clothing embedding electronics can benefit from such a philosophical approach. Instead, it brings into the discussion pieces that are already part of our everyday engagements with clothes. Via wardrobe interventions it discloses the interactive potentials of clothes, adding empirical foundations to the development of the theoretical constructs of material agency into fashion theory and design.

This theoretical framework allows the research to reckon with relationships between humans and non-humans (i.e. between wearer and worn) as multidirectional and communicative, as previously suggested through the work of Flusser (1999). It provides me with terms to explore and explain the findings, as well as suggest ways to interpret and present the collected data, via a situational and phenomenological approach (Creswell 2007, 156–157). Nevertheless, while the applications of these theoretical viewpoints to research seem clear, their highly philosophical and abstract foundations have received strong criticism. They are seen as lacking empirical constructs (cf. Böschen et al. 2015) and little applications have been done to inform research methods, especially in the field I speak from. This research seeks to support filling this gap by adding empirical studies investigated under the light of a material agency framework. Ultimately, by applying the framework to creative production and empirical studies, the work contributes to testing how fashion design practice and theory can benefit from it. Added to that, the concepts help envision what would be the results of a shift in the way clothes and wearers interact, when individuals perceive the things they wear not as passive matter but as agentic forces ready to act.

4

Intervened
wardrobes

THEORETICALLY SITTING AT THE INTERSECTION of fashion, design and philosophy (see Figure 9), this research explores how design research methods can be applied to fashion research and practice. It does so via an experimental approach, in which both the practice of making clothes and the empirical reality of clothes in use are taken as research material. This chapter consists of six sections. It starts off by describing how the research was crafted, exposing its design. The second section positions the research within research through design- and practice-led approaches to research in design, and acknowledges the impacts of intersecting design, fashion and philosophy in the development of the work. The third and fourth sections briefly review methods used for investigating the practice (from the practitioner viewpoint) and its outcomes (as experienced in context), indicating the research strategies in autoethnography and Cultural Probes used in this doctoral project. Awareness of the state of the art in practice research in arts and design can inform research in fashion practice; to this end, the fifth section describes the wardrobe interventions and introduces how the methodology was enacted in the research. Lastly, the sixth section concludes with brief reflections on what the methodology offered the research[24].

4.1
Crafting the research

This research entangles the practices of doing research and making clothes. In this section I describe how the research evolved from the outset, acknowledging changes in course in regard to its theoretical backgrounds and practice.

The doctoral studies did not start with a clear research question but rather with a general interest within my field of practice and research, as is the case with many investigations based on practice (e.g. Lee 2012; von Busch 2008). As a consequence, the research developed organically, being affected by its own unfoldings as experiments and results. Figure 6 provides an overview of the research through time. It illustrates how the knowledge is built in the work, combining the practices of reading, making (via two clothing projects), writing (diaries and research papers) and analysing collected material. The final result is a dissertation that invites the fields of design, fashion and philosophy into a conversation on clothing, agency and experience.

[24]
Parts or versions of this chapter have been previously published in Valle-Noronha and Wilde (2018).

| R | Reading | Wi | Wardrobe interventions | W | Writing |
| M | Making | aE | Autoethnography | A | Analysis |
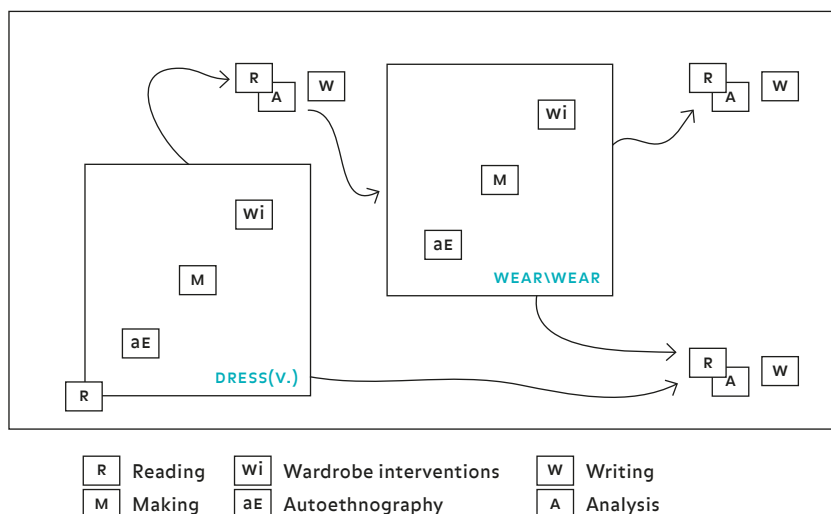
FIGURE 6
The development of the research. The image shows how each different
activity took place in time. The large area represents the broad research
question and the smaller ones the questions specific to each experiment.

The research started with a literature review in fashion design, still
unknown to me at that time, as I lacked formal education in the
field. Two cores of literature were explored: alternative approaches
to mainstream modes of making clothes and general literature
on research based on practice. The first core led to literature on
sustainability and neighbouring topics (e.g. Rissanen 2013; Gill
and Lopes 2011; Niinimäki 2011; Fletcher 2010; Fletcher 2008).
The latter included the foundations of research done via artistic
practice (Edmonds and Candy 2011; Frayling 1993; Dewey 2005)
and applications of such an approach within design (Koskinen et
al. 2011; Gaver et al. 2000). My intention was to seek out methods
to investigate the targeted phenomena: the relationship between
individuals and the clothes produced under an experimental
setting. This intention reflects both the academic inclination at the
Department of Design at Aalto University towards user informed
design as well as my previous background in Visual Arts, resulting in a
combination of inputs coming from both Arts and Design. Being part
of the research carried out in the Department of Design suggested an
experimental approach to research in design combining practice-led
research, Cultural Probes and research through design. To this initial
set of literature, I responded with the first experiment, Dress(v.).

Dress(v.) explored my personal experiences of dressing and making
clothes via autoethnography-inspired methods (see Chapter 5).
Research methods such as Design Probes (Mattelmäki 2006) and

Cultural Probes (Gaver et al. 1999) – added to the growing need to account for how the pieces would be experienced in the real world – defined the investigation approach. The notion of deployments as a method for research started to guide how the investigation would unfold. Later this notion would become 'wardrobe interventions' – an adaptation of Cultural Probes to fashion (explained further in this chapter). In parallel with the deployments, the focus of the theoretical background was narrowed to experiences with artefacts (e.g. Miller 2005, Young 2005). The initial consideration on user-experience (e.g. Laschke et al. 2015; Kujala et al. 2011) and person-product attachment (e.g. Mugge et al. 2005) was reviewed after testing an UX method (cf. Valle-Noronha et al. 2018, Valle-Noronha et al. 2017).

The application of the method did not allow me to collect the data expected: i.e. a thick description of the relationships between individuals and their clothes, encompassing agencies and affects beyond those of the users. While the more traditional paths in these streams of inquiry in design (user experience and person-product attachment) do inform us how people make use of and discard designed objects, they often fail to account for how these objects in turn affect their users. The consequence is a theory exclusively informed by an anthropocentric viewpoint, where individuals' impressions and perceived symbolic meanings override more spontaneous manifestations and perceptions of the designed objects' agencies. As a result, the user-experience perspective was abandoned as a theoretical framework, though traces of this initial attempt can be found in the data interpretation approach (see section 5.7 in Chapter 5). Consequently, the Cultural Probes are confirmed as closer to my research interest and design intentions as they welcomed a more interdisciplinary articulation with theory. With this change in theoretical scope, new questions arose, leading to a second experiment, Wear\Wear.

Wear\Wear built iteratively on findings from Dress(v.). It experimented with UX Curves (Kujala et al. 2011) as a means to collect information on wearing experiences over a longer time frame. Despite the difficulty of collecting the desired data with the method, it served as inspiration for bridging research and design in fashion. The findings from the first experiment demanded adaptations of the method used (discussed later in this chapter). With the findings of Wear\Wear, the concepts of becoming, affect and material agency became intrinsic to the research. These concepts suggested adjustments to the theoretical perspective in order to embrace necessary articulations with philosophy and understand the new findings. Articulations between theories in art, material culture and design (Barrett and Bolt 2013; Miller 2005;

Verbeek 2005) were useful in helping to define terms to communicate the findings. At that moment, little literature was available in the specific field of fashion (Entwistle 2000; Bruggeman 2014). The last year, though, saw resonances to fashion emerge. As I write the final version of this dissertation (in 2018), I can count on the support of works that directly speak to my field of interest (e.g. Bruggeman 2018; Smelik 2018; Sampson 2018). These emerging efforts both attest to the validity of the research inclination and help in articulating the conclusions to the work.

I undertook a cyclical process of reading, making and analysing, which constantly reviewed questions and theories in a hermeneutic approach. Artistic researcher Maarit Mäkelä defines a hermeneutic approach as a cyclical process of producing knowledge (2006, 69–72), a school of thought frequently used in research that includes practice (e.g. Kuusk 2016, 107; Almendra 2010, 20–24). In these works, as the research develops and understanding advances it returns to its starting point, at which time it is already different, affected by the experiences gained through researching and making (Mäkelä 2006, 68–72). The way this perspective understands the role of experience and context in the outcomes of research is similar to what philosopher Donald Schön (1983) describes as a reflective practice. According to Schön (1983) experiences that precede the research time frame must be taken into consideration. The practitioner's skills and ways of making – as developed through time – become an integral part of their work. By allowing closer entanglings between doing research and making artefacts, the practice becomes naturally reflective. Previous experiences, thus, directly influence the practice and the outcomes of the investigation.

Similarly, this research is constructed around iterative design experiments that both influence and are influenced by the readings during the project. The design experiments were not planned in advance, but emerged from the questions, readings and preliminary findings, in an appreciation of the ways in which context affects creative work. Correspondingly, the method used in the investigation was not fixed at the outset. It demanded adjustments as the experiments evolved. The dissemination of the research findings via conferences and journal publications (see Appendix 16) welcomed new perspectives, supporting the cyclical movement of the research.

As described above, this iterative process resulted in a series of diverging paths along the process, which will no longer be explored in the following chapters. Instead, the remainder of the dissertation focuses on what was effectively implemented in the research and considered in the final results.

Figure 7 illustrates how design, fashion and philosophy informed the research over time. It shows the initial dominance of fashion and design theories. In time, design theory gives space to other literature, even though it is still present especially via the research method. Support from philosophical approaches in phenomenology and material agency becomes more relevant as the findings emerge. Additionally, the field of fashion gains strength as new literature emerges in support of the framework of this research. These three fields interplay to construct the knowledge, approached by practice in a research through design approach.

research through design

DRESS(V.)

Design theories

WEAR/WEAR

Fashion theories

Phenomenology and material agency (philosophy)
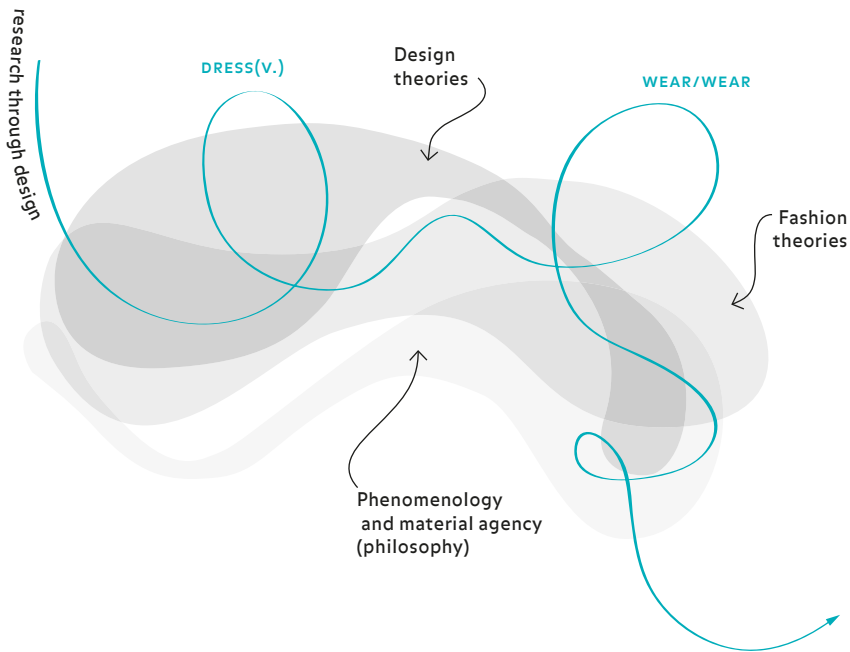
FIGURE 7
The research's theoretical foundations and how they were explored through time in the research process. In the image, the blue line presents the practice and the organic forms the literature that supported the work. A static, and simplified, version of this visualisation is found in Figure 9.

Research through (fashion) design practice

Research through design makes use of design practices to generate knowledge about a phenomenon or an artefact (Gaver 2012; Koskinen et al. 2011; Frayling 1993). Differing from traditional approaches to academic enquiries, research through design is engaged not only in understanding the world but also, and especially, in transforming it. Through this approach, researchers seek to effect change by 'making new things that disrupt, complicate or transform the current state of the world' (Zimmerman and Forlizzi 2014, 169).

Though much of the literature on research through design emerges from the human-computer interaction community, the term 'research through design' refers to design more broadly. It emerged from Frayling's (1993, 5) framework for research in arts and design in which he identifies three approaches: research *into*, *through* and *for* arts and design. Within research *through* arts and design Frayling (1993) indicates three possible frames: (1) materials research, (2) development work and (3) action research (for a more detailed account see Frayling 1993, 5). Against this initial effort, new frames to research through design have gained complexity and plurality (see e.g. Koskinen et al. 2011; Zimmerman and Forlizzi 2014). At present researchers invest in creating spaces of intersection between these different frames to better fit their scopes of inquiry as well as create new ones. Criticised by some as an impediment to a standardisation of the research approach (Zimmerman et al. 2010), this plurality of frameworks is precisely what interests this research. Gaver (2012, 942–943) suggests that researchers through design are brought together by common beliefs, rather than common frameworks. He points to the relevance of engaging participants, understanding making as a situated activity that can advance knowledge, and a concern with the future as central in most of the research projects in research through design.

Fashion, though frequently framed within the field of design more broadly, bestows us with particularities that must be accounted for. The intensity with which fashion is used to express one's values, the time we spend wearing clothes as well as how clothing provides shelter and protection are some of these particularities. In respect to that, fashion studies invite new articulations with theories specifically

suitable to investigate the field. Research through design, as a research approach that enables diverse viewpoints, allows fashion studies to account for these particularities by combining different frameworks. This doctoral research can be defined as a combination of philosophical and participatory design approaches, part of the many viewpoints that research through design can offer. Its closeness to a philosophical approach (Zimmerman and Forlizzi 2008) owes it to the fact that the research draws phenomenology and material agency theories to build the investigation. Moreover, a participatory design approach (Koskinen et al. 2011) can be identified, as the experience between wearers and worn is central to the work. In design research, participatory design refers almost exclusively to the participation of other people in the development of a design product. Here, the framing must be reconceptualised, as the 'participants' that inform the research are not only humans but also clothes.

This research project combines autoethnographic studies with adapted participatory design research methods (discussed further in this chapter). It holds as its objective to grow understanding *about* and *for* fashion design research and practice. On the one side, drawing from research approaches in artistic practices, the work investigates the process of making clothes from a practitioner viewpoint. On the other, it adapts consolidated design research methods to deepen understanding of how the clothing pieces produced are experienced in the real world. Under an overarching question set to explore spaces of interaction between wearer and worn, the research unfolds as an iterative process to understand the phenomena.

The results of the practice share understanding with how practice-led research (Candy and Edmonds 2018; Nimkulrat 2009; Candy 2006) and research through design (Zimmerman and Forlizzi 2008) understand the role of artefacts in academic inquiry. Both see artefacts not as the centre of the investigation but rather as a means to achieve its ends: to produce knowledge that serves both the practice and theories in their fields.

> Practice-led research […] does not depend upon the creation of an artefact but is nevertheless founded in practice. It can refer to a situation where a curator, seeking to understand how to develop better approaches to creating exhibitions, carries out studies into the nature of that practice and identifies the relative effectiveness of existing approaches from which new practice is developed. The outcomes may be shared in the form of principles, models, frameworks and guidelines. (Candy and Edmonds 2018, 65)

This specificity is understood as the main difference between practice-based and practice-led research. While practice-based research sees its main contribution in the artefacts that result from the research, practice-led research is more interested in producing "new understandings about practice" (Candy and Edmonds 2018, 64). Accordingly, the doctoral research is part of a wider process that brings inputs from previous experiences and extends its limits towards future unfoldings of concepts and proposals. For fashion research this extension of limits is particularly interesting because it supports designer-researchers to understand research projects not as finished works, but as part of a greater body of their practice. In this dissertation, the main question stems directly from my previous practices as an experimental fashion designer. It reflects on and is influenced by my previous works in fashion and visual arts. Figure 8 illustrates how the process takes place in this investigation.
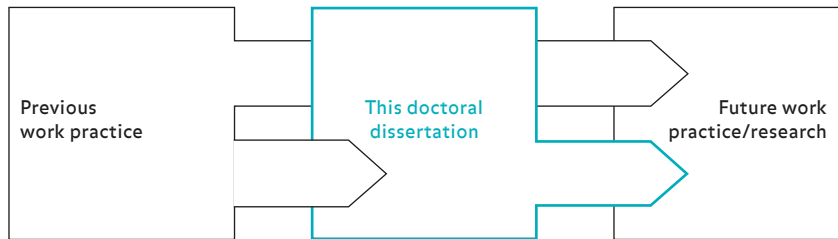
FIGURE 8
The practice and process as visualised in a long time frame (including past and future works). In the figure, past experiences in design affect the research work and are affected by it. As the practice continues in the future, learnings from the outcomes of the research will directly impact future works.

For its disciplinary framing, this doctoral dissertation understands fashion as intersecting with design research. Design and fashion deal with the creation and production of artefacts we deal with in our everyday lives, but with clear differences especially concerning their 'cultures' as professions (see Chun 2018; Hallnäs 2009). Despite holding particularities in both research and practice, the positioning between the fields of design and fashion offers this dissertation grounds to discuss methods for empirical studies. It relies on previous works in design research that look into designed objects as part of individuals' everyday lives as well as into articulations between design and philosophy (Figure 9).

The approaches used to enable the investigation are research through design and practice-led research. While practice-led research supports the ways this investigation looks into my own practice of making clothes, research through design underpins methods used to understand how the clothes created are affecting and being affected

by the experiences between wearer and worn. In this way, the making here is situated closer to artistic practices and the design output, the clothes, closer to design. Articulations between design and philosophy (see Lee 2012; Ávila 2012; Mazé 2007) serve as examples with a similar framework as this doctoral dissertation. In these cases, philosophical concepts are explored as a means to lead or connect a series of design experiments.

In my research, the combination between artistic processes and design outcomes entails a production not centred on commercial and industrial approaches, coinciding with many of the research through design projects (Zimmerman and Forlizzi 2008). The practice presented here is understood as an experimental perspective to design processes with artisanal manufacture (cf. Ávila 2012; Fraser 2014). The produced clothing pieces are understood as design outcomes, as they hold the function of dressing the public (Eicher 1981) as well as promoting reflection or fuelling emotions and attitudes through experimental forms.

DESIGN
research through design
experimental design research
practice-led research
cultural probes

FASHION
experimental fashion
fashion theory
wardrobe studies

PHILOSOPHY
phenomenology
material agency
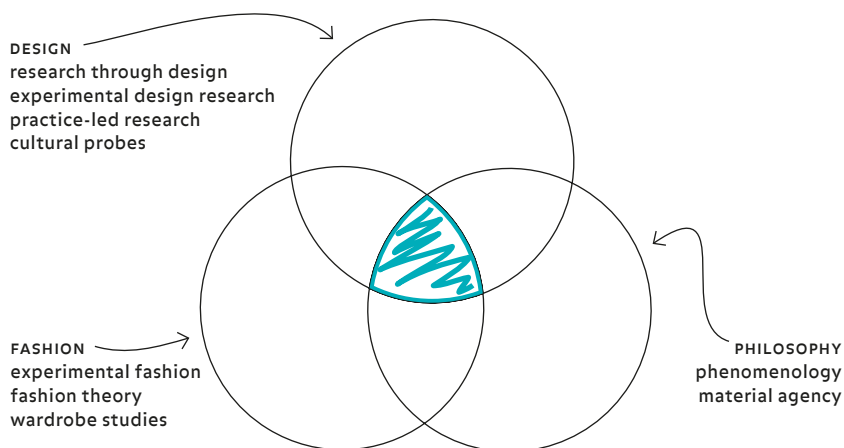
FIGURE 9
The theoretical framework: locating the research among three disciplines and their branches of knowledge.

Receiving support from the field of design grants this doctoral research with the possibility of taking advantage of methodologies to investigate the making of artefacts and how they are experienced by wearers. The philosophical background affords expanding how the roles of designed clothes are perceived beyond the superficial, in the context of everyday experiences. To look at clothes as not solely passive objects but as things that affect us allows this research to propose frameworks towards more meaningful experiences and interactions between wearers and clothes. Brassett and Marenko

(2015) discuss this possibility by advocating for the articulations between design and philosophy. They understand design as "optimally positioned to delineate, reflect and question the ways in which the relationships between human and non-human agencies elicit affects, tell stories and ultimately make us think by doing" (Brassett and Marenko 2015, 6). They point to particularities of design as a field of knowledge and practice, such as how it is integral to our everyday lives and its constant engagement with the future. Through the reflective action of designing, the authors suggest that designers develop, question and refine terms, resembling the production of philosophers. The way Brassett and Marenko (2015) put emphasis on the *process* of designing, instead of the outcomes, and how this allows for design-philosophy articulations, is of interest to practitioners and researchers alike. As suggested by Barrett (2007, 4), further reflections on the processes used by designers can help them access previously unexplored knowledge. This allows designer-researchers to broaden what is known about the practice and enlighten practitioners with ways to address specific problems more effectively.

How can fashion designers promote more active relationships between wearer and worn?

What aspects of clothes can lead to more reflexive wearer-worn relationships?

In which ways can time and surprise be explored as a space for design?

How can we make visible the agency of clothes?

Intervention 1

Intervention 2

Reassessments

DRESS(V.)

WEAR/WEAR

2015   2016   2017   2018
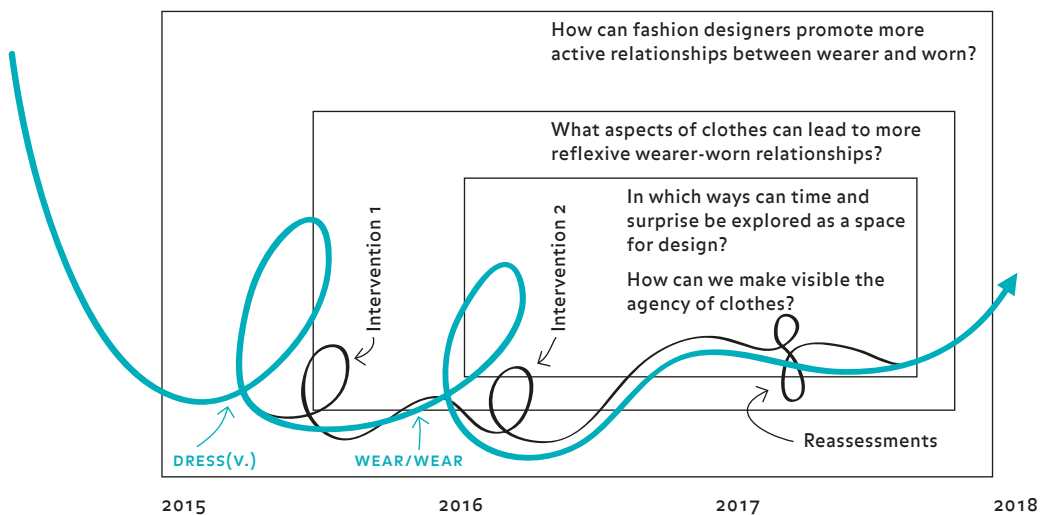
FIGURE 10
Dissertation overview. In the image, the blue line represents the practice and the black represents the empirical studies done with the produced artefacts. The timeline below indicates when each part of the research was developed. The boxes show the general theoretical framing by means of the research question.

Interested in discussing how wearers and clothes interact, this investigation seeks to broaden understanding on fashion design practice as well as explore the question of agency in wearer-worn interactions. The figure above illustrates how the specific framing of the dissertation defines it as an iterative-inductive research practice. While the broad qualities of the overarching research question bring

few assumptions to the early stages of the research, making it mostly inductive, the appearance of a framework in later stages defers its iterative essence. In line with the features of research influenced by practice, this is essentially a qualitative research. Figure 10 briefly introduces the structure of the investigation, outlining how the experiments in practice relate to the broad research question and to each other.

The main research strategy used in this project is ethnography. This choice enables the researcher to focus on the interactions between people (either the maker or the wearer) and clothes. Applied ethnography allows the researcher to explore the relationships between different actors within specific phenomena – in this case the relationship between makers, wearers and experimental clothes. Being centred on such relationships and practices, the research evolves through the shared subjective voices of the maker and a plurality of wearers. The research evolves through a series of studies, as interventions and interviews, which help in developing the concepts that emerge from the studies and build the final findings. This work does not focus on a cultural account of experiences, despite looking at the practices of making and wearing clothes in a situated manner (i.e. how individuals create, produce and interact with clothes within their contexts), but rather on how these interactions evolve through time. Here, different forms of ethnography are used as a method for producing and collecting data: autoethnography, interventions inspired by Cultural Probes and interviews. Each takes a different perspective, that of the designer, the wearer and the clothes, which permits the observed phenomena to be interpreted from different viewpoints. Through the different data sources, this research expects to embrace and explore some of the different roles and viewpoints that act in the complexity of wearer-worn relationships.

The next sections in this chapter are divided into three parts. They open up the methods used in this doctoral research and discuss the underlying logic behind its crafting. The first part opens up the relevance of investigating the practice from a subjective practitioner viewpoint. It presents how the making is investigated here and what role it plays in the general research project. In this first part, subsections discuss the designer's body as a situated body, introduce the methods used to collect data on the design practice and present how the data collected was interpreted. The second part draws attention to how fashion is constituted of interlacing experiences, calling for empirical studies. It discusses the particularities of investigating experiences with clothing and introduces the methods used to collect and interpret data via 'wardrobe interventions'.

The 'wardrobe interventions' are explained in detail and situated among different probing methods within design research. The third and last part of this chapter overviews the research methodology and makes concluding remarks.

4.3
Investigating design practice from a practitioner viewpoint

The first-person singular perspective is a delicate one. It is exposed and situated in place and time. Despite this bias, this grammatical person can provide accounts of the reality, or of *a* reality. In the case of this dissertation, it speaks of decision-making moments in the design process, but also of the subtleties of making clothes in a more general sense. To speak from a first-person singular perspective means sensing how one's understanding of and reactions to the world are constantly shifting, affected by a complex network of entities with which the subject interacts. This section converses on the methods chosen for investigating a clothing design practice from a practitioner viewpoint.

THE PRACTICING SELF

This research addresses two dimensions of clothes. The first discusses making as a space of experimentation where the designer can create and apply concepts to her production through a reflective practice. The second regards this production in use, experienced by wearers in their everyday endeavours. This section, 'The practicing self', will look into the first dimension of the investigation – the practice of making clothes observed from a practitioner point of view through self-documented studies. In it, I explain how the study on creative processes unfolds starting from the discussion that the body that designs is also a body that *wears* clothes.

A common approach to investigating one's own creative processes in practice-based research is through self-documentation, of which narratives, ethnographies and biographies of the self are some examples (Makelä 2006, 76). In these approaches, the designer takes a situated perspective in which their identities are considered and made visible throughout the work. To research from the perspective of the practitioner is, thus, to research from a culturally and politically inscribed body (Spry 2001). In that sense, the complexity of individuals'

selves promotes tangible and intangible manifestations of their culture in the research and practice. Under more recent academic discussions, these different methods for researching the self have often been referred to as autoethnographies. Autoethnography is a research approach used to gather data about a specific ethnological group by closely observing the researcher's self, as part of this group. Ellis et al. define it as "an approach to research and writing that seeks to describe and systematically analyse (graphy) personal experience (auto) in order to understand cultural experience (ethno). [...] A researcher uses tenets of autobiography and ethnography to do and write autoethnography" (2011, 273). The aim of understanding a specific culture or cultural identity is, thus, the foundation of autoethnographic studies. As a consequence, the approaches used in this research are referred to as inspired by autoethnography rather than strictly autoethnographies.

The design process in this dissertation is followed from the designer's point of view using methods that stem from autoethnography. Whilst the situatedness of the designing body is reckoned and considered in this doctoral research, a different aim is targeted. The interest in this work lies not in understanding the cultural identity of fashion designers, as traditional autoethnography does, but rather in supporting the investigation of a specific design practice, referred to here as experimental fashion. By closely looking into my own practice, I aim to understand if and how design intent is manifest in the outcomes of my practice. Ultimately, I seek to identify design approaches that can support more active engagements between wearer and worn. This focus of interest differs from autoethnographic studies in regard to the central objective of the study.

GENERATING DATA
THROUGH PRACTICE

In order to understand and define what approaches to use for collecting data on practice-activity, provisional experiments were necessary. Following the methods of designer researcher Owain Pedgley (2007) as a starting point, I used diaries, reports and visual records to collect data on my own design practice. The data collection methods and a general evaluation of their qualities are shown below. Key aspects were considered: (1) does the data collection method support the development of the project and add to the flow of work? (2) Does the method help in identifying issues and/or moments of decision making? (3) Are the records somehow helpful in investigating the process? (4) Am I aware of the device being used to collect data on the process? (5) Does the data collection method interrupt the creative process?

DATA COLLECTION TOOL/METHOD	CONTRIBUTIVE			DISRUPTIVE	
	SUPPORTS WORKFLOW	IDENTIFY ISSUES	HELPFUL RECORDS	DEVICE AWARENESS	INTERRUPT PROCESS
Project-specific diary: Sketches	x	x	x		
Project-specific diary: Detailed process		x	x	x	
General insights diary			x		
Images by camera previously set in the workspace			x	x	x
Spontaneous mobile pictures			x		
Voice recordings		x	x	x	x
Videos				x	x

TABLE 1
Comparison between different methods for collecting data in an autoethnography

As demonstrated in Table 1, some forms of recording design activity (i.e. photos, videos and audios) interfered with the design process. These data collection methods were discarded in the second experiment, as they came in the way of the design flow, breaking the fluidity of the action. Different types of diaries and pictures were finally selected based on the evaluation presented in Table 1 above. They aimed at capturing a natural design process without losing consistency in data gathering. The consistent data collection enables the material to be later analysed within an academic research setting, providing me with reliable results.

After testing these different approaches in the early stage in this research, I defined methods for collecting data, as presented below in Table 2, and followed throughout the two projects.

METHOD		DESCRIPTION OF DATA COLLECTED	FREQUENCY OF DATA COLLECTION
DIARIES	PROJECT-SPECIFIC	Sketches and detailed description of the design process. Includes time annotations.	Daily (while process lasts)
	GENERAL INSIGHTS	Notations on general ideas that emerge during the design process but not necessarily inherent to them.	Spontaneous (when insights arise)
IMAGES BY CAMERA PRE-SET IN WORKSPACE		High-resolution images from fixed camera in the workspace. Camera is clicked whenever the researcher finds relevant.	Punctual (during design process)
MOBILE PHONE PICTURES		Medium- and low-resolution images from the process, done frequently to keep record of, for example, how a piece evolves from the initial pattern to the final stage.	Spontaneous (during design process)

TABLE 2
Methods used for collecting data on own design activity

Despite following a similar system for collecting data, each project followed a particular design method. As the experiments had different beginnings, the methods for using the collected data in each of them differed. Details on how the data was interpreted and used will be given in Chapters 5 and 6.

4.4
Investigating clothing in context

> [...] fashion is as much process, practice and performance as garment. (Fletcher 2016, 114)

The previous section discussed ways to investigate the practice of making clothes, one of the two dimensions of clothes explored in this dissertation. To better understand whether the designer's reflections reach the wearers in the use phase, ways to investigate a second dimension – that of clothes as experienced in context – are explored. The planning for the core of this research stems from this section, which aims to answer the questions posited at the beginning of the investigation, and a few other questions that came along the way. It introduces and discusses the methods by which the experiences between wearer and worn were investigated.

THE CALL FOR EXPERIENCE
IN FASHION RESEARCH

Sanders and Stappers (2014) note that designer-researchers benefit from the use of research methods that intertwine making and experiencing of designed objects in their focus, facilitating fruitful spaces of investigation. The authors highlight making as a necessity for designers to engage in research. In addition, the experience of objects allows users to engage in two different roles: as design-research partners or as subjects of investigation. They discuss three different forms of engaging users in design research: probes, prototypes and toolkits. Through these methods, designer-researchers can include practice and empirical studies with users in their research, allowing pluralisation of viewpoints as well as a less hierarchical approach to design. This section will look into the reasonings behind the choices of methods for investigating clothes in their experience phase.

Fashion lies as much in the practices of making, using and performing as in the clothes themselves, as expressed by the opening quote in this section (Fletcher 2016; Negrin 2016; Loschek 2009; Entwistle 2000). Therefore, by focusing strictly on fashion as objects or produced images we cannot account for what fashion really is. Clothes only come into being once worn and experienced. Due to its interest in investigating the engagements between wearer and worn, this research highlights the need to understand the clothes produced from the perspective of experience, driving the theoretical framework towards a phenomenological approach. As perceived in the literature review, in order to investigate the interaction between people and the clothes they wear, it is important that a method can meet specific needs to guarantee quality in data collection on wearing experiences. Wearing practices are essentially private experiences, as people change clothes within private spaces. They develop through time and are situated in specific contexts, which means that different individuals will relate differently to the same garment. In respect to that, it is necessary that the research method provides:

— Accessibility to the participant's private experiences and daily routine, including moments of getting dressed, choosing clothes and maintenance practices
— Longitudinal data collection over an extended time frame, accounting for the development of wearer-worn relationships
— Respect personal time and pace in developing relationships with clothes through methods in which the researcher is not present

In seeking for a suitable method to investigate wearer-worn relationships some general research methods were evaluated in regard to the abovementioned needs (see Table 3). They demand an alternative means of data collection that could account for characteristics specific to both autobiographic data production by non-researchers and ethnographic studies.

METHOD / NEEDS	ACCESS TO PRIVACY	NATURAL SURROUNDINGS	CONSIDERS PACE/TIME	LONGITUDINAL STUDY	LONG TIMEFRAME	METHOD ASSURANCE
ETHNOGRAPHY		x	x		x	x
AUTOETHNOGRAPHY	x	x	x	x	x	
INTERVIEWS			x		x	x
SURVEYS	x					x
ARCHIVES STUDY						x
NARRATIVES / AUTOBIOGRAPHIES	x		x			
UX METHODS			x		x	x

TABLE 3
Overview of data collection approaches and
their applicability to this research.

The table above shows that approaches in ethnography would be most suitable for covering the scope needed for this research in regard to collecting participants' data. On the one hand, it was necessary to craft or borrow a method that could combine aspects of applied ethnography and autoethnography, while assuring consistent data collection. On the other, it is expected that the data collected can inform the research question and frameworks for clothing design. Below are the aspects that directly relate to the research questions and expected nature of the information retrieved from the studies:

—   Spontaneous, active and real-life accounts of experiences
—   Reflective reports on the experience (facilitate and expand
     dialogue between designer and wearer)
—   Everyday wearing routines (allow access to moments
     of users' private lives)
—   Inspire design solutions or questions (bring real-life insights
     to the production, better understand how people interact with
     experimental clothes, have ready designs tested in the real
     world and not in the lab)

The particularities identified above that interest this research suggested Cultural Probes as one suitable method to investigate how individuals interact with clothes. Cultural Probes emerged as a research method drawing from psychology and participatory art

(Gaver et al. 1999). Speaking from the field of design, Gaver et al. had the interest in developing methods for establishing dialogues between designers and user as their starting point. They highlight the need to give designers and users equal voice in their dialogues, resulting in a more horizontal relationship. With the use of the Cultural Probes, external thoughts could be considered during the creative process of a new product, adding to the designer's decisions. Generally, Cultural Probes do not have a predefined focus on design outcomes. Instead, they encourage participants to engage in discussions about future possibilities via thought provocations and disruptions (Hemmings et al. 2002; Gaver et al. 1999). The first Cultural Probes consisted of creative tools to incite participants to provide creative feedback to researchers by engaging with artefacts often through disruptions to participants' lives. It was expected that unanticipated directions for future scenarios could arise from the participant's responses to the disruptions (Gaver et al. 2004; Hemmings et al. 2002; Gaver et al. 1999). New adaptations of the probes arose to fulfil a growing need for deeper involvement of (human) participants in the design process (Herd 2012, 125), resulting in their rapid spread in the design research environment. From the original Cultural Probes, a series of adaptations emerged (see Graham et al. 2007). Despite being implemented in different spheres of design, its adaptations within fashion remain, for the most part, limited to wardrobe studies (Rigby 2017; Skjold 2014).

PROBES IN FASHION RESEARCH

Looking at the experience of wearing clothes is essential to understanding fashion design in a more holistic sense, expanding beyond the usual visual and cultural accounts. For that reason, taking advantage of probes as a method for inquiry seems natural to the field of fashion. In spite of that, few studies have explored how probes could be applied to research in fashion. The work of Lundgaard and Larsen (2007) is seminal in applying Cultural Probes to fashion design practice, but lacked evaluation of what the method can offer to fashion research. More recently, the applicability of such a method to fashion inquiries has been put to the test, motivated by the appearance of subfields of study such as wardrobe studies (Klepp and Bjerck 2014) – which has received contributions that make use of probing as a method.

Wardrobe studies address how wardrobe practices have been shadowed for decades within fashion studies. Sociologist Saulo Cwerner (2001) points out: "There is a noticeable and significant gap in the vast literature on fashion and clothing across the social sciences

and the humanities. […] It is almost invariably taken for granted that clothes are being worn: they are viewed as existing outside, in the open, and in movement" (Cwerner 2001, 79–92). Despite focusing on clothes 'at rest', the author draws attention to what happens in and around wearers' wardrobes. More recently, with the conceptualisation of the term 'wardrobe studies', Ingun Klepp and Mari Bjerck (2014) have propelled growth within this scope. Other contributions try to close the significant gap of dress practices in fashion literature (Rigby 2017; Skjold 2014; Fraser 2014) and use probes to investigate garments in use.

Fashion researcher Else Skjold (2014) looks into men's dressing practices in relation to the Danish fashion brand Mads Nøregaard, using design probes as a data collecting method. The method allows self-documentation in everyday practices taking place in private spaces. The probe was applied to two different studies covering one week (first study) and five months (second study) with probing toolkits described as mobile probes (Hulkko et al. 2004). The kits included clothing items, a notebook and guidelines for visual reporting through self-portraiture using a mobile phone. As a conclusion, Skjold (2014) proposes probing as a means to intensify the dialogue (and understanding) between production and consumption of clothing items. She notes the increase in participants' awareness of the topic in question and how the probes can support discussions and interviews. The probes, thus, work as a basis for argumentation and discussions for the participants, helping them articulate thoughts and deliver trustworthy data. Despite being applied to commercial production, in contrast with the experimental production proposed in this project, the probes in Skjold's work suggest how pictures and note-taking on wearing practices can produce resourceful data. The author addresses the richness of everyday practices and argues that by better understanding what is at play when we dress, we can more successfully address issues that arise in both research and practice.

In another contribution to the field of wardrobe studies, Rigby (2017) investigates laundering practices. The 'laundry probes' seek to ascertain whether specific design features in garments can impact laundering routines (Rigby 2017). In the research, probing kits are deployed to individuals for a year. As a closure to the study, available research participants took part in a semi-structured discussion. Rigby (2017) concludes that specific materials (e.g. wool) and shapes (e.g. loose) support a greater interval between laundering, allowing longer clothing lifespan. These works (Rigby 2017; Skjold 2014) attest to the validity of the method for investigating individuals' 'wearing' practices and make cases from which researchers can draw

implementation ideas. They provide resources that can be applied to the context of clothing production with prolonged use-phases in mind[25].

In Fraser's work (2014a; 2014b), a series of experiments engaged participants in generating new ideas for clothing design (see Figure 11 below). The projects have spanned from one week (the first project) to a year (third project). The interweaving of technology and clothing as well as the highly experimental tone of the work situates it closer to speculative and critical design approaches, and farther from the everyday, the frequent object of investigation in wardrobe studies. What is particularly potent in her deployments, and relevant to the wardrobe interventions method, is the discussion of the different roles that clothes can take and how this can be assessed and discovered through the use of probes.

FIGURE 11
One example from Fraser's project 'Clothing as Conversation'. The image shows the piece hung, showing its general form, and in one possible form of being worn. (http://ecuaa.ca/clothing-as-conversation/)

Though differing in foci and intentions, the aforementioned projects form a foundation of investigations on clothing and fashion through probing. They discuss how a more participatory approach to designing garments can be achieved through the use of probes. At present, more researchers are involved in deploying garments to individuals in research projects, though not always referring to them as cultural or design probes. For instance, designer-researcher Louise Ravnløkke

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Parts of this paragraph and the next were previously presented in Valle-Noronha and Wilde (2018).

Petersen (2019) adds to the discussion and adaptation of the method to research in fashion and clothing. She developed a participatory approach to knitwear design and evaluated users' relationships to clothes via deployments and interviews. Together, these works help consolidate the understanding of the relationships between wearer and worn as a social and culturally inscribed practice and as personal and material experiences. The clothes produced within this research serve as probing tools to understand these relationships. Furthermore, they are used to retrieve inspirational concepts that will later inform a design framework for more interactive clothes. These clothes as probing tools were deployed to individuals via wardrobe interventions. This method, adapted from the Cultural Probes, will be described in the next section.

4.5

Wardrobe interventions

> To describe any material is to pose a riddle, whose answer can be discovered only through observation and engagement with what is there. The riddle gives the material a voice and allows it to tell its own story: it is up to us, then to listen, and from the clues it offers, to discover what is speaking. (Ingold 2013, 31)

A wardrobe is a material and immaterial space holding stories that often cross paths, both within and beyond its limits. When a new piece is brought (or allowed) inside the wardrobe, it enables new stories to collide. In order to understand what a designed piece might mean, or what it might afford, within the context of the everyday it is utterly necessary that we relate to it – not in artificially created environments or through assisted interactions, but necessarily via everyday engagements and relationship building (Schorr 2001). Ingold's quote above illustrates the need to being open to and aware of the offerings of materials, such as clothes, to be able to understand the potentials – either positive or negative – that experimental clothes can hold. Catering for those needs and interested in exploring these potentials, this doctoral research builds on previous works in probing artefacts and garments to develop wardrobe interventions. The wardrobe interventions are deployed as a method to harvest information on how individuals and clothes relate. This subsection will discuss the influence of probes in this doctoral research work as well as the specificities of the wardrobe interventions.

Interested in investigating aspects in clothes and the experience of wearing that can foster stronger and more reflective relationships between wearer and worn, this research made use of wardrobe interventions. The use of the term 'wardrobe interventions' to this adaptation of Cultural Probes highlights the different specificities that research in fashion must adhere to. Some of those are the time taken to develop relationships with clothes, the roles new garments take when entering a wardrobe and the matters of privacy of wearing practices as a subject of investigation. 'Wardrobe interventions' as a term aims at exposing these specificities while drawing connections to the interventionist role of Cultural Probes. In the projects Dress(v.) and Wear\Wear the wardrobe interventions work as slightly disruptive artefacts offering material for reflection, similar to Cultural Probes (Graham et al. 2007). Stemming from both cultural and design probes, the aspects that precisely inspire the wardrobe interventions in this research are:

— Disruptive aspects of deployments sparking unexpected action in both users and researchers (Graham et al. 2007; Gaver et al. 2001)
— Access to everyday moments of participants through self-documentation, mediated by the probes tool kits (Skjold 2014; Wallace et al. 2013)
— Promotion of reflective spaces to feed discussions through reflective tasks (Graham et al. 2007; Sanders and Stappers 2014)
— Participatory construction of the interpretation of probes diaries involving participants (Mattelmäki 2006) through group discussions and reassessment interviews

Even though clothes are part of the wardrobe intervention kits, the pieces proposed are understood as open to changes and adaptations through interaction with the wearers, and as such are not entirely 'finished'. The final outcomes of the iterative probing garments aim at speaking to designer-researchers about ways of designing objects that: (1) Disrupt our understanding of the roles designed objects play in our lives and experiences, (2) serve as a motivator to reflect on our wearing practices, expanding from the relationship between wearer and worn towards a more general account of dressing, and (3) discuss fashion experience grounded on understandings of experiences with designed objects. This study opens up discussions on how individuals engage with a given designed clothing. It looks into how this piece affects its wearer in the context of the wardrobe. Added to that, it suggests forms of utilising disruptive probes in fashion research through wardrobe interventions. A detailed account of how the wardrobe interventions were built will be presented next in this chapter.

Wardrobe interventions extend efforts such as those of Fraser (2014), Skjold (2014) and Rigby (2016) by including experimental clothing from a shared viewpoint that includes the designer, wearer and clothes. In particular, they call participants to discover the clothes' 'voices' through, as Ingold (2013) suggests, observation and engagement with them to uncover their riddles. The method assists researchers and wearers in understanding what clothing may afford via a subtle disruption initiated by intervention kits. The sections below open up the method, starting with a description of the kits, a brief summary on their deployment, the sampling of participants and approach to data interpretation.

DESCRIBING THE METHOD

Mattelmäki (2006, 50) notes that designing a quality intervention kit can be an effective method to draw interest and care from participants. Complying with this finding by Mattelmäki, great effort was put into the design of the kit. This was expected to ensure that participants would feel more compelled to engage with the clothes and diaries given, and would be more likely to finish the task. The wardrobe intervention kits for the two projects in this research consisted of:

A garment (shirt, blouse or dress)
A 'bespoke' intervention, that is, a piece made-to-measure built under creative pattern cutting processes with some specifications suggested by the participants (e.g. length, material or garment type). The piece was central in the intervention kit and was designed to be engaged with as the participant and her wardrobe usually would with other pieces previously owned.

Diary
A 72-page diary containing project-specific background information, detailed instructions, contact information and seven sets of questions followed by blank pages organised as 'chapters', one for each wearing experience reported. The diaries, printed through an on-demand service, served as guidelines and space for reflection for the participants. A series of simple questions (see Appendix 8) about each wearing experience aimed at making the participant focus on the overall setting of the experience to facilitate recollection of memories. Following the questions, blank pages invited the participants to share their experiences with texts, images, drawings or anything else that they felt comfortable with. Documentations made through other media (voice recording, photos, etc.) could be collected, and sent to the researcher via email.

Reusable cotton bag
A cotton bag containing all the material that could be used in the future as a canvas bag.

Informative leaflet on the project
Brief information on the creative process behind the projects, introduction to the design method and how they informed the final objects. The leaflet, apart from informing the wearer on what happens in the background of the design process, invited them to engage with the pieces in a reflexive way. The texts on the leaflets were written in a way that the research questions were not presented or evidenced.

Participant consent form
The consent forms aimed at protecting both researcher and participants in the study. It informed the participants of all the steps in the study, how the information provided was going to be used, what was expected of them, the compensations and their rights to withdraw from the study at any point during its course (see Appendix 6). The consent form was developed together with Aalto University's legal counsellor, and followed the responsible conduct of research, legislation and guidelines by the Finnish Advisory Board on Research Integrity (TENK 2012).

Researcher's personal card with contacts
Being available through different forms of contact was important to guarantee that any questions or problems that arose could be quickly answered and solved.

The description that follows details the final iterated proposal for the wardrobe interventions as a research method. Chapters 5 and 6 will open up how the method was initially deployed, adapted and the reasons behind each alteration.

Once the clothes were produced, each piece was deployed as described in Figure 12. The interventions unfolded over four stages: (1) Intervention deployment; (2) Interaction phase; (3) Group discussion; and (4) Reassessment interview. Appointments for delivering the pieces, group discussion and reassessment interviews were all booked via the Doodle online platform for easy management. Each of these stages is briefly described in Table 4.

You have just received your wardrobe intervention kit!

It contains:
. a bag
. a garment made to your measures
. a diary
. an informative leaflet
. participation agreement
. researcher's contact information

① In our first meeting you will receive your kit and we will briefly talk about your participation.

You will try the piece and any necessary adjustments will be made.

② During three months you will wear the piece like you wear any other garment in your wardrobe. To each time you use it, you should record your experiences on the diary provided.

③ At the end of the three months, you will return the completed diary. This will be done on the same day as a group discussion with other participants in the research project. We will talk about your experiences of wearing this garment.

④ One year after the group discussion we will meet again in a reassessment interview. I will visit you at home and on this date, we will talk about how the piece integrated your wardrobe in a general sense.

All the data collected here will be analysed and the results will be part of an academic research.

Any doubts or questions can be clarified using the contacts below:

julia.valle@aalto.fi
+358 040 545 5050

FIGURE 12
Illustration of the steps in the probing process as it took place in its final iteration.

STAGE	DURATION	LOCATION	DESCRIPTION
1. Intervention deployment	40 min	Designer-researcher workspace	The wardrobe intervention kits (bag, garment, diary, consent form, informative leaflet) are deployed to participants in an audio-recorded meeting. Participants try the pieces and necessary adjustments are made.
2. Interaction phase	1–3 months	With participants	Participants wear the piece about six times within the period. They record their experiences in a diary in text or visual forms.
3. Group discussion	120 min	Varies	All available participants gather for a mediated discussion. They share their experiences and the mediator raises keywords.
4. Reassessment interview	60 min	In participant's home (wardrobes)	Designer-researcher visits participants in their home one year after the deployment of the wardrobe intervention kits. In a semi-structured interview, participants explain how the relationship unfolded.

TABLE 4
Summary of steps in Wardrobe Intervention

As differences existed between the two interventions, more detailed descriptions of the stages will be provided in each of the experiment chapters. Table 5 below summarises these differences.

The reasonings behind how each project was deployed will be further discussed in the experiments presented in Chapters 5 and 6.

	DRESS(V.)	WEAR\WEAR	PHASE	JUSTIFICATION FOR CHANGES
LOCATION	BH	BH + HEL	n/a	Interested in perceiving possible cultural differences, the study took place in the two cities, located around 11,000 km away from each other.
NUMBER OF PARTICIPANTS	10	22	n/a	Each study group had the same average number of participants; thus in the second project (which was held in two cities, with two groups) the total number was higher.
FIRST ENCOUNTER VISUAL RECORD	yes	no	1	In the first study it was decided that less focus would be given to visuals from the researcher's side, aiming at not driving the participants towards visual priorities.
DIARY KEEPING TIME	1 month	3 months	2	It was concluded that the one-month time frame was too short to observe how the relationship developed.
GROUP DISCUSSION MEDIATOR	researcher	external mediator	3	The fact that the researcher was the mediator in the first study was later re-evaluated. Not having the image of the designer-researcher in the discussion was understood as a positive change. In the second project, an external mediator was invited to mediate the discussion.
RE-ASSESSMENT	2 years after	1 year after	4	The notion of 'intervention' was consolidated only after the second study. To understand, then, how the interventions acted in a longer time frame became necessary.

TABLE 5
The table shows a comparison between the deployments in the two projects concerning the number of participants, as well as the means and nature of the data collected[26].

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This table was previously presented in Valle-Noronha and Wilde (2018).

SAMPLING

The general participants of interest in the study are those with openness to wearing experimental clothes, along with the availability and willingness to take part in a longitudinal study. This flexibility in the sampling reflects the research questions, which are interested not in how specific individuals relate to experimental clothing, but rather in understanding, exploring and discussing its potentials in a more general sense. It was necessary that participants commit to wearing the piece, so being open to consistently engage with experimental fashion was essential[27]. On top of these primary needs, it was set that all participants were women, a sampling choice that reflects my experience exclusively in womenswear. This could ensure the quality of the objects designed/produced and better reflect design intents.

The sampling was defined for each project based on previously outlined research interests and/or on conclusions drawn from the first study. In order to define the number of participants for each experiment, three aspects were taken into consideration: (1) the number of participants in previous studies including probing designed objects (Ahde-Deal 2013; Mattelmäki 2006; Gaver et al. 2004), (2) the possibility of participants failing to complete the tasks due to duration and overall commitment needed and (3) the number of clothes that could be produced within the pre-scheduled time frame. It can be stated that the overall sampling resembles the clientele of experimental fashion brands in regard to age and professional background, based on my previous experiences. I relate this to the fact that all participants were somehow linked to my personal or professional circles, due to the nature of the calls for participants made, a sampling aspect further discussed in Chapter 9, under the limitations of the research. The length of the study and the level of commitment needed played a part in restraining interested participants to a small number. On the other hand, the compensation given, a made-to-measure garment, drew the interest of those willing to take part in the study.

All participants were requested to fill in forms with personal information, built using the Google Forms platform, which allowed easy maintenance and access to the information stored in the cloud. They were asked to sign a consent form (Appendix 6), allowing the researcher to use the information generated by their participation

27
The exceptions – or failures in having participants engage with the pieces – were, of course, welcome and included in the study. See, e.g., section 6.7, Chapter 6.

and stating the terms of the study. The first experiment deployed kits to a total of ten participants in Belo Horizonte[28] and the second to twenty-two participants in Belo Horizonte and Helsinki[29]. The choice of the cities is justified by the ease of access and feasibility of developing the experiments. Having grown up and spent most of my professional life in Belo Horizonte, my network in the city is large and well consolidated. Added to that, the atelier space was readily equipped to receive the production of the pieces, another factor that weighed in the choice. Helsinki, on the other hand, is home to my doctoral studies, where I have access to sewing studios at Aalto University and connection to individuals inside and outside academia. More information about the sampling will be found in Chapters 5 and 6 and its limitations are discussed in the concluding Chapter 9.

PRODUCING AND INTERPRETING DATA

The information gathered throughout the wardrobe interventions is understood as generated and not collected data, in acknowledgement of the impacts that the interventions have on users' lives. When deployed, the clothes effected changes in individual's wardrobes as well as in their everyday experiences – greatly affecting their relationships with clothes. With the deployment of the wardrobe intervention kits, participants were invited to produce data on their relationships with clothes, based on the piece given. For that reason, the data here is understood as produced and not collected. The following images (Figure 13) portray the nature of the collected data via diaries.

Table 6 describes the data set produced and presents the interpretative approach used in each case. These approaches are further discussed in the following subsection.

28
Belo Horizonte is my hometown and the home to my atelier from 2007 until 2017. It is located in central-south Brazil, in a mountainous state called Minas Gerais, very known for its cuisine and gold mines. It was the centre for the exploitation known as the 'Brazilian Gold Rush', which gives the state its name. Belo Horizonte was the fashion capital of Brazil during the 80s and early 90s, a phenomenon that left traces on how the city deals with clothing and fashion today.

29
Helsinki, the capital of Finland, home of the School of Arts, Design and Architecture of Aalto University, became my home at the end of 2014 when I moved to start my doctoral studies. The city boasts a new and emerging fashion scene and plays a relevant role in the history of north-western design.
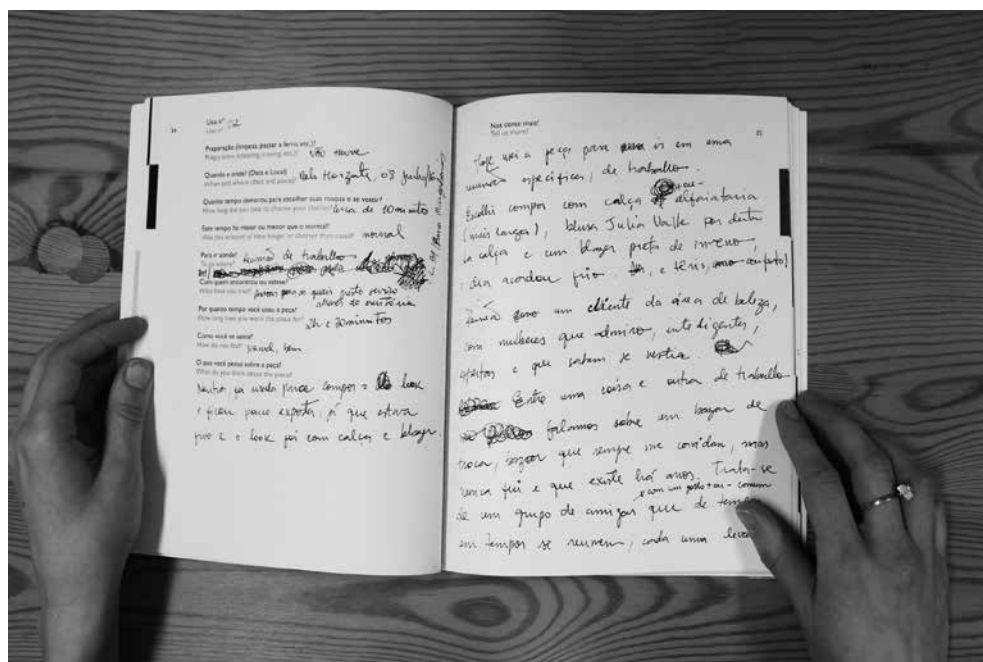
FIGURE 13
Spreads from participants diaries illustrating the variety of
content, which included pictures, drawings and written text.

DATA SET	DESCRIPTION	INTERPRETATIVE APPROACH
Diary (wearers' diaries)	Diary kept by participants of the study that received clothes as *wardrobe interventions*. The diaries were scanned and coded by hand. The contents included handwritten texts, drawings and pictures.	1 open coding 2 thematic coding
Dialogue (probes hand-out)	Meetings in which the wardrobe interventions pieces were handed out to each participant. They were all audio recorded and transcribed (to assure that the same information was given to all participants).	No interpretative approach. Used as reference only in regard to information given.
Group Discussion	Group discussion between participants led by a mediator. The three group discussions were audio recorded and some pictures were taken by the mediator. Each discussion lasted for about two hours. No video was taken to allow all participants to feel more comfortable during the discussions. The discussions were transcribed and coded using Atlas.ti software.	1 open coding 2 thematic coding
Reassessment Interviews	Reassessment interviews with some participants, totalling eight interviews and four digital questionnaires. Interviews were audio recorded. Transcribed audio and digital forms were coded using Atlas.ti software.	1 thematic coding

TABLE 6
Description of the data set in the study[30]

Table 6 provides an overview of how the data interpretation unfolded across the two cases. Interpretation was a four-step process. First, each case was investigated individually. Next, a comparative interpretation was completed. This approach resulted in previous findings (diaries and group discussion) being questioned and discussed in the context of later findings (reassessment interviews). A more granular view of the methods for interpreting data will be given in the project-specific Chapters 5 and 6.

Data Interpretation
The interpretation of the data was done in four stages (Figure 16), adapting a phenomenology approach to data as defined by Creswell (2007, 156–157). In this adaptation, a first open coding is done more generally, and a second coding applies themes that emerged from the first interpretation phase as well as other themes that are at the core interest of the investigation, such as the notions of agency and affect – that surfaced with the data interpretation. In this way, the first interpretation phase takes advantage of open and thematic coding. The final interpretation compares the findings from each phase to draw final conclusions. Each phase in the interpretation is described below:

30
A preliminary version of this table and its description were presented in Valle-Noronha and Wilde (2018).

(1) The diaries and group discussion are first read through a few times in hard copies, and notes are taken by hand in a first attempt to openly code the different themes that arose from the experiences and discussion. These first codes are grouped into 'themes', which become visible both from the data itself as well as from the topics that particularly interest this research. These 'themes' – and the quotes that illustrate them – are used in a second stage of data interpretation.

(2) Selected quotes from the diaries that illustrate the themes are transcribed and, together with the integral transcripts of the group discussions, are imported into Atlas.ti software. A second thematic coding is done, now with the support of the software, applying the themes mentioned above, and the final coding is achieved (Figure 14). Picturing data as networks (created with the support of the software) contributes to the visualisation of connections between the different codes (Figure 15).

FIGURE 14
Illustration of the digital coding process. In the figure, the transcribed group discussion for Dress(v.) is coded and relations between the different codes are identified.
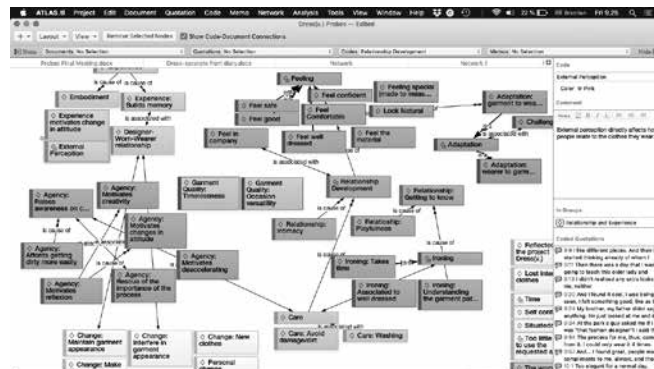
FIGURE 15
The initial visualisation of the codes as a network.

The interpretation of the first project, Dress(v.), informs the development of the second project, Wear\Wear. After the completion of the diary-assisted phase and group discussion for the second project, the above steps are repeated for the new generated data. The results serve as guidelines for a reassessment interview, which aims at clarifying previous findings now from a different perspective – with the clothes being worn without the diary keeping and now fully integrated into (or excluded from) the participants' wardrobes.

(3) The reassessment interviews are read through a sequence of times and, despite being open to new emerging themes, now rely more strongly on a thematic coding. Possible diverging directions perceived in relation to previous findings are highlighted.

(4) A final stage of interpretation compares all the findings to produce a composite account of the experiences, taking into consideration how they evolve in time. Through a complex data interpretation, in which a series of findings clusters are achieved, the final results present the essence of the experiences, not quantifying or creating patterns from the data, but understanding how they converse with each other.
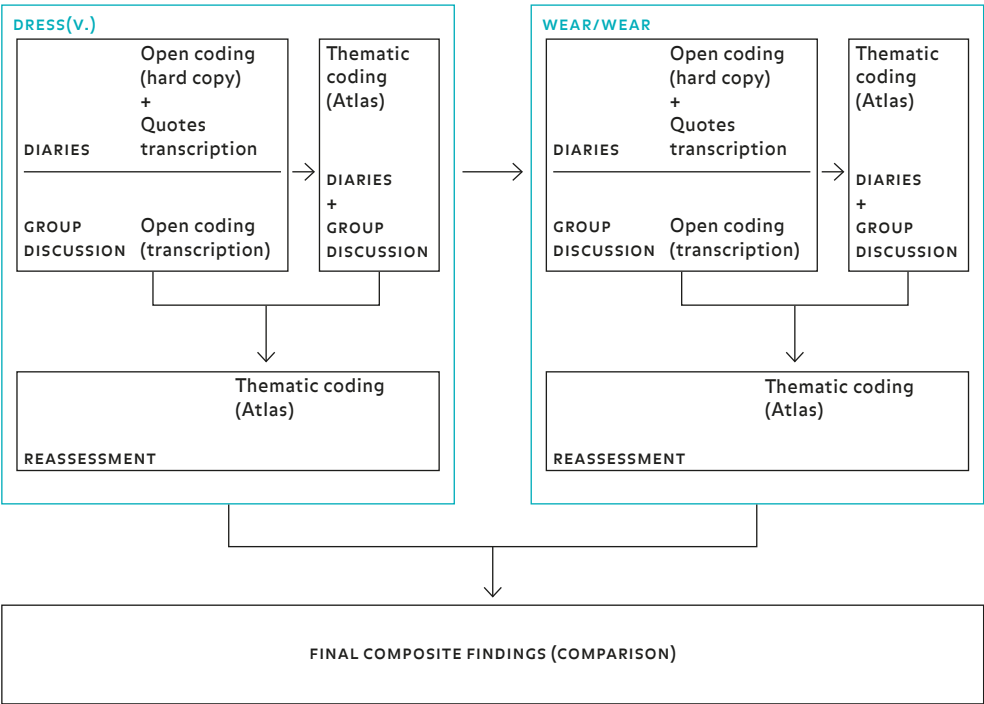
FIGURE 16
The diagram presents how the data in the projects were interpreted and how the projects informed each other to generate the final findings.

4.6
Conclusion

This research through design into experimental clothes is composed of two main parts: the practice of making clothes and the wardrobe interventions. The first part holds the task of following design approaches and intentions, which can be verified and discussed with the completion of the second part. Through the practice, questions arise and serve as input to the research. The wardrobe interventions are central to the research as they seek to answer the questions that arise throughout the study. Though these two parts can be described independently, they operate interdependently. The practice of making clothes informs the interventions as much as it is informed by them, in an iterative approach to clothes making which includes wearers' experiences as input to designing for more active relationships. Researcher in arts and science Linda Candy (2011, 45) compares this process with other practice-based approaches in which no empirical study is done. She suggests that in the latter the process ends with a reflection. On the other hand, when empirical investigation is added, the process of creation and reflection extends beyond the frame of the research with suggestions for future creative and investigative endeavours. Here, the investigative part acknowledges that the pieces created through the design practice are entities that exist in an externalised reality. It calls for different reflections, expanding beyond the self-reflecting practitioner. The response to this call is a research framework based on practice but informed by the empirical nature of the experiments. This framework implies that very little is known at the beginning, with questions being generated, problematised and even discarded throughout the process. This open-endedness of the process can be perceived in the conference papers and journal articles published throughout the doctoral studies (see List of Activities in Appendix 16). The publications deliver how a dynamic process of fine-tuning concepts took place, as the theoretical background was revised.

This chapter has covered the methodology behind this dissertation, exposing methods for observing the practice and investigating wearer-worn experiences. It is expected that research through design will enable collecting insights to inform how design research can be used in fashion research and practice. Its open-endedness, especially with regard to how the questions evolve with the research, welcomes experimental approaches and puts them to the test. The methodology proposes expanding the usual approach in practice-

led research (that focuses exclusively on the practice) to integrally encompass the production as experienced through the use of deployments, here referred to as wardrobe interventions.

This empirical expansion, though it adds breadth to the investigation, demands delimitation of scope, which is done here via participant sampling and the focusing of the research questions through an interlacing of practice and theoretical background. Despite the creative practice being responsible for producing the clothes investigated in the studies, the investigation focuses on their lives outside the practice. Through this, the practice serves as a connecting thread that travels across the entire research, enabling the reflections and support theory to be expressed through matter. That said, even though this approach is rather uncommon in fashion research, it has strongly benefited from previous knowledge, especially from the field of design (e.g. Halse and Boffi 2016; Ávila 2012; Mazé and Redström 2009). Such previous efforts have helped with building a method suitable to investigate the interaction between wearers and worn.

The following two chapters will explore the experiments Dress(v.) and Wear\Wear, which sit at the core of this research. In a linear account of the process, they each start with the motivations driving the projects, followed by the design process, a description of outcomes and how they were deployed via wardrobe interventions. Findings from each investigation precede a conclusion to the chapters.

5

Experiment 1: Dress(v.)

THE IMAGE OF ONE'S GETTING-DRESSED ACTIVITY is not quite what fashion and lifestyle magazines, collection catalogues or ethnographic studies usually portray. The intimacy of the action keeps it away from the public's eyes and often from academic discussion as well (Cwerner 2001). While considering the paths this research could take, this intimate and unexplored space of dressing practices is taken as a point of departure. As the scope of interest revolves around experience and relationships, this first project aims at suggesting that clothes be investigated as a verb rather than as a noun. Or in other words, as an action, a practice, an activity that fluidly evolves with time, an interest depicted in the naming of the experiment. This means that looking at clothes as a stable, fixed object, investigated in disconnection from other things and beings, is not of interest. Dress(v.) sets out with a reflective practice on dressing from a subjective viewpoint.

This chapter explores the project and its application with a view to seeking an empirical understanding on how wearers and experimental clothes relate. The first part is a broadly descriptive account of the project development from its preparatory stages to a full illustration of its outcomes. The second part focuses on interpreting the data collected from the wardrobe interventions in the search for design opportunities to enhance interactions between wearer and worn. Directions for an iteration of the research method conclude this chapter[31].

31
Parts of this chapter (including texts and images) have been previously published in Valle-Noronha and Wilde (2018), Valle-Noronha (2017b), Valle-Noronha (2016a) and Valle-Noronha (2016b).

FIGURE 17
Illustration of the autoethnography in Dress(v.)

FIGURE 18
Visual autoethnography.
Putting on a black and white polka-dotted woollen sweater.
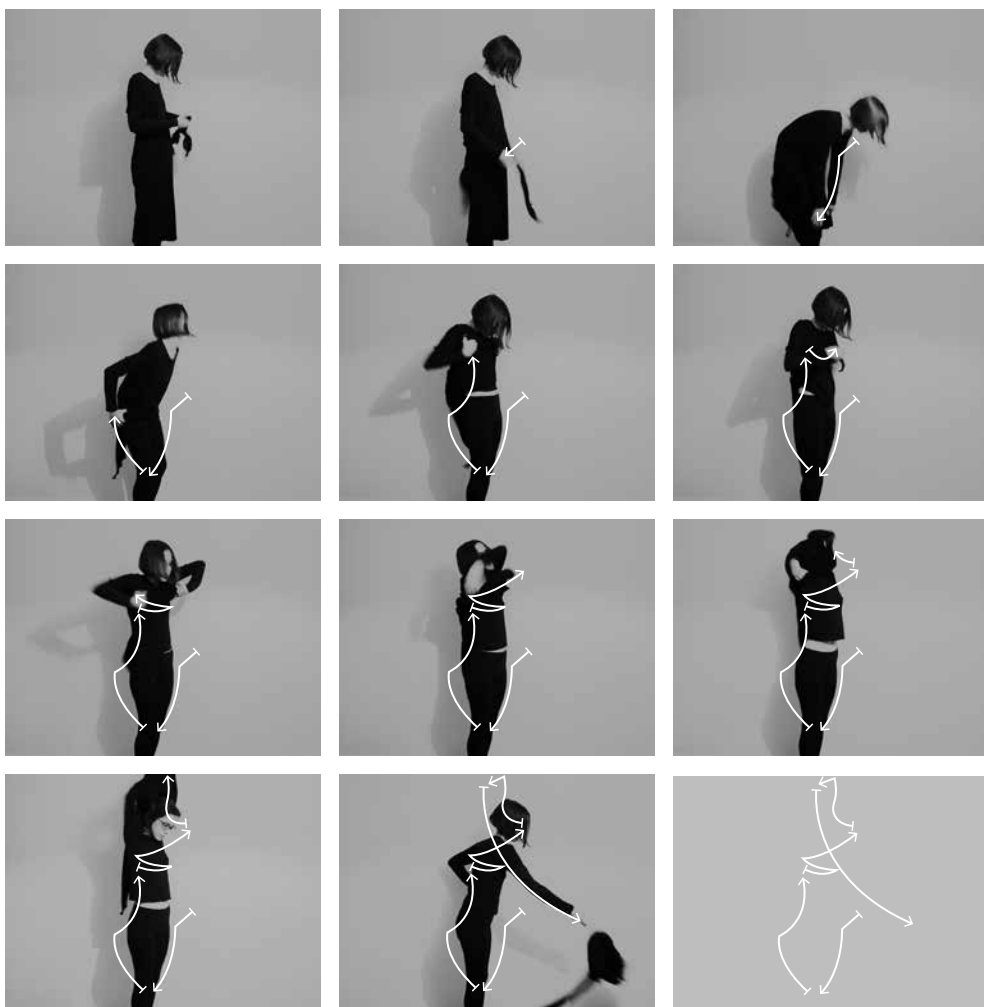
FIGURE 19
Visual autoethnography.
Taking off the layered black knit dress.
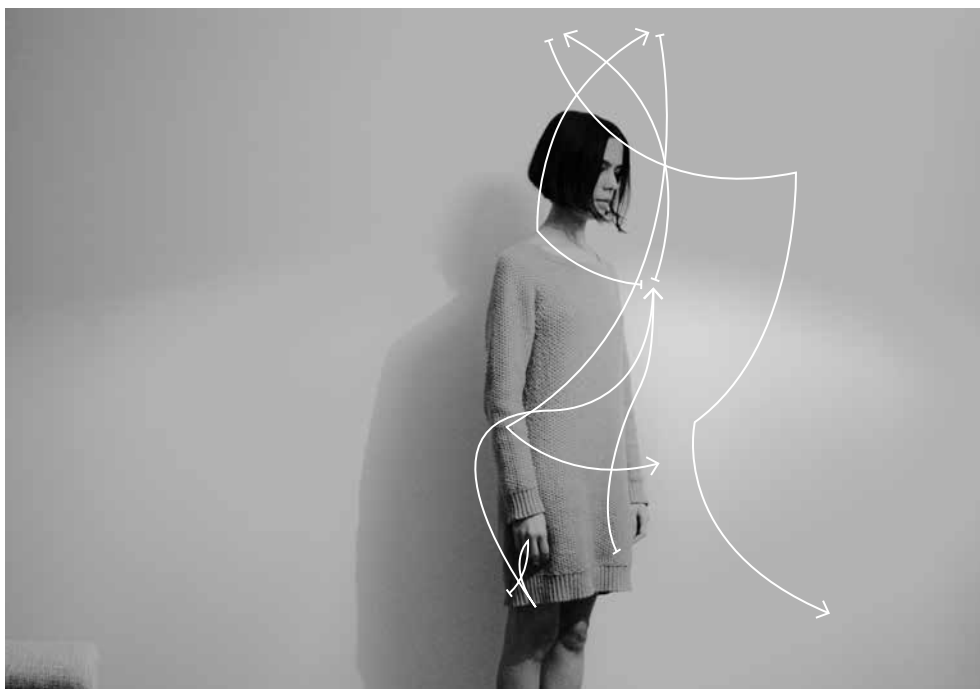
FIGURE 20
Dress(v.) visual autoethnography.
The image shows one picture (the first in a series) and
the vectors that represent the movements made by hands
in the activity of taking off a beige knit dress.
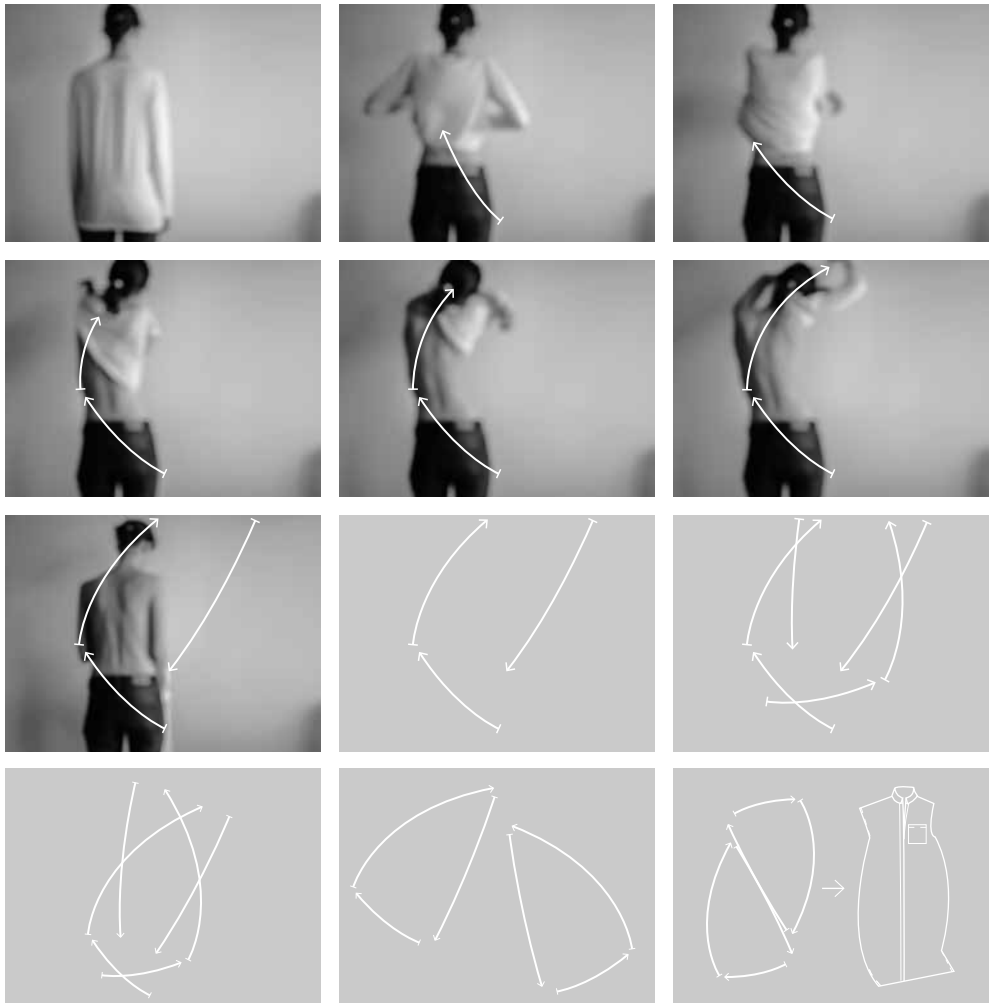
FIGURE 21
Series of pictures taken from the action of getting undressed,
with the reproduction of the movements as vectors and a
visualisation of how they informed the flat patterns of the pieces.
In the images I take off a white base-layer long sleeve t-shirt.
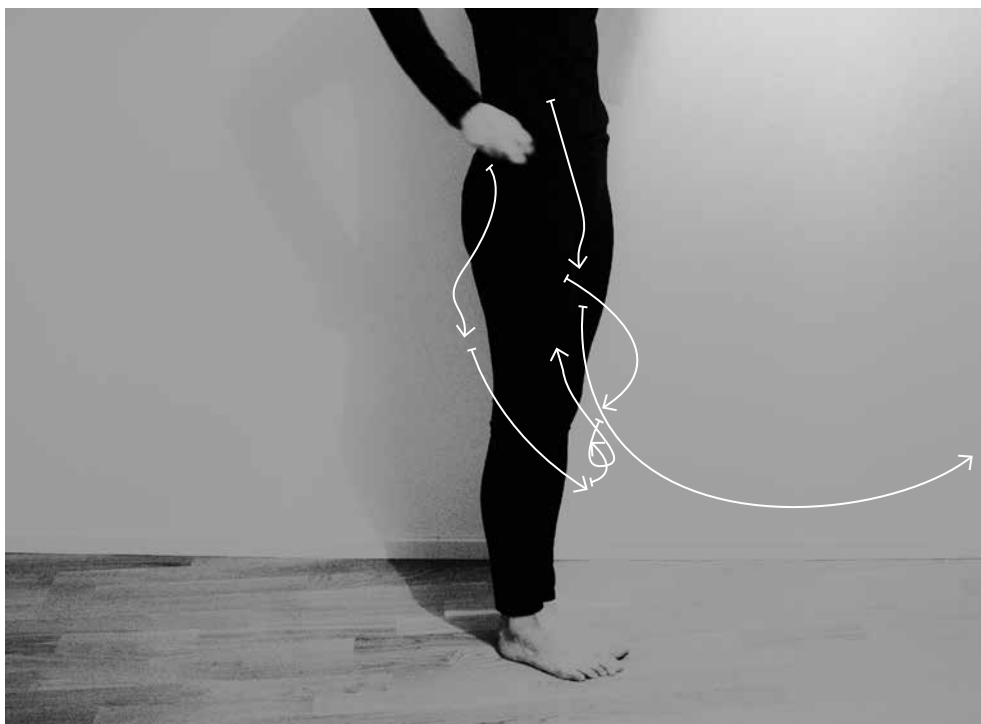
FIGURE 22
Visual Autoethnography in Dress(v.).
Undressing a pair of black cotton tights.
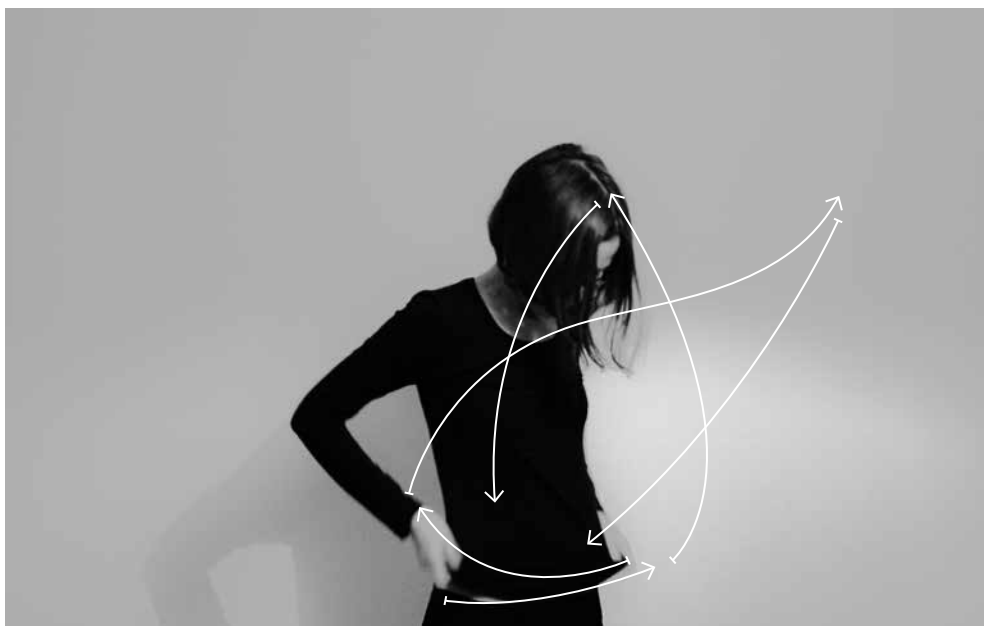
FIGURE 23
Visual Ethnography in Dress(v.).
Undressing a black base-layer t-shirt.

5.1

Introduction

> [...] theories of fashion have focused almost exclusively on why people dress the way they do, while very little has been said about how they [...] get dressed in the first place. To put it in other words, the emphasis has been on the communicative aspect of clothes, with a veil of silence thrown over the taken-for-granted spatial practices that underpin the sartorial system. (Cwerner 2001, 81)

Dress (both as a verb and as a noun) has its etymological roots in the fourteenth century. It stems from the Latin *directiare*, which literally means 'to direct' or 'to prepare'. In addition to relating to 'modes' of dressing, the core of its meaning comes precisely from the practice of getting dressed. As this action lies in the root of the word 'dress', sociologist Saulo Cwerner (2001), in the citation above, points out the curious invisibility of dress practices within academic investigations. In 2001, the idea of investigating clothes as a practice was often regarded as an effort of lower scholarship within and outside the academy. Yet, getting dressed is intrinsic to our being in the world. Perhaps it is the mundaneness of the action that renders it invisible? However, the fact that each and every human does somehow relate intimately to dress (in the form of either clothes, decorations or body painting) makes it a powerful action.

Frequently the source of information, or inspiration, for most fashion designers comes from external inputs: a muse, a movie, a book, an unknown culture, a material, or politics (Bye 2010, 32). The starting point for this investigation takes a different route. Motivated by a lack of prominence of studies that look into more intimate engagements between wearers and clothes in academic discourse (Cwerner 2001), this first study is directed towards the action of dressing. Similar to other studies in the field of fashion and clothing (Entwistle 2000, Cwerner, 2001, Skjold 2014) it is inspired by the richness of the practice of dressing and sheds light on the active form of the word 'dress' – i.e. the *verb* to dress. Entwistle (2000) broadly discusses the dressed body in regard to its situatedness within society, looking at fashion as an embodied practice, contesting the previous semiotic hegemony in fashion studies. She places dress as an intrinsic aspect of human bodies – be they dressed with garments, body painting or any decorative artefacts – and develops a theoretical framework where the body is central to understanding 'fashion' experiences, including the practices of dressing, wearing and performing identities.

Often shadowed by its noun form, dress as a verb welcomes reconsiderations of the roles clothes actively play in our daily negotiations with the things we wear. Ellen Sampson, in her doctoral dissertation on worn shoes (2016), points to this shadowing, referring to how studies historically favour the investigation of acquisitions and disposals rather than use phases. In a call for a further attention to the use phase of wearable objects, she states: "Though the choices and processes through which we acquire and dispose of our clothes are important, a far greater part of this relationship is of wearing, of habitual tactile contact, maintenance and repair" (Sampson 2016, 15). The project presented here adds voice to the discussion and aims at bringing forth the intimate encounters and interactions that bodies and clothes experience throughout the lifespan of a garment. What it ultimately proposes is that the pieces created can invite wearers to enter a closer and more reflective relationship with the worn. Dress(v.) was developed between February and July 2015. It starts with an autoethnographic investigation that unfolds as visual input to the creation of clothing (see Figure 17).

5.2
Experiment aims

FIGURE 24
A frequent movement made throughout the day
(to check if the ring inherited from my grandmother
is still with me) made visible via a vector drawing.

As the first project in this doctoral research, Dress(v.) looks into dressing practice from a subjective viewpoint as a source of information (and inspiration) for creating clothes. It starts with general notations on how I relate to the things I wear throughout the days. Inspired by an image of a mannerism (Figure 24) developed to check if I still hold in my possession the rings I wear (inherited from my family), it later develops into an autoethnographically inspired collection of images. The images are visuals of movements that provide shapes for creative pattern cutting. It invites individuals to

reflect on the daily practice of dressing as a means to spark questions and generate inspirational data for the development of clothing. In resonance with other projects in practice-led research (Mäkelä 2006, Nimkulrat 2009) this work starts with an open-ended question, with no prespecified expectations about the outcomes.

With the development of the work, ideas and concepts emerge through the action of making. Patterns in design activity can be observed concerning how issues and insights are approached. As the project starts taking form, with the support of note taking, the role of previous experiences and contextual knowledge in clothing design practice becomes clear (cf. Aspers 2006). Here the openness of the research question reflects a lack of expectations about the final outcomes. This openness calls for efforts in delineating a clear method, collecting data on design activity and developing a reflective practice within clothing design. Furthermore, it invites surprise at the creative process.

> I am very happy with how it looks on the dummy!
> So I proceed with a differentiation on length to produce a dress instead of a blouse. This could also be made in [other] fabric.
> I think it allows interesting unfoldings.
> (Process Diary, 6th June 2015)

Some of the clothes produced within the project are later investigated via wardrobe interventions. This aims at understanding how wearers relate to this specific method of creative pattern cutting. Within Dress(v.) the main questions asked are:

— How can an observation on dress practices inform a method for creating garments?
— Can design intentions be communicated through clothes?
— Do different modes of making garments suggest different engagements?

Systematic collection of data throughout the project allows verification of initial intents and broadens understanding of how the designer's intents are made manifest in garments. In addition, it enables comparison with how wearers perceive the pieces. The choice of investigating dress practices from an autoethnography perspective (Ellis et al. 2011) is inspired by the strong presence of this method in practice-led research. While researching the self can lead to restrictions on what is accountable (Pedgley 2007, 464), it stresses the unavoidable situatedness and partiality of the researcher (Ellis et al. 2011; Haraway 1988) and how artefact and maker are constructed

through mutual affects (Sampson 2016; Ingold 2013; Lee 2012). This mutual construction is expected to be made more evident through an autoethnographically-inspired method for creating clothes. Consequently, if much of the maker's body and intent is embodied in the artefact through the act of making and reflecting on making (Schön 1983; Dewey 2005), and vice versa (Merleau-Ponty 2002), do different approaches to making garments result in different interactions between wearer and worn?

This first part of the research, thus, aims at better understanding if and how experimental pieces may lead to new understanding and knowledge on the maker and wearers' self, as well as on embodiment of clothes through interactions. The design intentions are thought through, revealed in how the clothes are communicated via the printed support material (tags, leaflets, packaging) and the finishing of the pieces. As an integral part of my design practice, these decisions replicate the experience of engaging with clothes as they happen in a non-research environment. Through this, I seek to bring these experiences closer to real life encounters.

5.3
Design process

This section describes the crafting of the design method in Dress(v.) and its outcomes, with brief discussions on them. The design process is done via two stages of autoethnographies. The first stage is the production of images inspired by visual autoethnography, led by the interest of diving into a reflection on the relationship we have with the clothes we wear (Scarles 2010). The second stage systematically and longitudinally collects data on the design process as it evolves via a series of data collection methods (see Table 8). As previously discussed, this autoethnography differs in its aims from ethnographic studies as it does not expect to investigate cultural manifestations but rather collect material for visual inspiration and allow verification between design intentions and the latent affordances of the final delivered pieces. Despite lacking an anthropological aim, the research benefits from autoethnography for its support in furthering the understanding of one of the many practices that compose fashion[32].

32
Diary quotes in this section were previously presented in Valle-Noronha (2017b).

FIGURE 25
The setting in which the flat patterns were developed. The diary was kept always within reach to allow reflections to be quickly written down.

In Dress(v.) quotidian movements of getting dressed provide for a creative process in pattern cutting. The quotation below, from the project diaries, shows how the design method was defined, and is further explained in sequence:

> Take pictures of clothes changing in the morning
> Use images as source to redraw movements of the body
> Select movements (suitable for pattern cutting?)
> Draw or print the vectors in paper
> Play with the shapes
> Draw a new, possible, pattern
> Cut the pattern in trial or final fabric and test shapes
> (Process Diary, 22nd March 2015)

For thirty days I recorded my dressing activity through pictures, by placing a camera in my bedroom (where the action usually takes place). This timeframe was defined with the project schedule in mind. Moreover, throughout this period, I recorded the experiences of following my dressing routine and general thoughts about the possible design outcomes in a diary. Over 2000 images were taken of this clothes changing experience, and comprised the visual autoethnography that provided the visuals for the pattern cutting. The design phase of the project starts with the autoethnographic data transformed into shapes. The set of images at the beginning of the chapter (Figures 18–23) depicts how the movements of getting dressed and undressed were transformed into vectors.

This process of vectoring movements was done to twelve selected movements, which did not cover all the data collected but provided a lot of material to work with. Out of the twelve movements vectored, four were utilised due to the feasibility of reproducing the forms as patterns

for clothing. After selecting movements and digitally transforming them into vectors, the vector lines were hand drawn on light paper for pattern cutting. Based on these drawings, I played with the forms to test how pieces could be shaped. This process was done both with the scaled forms and also as sketches (see Figures 21 and 26). Actions that included smaller movements seemed to be more difficult to advance with in the form of patterns. As the clothes were supposed to be used by different individuals, sticking to simple forms seemed like a more fruitful strategy.

> *[After being frustrated with a very complex pattern*
> *based on 'smaller movements' vectors]*
> *I feel like it is necessary to continue with*
> *the testing for the patterns.*
> *I stick with the same initial shapes. They are simple,*
> *but fruitful to play with.*
> *(Process Diary, 17th May 2015)*

In a second stage, after the patterns were finalised, forms were tested in fabric for fit, comfort and overall visual qualities. This test stage happened in a similar way as testing trial pieces in a usual clothing production process (Bye 2010, 45). The pattern parts are cut in test fabric and sewn with basting seam as toiles to be fitted on the body. As there were no initial sketches on which to rely upon for the final shapes and fits, the main evaluation criteria comprised instigating forms that could deliver interesting interactions within the body-garment encounter, especially concerning forms. At this stage my body as a maker comes again into play to test the wearability of the pieces. Placing the toile on my own body allows me to identify comfort issues and solve them with greater ease.

> *[After testing the piece on my own body] I have to make the arms*
> *[sleeves] because only leaving openings doesn't seem to work so*
> *well. (Process Diary, 6th June 2015)*

As the body was the source for the shape of the patterns, it seemed natural to use my body again as a measuring tool. While developing the patterns, I frequently used my own hands or arms instead of a measuring tape, at times relying on previously measured correlations (e.g. a hand span measures around 20 cm) or on replicating the movements that inspired the pattern with the arms[33].

33
I further discuss the presence of the designer body on the process of making clothes on the exposition 'The body within the clothes' (Valle-Noronha 2019).

FIGURE 26
Testing a pattern. In the images the pattern idea and an attempt to visualise
the tridimensional form on the sketch (left) and the test in fabric (right).

FIGURE 27
Stills from a video depict how I measure the width of the
pattern for a shirt with the hands (4th June 2015).

Added to the physical presence of the body on the patterns, its
experiences were embodied in the patterns via design choices. The
diary excerpts below show how, for example, the weather influenced
the outcomes:

> I have finally started the first patterns for the project. It's a rainy
> day, which might have a bit of influence on the pieces' lengths,
> [...] how much space is left between the body and the garment.
> I start with the simplest of the forms. [...]
> (Process Diary, 2nd May 2015)

> I start the day with the dress-shirt I drew [...]. It feels good to
> make this pattern on this sunny day, since it's sleeveless.
> (Process Diary, 17th May 2015)

As the researchers' room at the university where I developed the
pieces did not have a mirror, it was not possible to clearly evaluate the
visuality of the dressed outcomes. By shifting the perspective from
the sheer visuality of the clothes to the *making of* and *feeling in and
with* the clothes I expected that the wearers could perceive this design
intention. In total, fourteen patterns were produced based on the

vector shapes. Out of these patterns four shirt patterns were used in the wardrobe interventions, which were all designed from the 'undress t-shirt movement' illustrated in Figure 21.

The white shirt was chosen for the deployment kits as it was understood to be rather universal clothing, part of many individuals' wardrobes (Anderson 1988). Seeing that the participants were supposed to wear the clothes they received, choosing a clothing type that would be easily accepted and would fit different preferences was crucial. The white shirt came as a solution that would both meet a wide range of individuals' tastes as well as correspond to the already established style of the designer. The fabric was chosen for a similar reason. It should be something that the participants could relate to as part of a daily wear vocabulary. To fit this demand, unbleached cotton locally produced in Minas Gerais, Brazil, was chosen. Previous experiences with the material and the code of conduct of the producer company helped in the choice.

Systematically following the design process made clear how my previous design experiences strongly affected not only the design choices but also the ways I relate to the different matters involved: the textile, the dummy, the weather and my own body. The interaction with the material also suggested changes in course: curvier and more 'difficult' forms emerged with ease while working with knit fabric – a very flexible and plastic material. On the other hand, woven fabric seemed to push the design closer to more conventional forms. The final outcomes were then a combination of these different actors as they engaged in the design of a clothing project, each of them holding affordances and ways of affecting each other. The following section illustrates and discusses the outcomes used as part of the wardrobe intervention kits: the four off-white poplin shirts and the design process behind them.

FIGURE 28
The fourteen pieces developed during experiment Dress(v.);
the white shirts were used in the wardrobe interventions.

FIGURE 29
Shirt IV worn by participant in the experiment.
Photo: Estúdio Tertúlia

FIGURE 30
Shirt I worn by participant in the experiment.
Photo: Estúdio Tertúlia

FIGURE 31
Shirt II worn by participant in the experiment.
Photo: Estúdio Tertúlia

5.4
Dress(v.) outcomes

FIGURE 32
Shirt III worn by participant in the experiment.
Photo: Estúdio Tertúlia

The experimentations aimed at inspiring the wearers to reflect on and enter into dialogues with the pieces. Being based on abstract shapes and not precisely on the tridimensionality of the human body, the pieces produced by the project are expected to invite different relationships between wearer and worn than the usual offerings from mainstream commercial fashion. In other words, the forms of the clothes do not take as their first reference the exact measurements of the human body (e.g. an average relation between bust, waist, hips), or of a particular normative human body, but rather shapes predefined by the method that governs the creative process of pattern cutting. This activity can be described as an experimental three-dimensional sketching, somewhat resembling the instinctive processes of sculpting in ceramics in which no specific outcome is predetermined.

In fashion literature, Ulla Ræbild (2015) describes two similar methods as a 'contour draping' and 'against the body'. The 'against the body' method is described as being 'about consciously changing between making shapes that follow the human body and making shapes that work against the human body' that result in 'aesthetically surprising effects and results' (Ræbild 2015, 272)[34]. It refers to pattern cutting approaches that do not take the measurements of the human body as a primary direction for the pattern form. Instead, the different forms are used as a means to explore how the forms in the body and the clothes can interact. Contour draping, on the other hand, is described as 'drawing up a flat, improvised and perhaps abstract shape with a contour and using it directly on the dummy by draping' (Ræbild 2015, 269). This artifice is not limited to the forms offered by traditional methods such as that of block patterns. This process strongly relies on reworking the forms by draping on a mannequin. The process in Dress(v.) can be described as a combination of these two methods, with dressing movements as a visual information source. It is intended that this mode of designing clothes, based on a method and not on a sketch, could produce pieces that play a more active role in the wearing system, as they call for conversations and relationships with those who wear it. This can be illustrated by the ways in which the garment re-conforms itself to each wearer's body in accordance to its material properties.

	SHIRT I	SHIRT II	SHIRT III	SHIRT IV
MATERIAL	100% Cotton, Cataguazes	100% Cotton, Cataguazes	100% Cotton, Cataguazes	100% Cotton, Cataguazes
COLOUR	Natural (off-white)	Natural (off-white)	Natural (off-white)	Natural (off-white)
OTHER DETAILS	Short sleeve (18 cm long) on left side and extended shoulder (30.5 cm total) on the right side, one outer pocket on left chest. Irregular. Straight bottom hem. Length (shoulder hem) 64 cm.	Sleeveless with short sleeve effect (arm-holes on the back of the shirt), one outer pocket on left chest area. Regular sides. Rounded hem, longer at the back. Total length 64 cm.	Sleeveless. Extended shoulder on right side (total 26.5 cm), normal shoulder on left side. One outer pocket on left chest. Irregular sides. 15 cm long slits on both sides. Total length 108 cm.	Long sleeves (62 cm), one outer pocket on left chest area. Irregular sides. 15 cm slit on sides. Length 64 cm right side and 82 cm left side. Slightly differing shoulder lengths.
TECHNICAL DRAWINGS	(see Appendix 13)			

TABLE 7
Short descriptions of pieces in Dress(v.)

34
Some examples from practice can be found in the ball and cube shaped pieces by Anrealage (2018) and the basic forms draping works of Usha Doshi (2017) and Theriaca (Hamada 2018).

Table 7 summarises the material properties of the pieces chosen to be deployed to wearers. A detailed description is found in Appendix 12 and technical drawings in Appendix 13. Though not within the scope of the aims, the four shirts seemed to speak a language of care. In unbleached cotton poplin, the actions and interactions had while wearing them would be easily manifest in the piece: folds, surface impressions, food stains. In the following pages, the final pieces are presented.

FIGURE 33
Shirt II worn by participant in the experiment.
Photo: Estúdio Tertúlia

FIGURE 34
Shirts I and II, part of Dress(v.).
Photos: Estúdio Tertúlia

FIGURE 35
Shirts III and IV, part of Dress(v.).
Photos: Estúdio Tertúlia

5.5
Intervention

The wardrobe interventions method was created after the Cultural Probes (Gaver et al. 1999) and aimed at thought-provoking interactions in order to collect data for research in design. The method holds aims close to those of the Cultural Probes: to collect open-ended inspirational material to inform design via disruptive objects deployed to users. On the other hand, the ways of collecting data lie closer to Design Probes (Mattelmäki 2006) through diary entries. The strangeness and disruptive aspect of the pieces deployed, integral to the concept of Cultural Probes, gain a different dimension in this experiment. The pieces can be referred to as being 'bespoke' interventions, as careful attention is given to crafting a made-to-measure garment with subtle idiosyncrasies. The first application of the method used pieces produced by the Dress(v.) project and intervened in wardrobes in Belo Horizonte, Brazil. The location choice had in mind the ease of access to a production space and to a wide audience that would be interested in taking part in the project.

SAMPLING
PARTICIPANTS

An open call in digital media (Instagram and Facebook) in March 2015 invited individuals interested in taking part in a research project on wearing experiences. All interested in participating in the research project (a total of sixty-eight) were contacted and asked to fill an online questionnaire via Google Forms (see Appendix 3). Thirty-seven responses provided the following information:

— Personal information: Full Name, Date of Birth, Occupation
— Personal Contact Information: Address, Phone, E-mail
— Clothes sizing: Shirts size, trousers size, height
— Other info: Ownership of pieces designed by the author with their description

The information raised helped in the selection of participants residing in Belo Horizonte, and would later serve as a source for the confection of the pieces. At the time when the questionnaire was completed, the clothes to be deployed had not yet been designed. In this study, only individuals who had not previously owned a piece from my production were invited. In this way, it was expected that they would provide more candid feedback, as they did not have any experience with this specific production before. The first fifteen responses from

females residing in Belo Horizonte were selected. This number aimed at reaching a final total of ten participants and considered possible withdrawals or uncompleted participations.

The selected sampling of fifteen individuals was again contacted in order to collect more granular data in regard to garment sizing and fit and provide further information about how the study would take place. Apart from the slightly disruptive aspect of the garments, it was necessary that the participants would actually wear the pieces in their everyday lives, and thus having better directions on sizing became relevant. To this second contact, which took place in early April 2015 and explained how the research would unfold, three participants did not reply. In May 2015, the first intervention was deployed to a total twelve participants from different professional backgrounds whose ages ranged from 27 to 49 years old. Table 8 presents the demographics of the participants. Names were anonymised, as they were understood as irrelevant to the study. Two participants were left out of the study as they did not collect or return their intervention kits.

PARTICIPANT	AGE	PROFESSIONAL BACKGROUND	MANNEQUIN SIZE	LOCATION
P1	40	Stylist	38	Belo Horizonte
P2	37	Physiotherapist	42	Belo Horizonte
P3	27	Graphic Designer	38	Belo Horizonte
P4	41	University Teacher	49	Belo Horizonte
P5	35	Language Teacher	38	Belo Horizonte
P6	44	Personal Relations	34	Belo Horizonte
P7	34	Artist/Performer	46	Belo Horizonte
P8	49	Psychologist	40	Belo Horizonte
P9	49	Art Teacher	48	Belo Horizonte
P10	28	Sound Engineer	38	Belo Horizonte

TABLE 8
Dress(v.) project participants' demographics

DEPLOYMENT

The Wardrobe Intervention Kit as deployed to participants
with: a canvas bag, a shirt, diary, informative leaflet,
participation consent form and my personal card.

The wardrobe interventions were first planned in a three-step process: (1) Intervention Deployment; (2) Wear Phase; and (3) One-to-one Meeting, illustrated in Figure 37 below and detailed in sequence[35].

1   Intervention deployment

In the first one-on-one encounter an intervention kit was given to the study participant (Figure 36). The encounter began with a brief introduction to how the pieces were created. The participant tried the clothes for the first time in the presence of the, and necessary alterations were identified and made. This on-site personalisation process ensured that the clothes fit well and resonated with the wearer's style preferences. In addition, a picture was taken to record this initial encounter between wearer and worn. The designer then explained how the study would unfold, what is expected from the participant, as well as their rights. At this point participants signed a form consenting to their participation. They were, thus, invited to wear the given piece '*about six times*' during the period of a month. Importantly, there were no mandatory use criteria. Rather, participants were asked to wear the piece like any other item in their 'in use' wardrobe. At each use, an entry was to be made in the provided diary, reporting their experience with the garment. These instructions were given in the first encounter and could be found printed in the first pages of the diary, to ensure the message was clear (see Appendix 8).

At the end of the encounter, the participant took the wardrobe intervention kit home. Before leaving, they were instructed that if any questions or doubts arose, they could contact the researcher without hesitation. The intention behind this was to ensure that the study could develop smoothly and fruitfully.

2   Interaction phase

Once the piece was in their wardrobe, participants could interact with it in any way desired. Alterations or personalisation of the item were allowed and understood as reflecting the nature of the relationship. During the study period, notations on the experiences were made in both a structured and unstructured form. Predefined questions were printed on the diaries followed by blank pages (see Appendix 8). The questions aimed at situating the participant in the moment of experiencing the piece, while the blank pages were intended to make inspiring discussions emerge. Towards the end of the diary-keeping

35
The paragraphs describing the steps in the wardrobe interventions were previously published in Valle-Noronha and Wilde (2018), on pages 204–208.
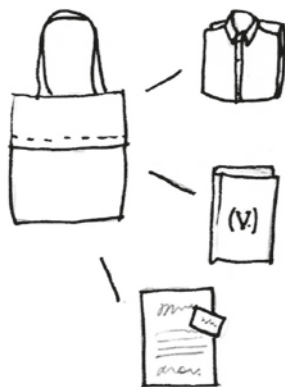
Você acaba de receber seu kit dress(v.)! Ele contém:
. bolsa em algodão,
. camisa em algodão
. caderno em branco
. termo de concessão e cartão de visita.

You have just received your dress(v.) kit! It contains:
. cotton bag
. cotton shirt
. notebook
. concession agreement
. and name card.

Todo o material coletado aqui será analisado e seus resultados farão parte de uma pesquisa acadêmica.

Nenhuma informação pessoal será compartilhada ou publicada. Todas as duvidas ou questões podem ser esclarecidas através dos contatos que recebeu.

All the data collected here will be analysed and the results will be part of an academic research.

No personal information will be shared or published. Any doubts or questions can be clarified using the contacts you received.
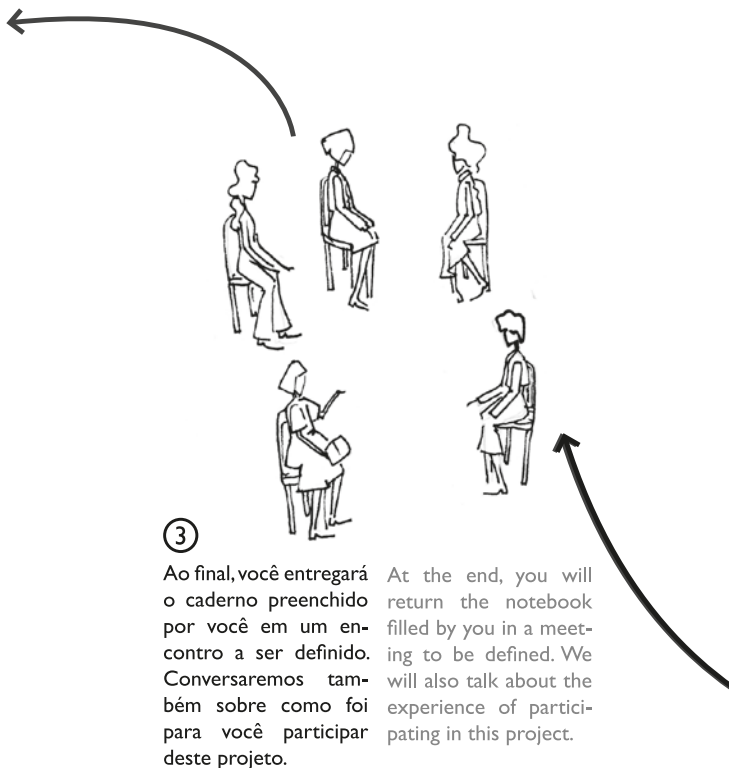
③

Ao final, você entregará o caderno preenchido por você em um encontro a ser definido. Conversaremos também sobre como foi para você participar deste projeto.

At the end, you will return the notebook filled by you in a meeting to be defined. We will also talk about the experience of participating in this project.

①

Em um encontro no
dia _____
você receberá seu kit
e conversaremos um
pouco sobre como
acontecerá a sua par-
ticipação.

In a meeting on _____
you will receive your
kit and we will briefly
talk about your partici-
pation.

Ainda no mesmo dia,
faremos uma foto
para registrar o seu
primeiro contato com
a peça que acaba de
receber!

On the same day we
will take a pictureof
you to record your
first contact with the
piece you have just re-
ceived!

②

Durante o período de
um mês você irá usar a
peça e registrar sua ex-
periência no caderno
em branco. É sugerido
que você use a camisa
no mínimo 6 vezes.

During one month you
will use the piece and
record your experi-
ences on the notebook
provided. It is suggest-
ed that you wear it at
least six times.

period, all participants were contacted by email to return the diaries and share their experiences.

3   Group discussion

Via Doodle, participants were invited to share their experiences about ordinary or extraordinary events that took place during the study period in a discussion mediated by myself. Time restrictions and the difficulty of scheduling one-to-one meetings called for an alternative approach to meet participants again and hear their impressions and experiences beyond what was written in the diaries. A group discussion was organised with the six available participants. At this event, the diaries were collected and a rich two-hour discussion evolved, highlighting the main reflections experienced and revealing new topics that were not always present in the diaries. In addition to the topics that emerged from their experiences, the mediator tried to understand whether the clothes suggested anything to the participants beyond clothing-related choices, such as a different choice of diet or more radical actions or shifts in behaviour. For example, a white shirt may suggest 'stay away from the spaghetti and tomato sauce' or a tight neckline might invite the wearer to overcome a fear of performing do-it-yourself alterations on their garment. The objective was to have participants indirectly reflect on such agencies, considering the wearer-worn relationships they had lived with their clothes.

The group discussions sought to include a more participatory approach to the study. They aimed to bring each participant's voice to the reading and interpretation of the material collected, including the participant's discussion and interpretation of their own experiences as part of the data. Discussing the interventions in a group brought to the research a particularity of fashion experience, that is, the constant consideration of others' gazes into our own perception of our dressed selves. The possibilities offered by discussing with plural voices instead of one-to-one conversations proved to generate extremely valuable resources for the research and lead to quality findings that could inform design and research iterations.

4   Reassessment questionnaires

Reassessments were undertaken two years after the deployment of the pieces. The decision to do this was made in the course of the data interpretation stage for Wear\Wear in response to two unavoidable facts. In the first place, relationships evolve over time and one or three months might not be enough to allow for considerable development. Second, the diary-assisted relationship is, in many aspects, different from individuals' everyday engagements with clothes. These two facts suggested the need for a reassessment to determine whether

or not further shifts had occurred. With a reassessment, findings from the diaries and group discussion could be confirmed or rejected, strengthening the validity of the results via a triangulation of data. In total, four out of ten in the first project were reassessed via online questionnaires (see Appendix 5) with closed and open-ended questions. Next, all audio material from the deliveries and group discussion were transcribed and translated from Portuguese into English to allow verification by peers and collaborators.

FIGURE 38
Image from the group discussion for the Dress(v.) wardrobe intervention. The discussion took place in Belo Horizonte under an informal setting.

5.6
Dress(v.) data set

The produced and collected data set is identified and described
in the table below, divided into practice and empirical data.
Its interpretation followed the steps described in Chapter 5
(section 5.4.3).

PROCESS	DATA SET	DESCRIPTION	METHOD	AMOUNT OF DATA
Practice	Dressing photographs	Visual autoethnography on clothes dressing. The material served as support for designing flat patterns for clothes.	Auto-ethnography	Over 2000 images
Practice	Diary (design practice I)	Diaries kept during the design process. The content varies from personal reflections to technical drawings. Data was collected through the process on a constant basis.	Auto-ethnography	One 50-page diary, partially filled
Practice	Photographs (design practice I)	Photos taken during the design practice. They are categorised as pre-set pictures (always taken at predetermined times) and spontaneous pictures (taken when the designer found that a design decision was needed or was made). They were used to investigate the design process.	Auto-ethnography	Over 100 images and 5 videos
Practice	Diary (dressing experience)	Diary kept during 30 days to collect information on personal dressing experiences. Comprises notations on everyday experiences of getting dressed and was used as source of inspiration for the design process.	Auto-ethnography	One 50-page diary, partially filled
Empirical	Dialogue (probes handout)	Meetings in which the wardrobe intervention pieces were handed out to participants. They were all audio recorded and transcribed. It was assured that all participants received the same information.	Wardrobe Intervention	10 meetings recorded, approx. 5 h audio, partially transcribed
Empirical	Diary (wearers' diaries)	Diary kept by participants. The diaries were completed during one month and divided by entries 1–7. They were used as part of the wardrobe interventions data set.	Wardrobe Intervention	10 diaries (with 72 pages each)
Empirical	Group discussion	Group discussion between participants in Dress(v.), led by the researcher. Audio recorded and some pictures were taken. No video was recorded to increase comfort. The group discussion aimed at discussing topics related to the experience phase. It was transcribed, translated and coded.	Wardrobe Intervention	2 h 11 min recorded audio + 23 images
Empirical	Questionnaire (reassessment)	Digital reassessment, done via Google Forms. This aimed at investigating how the relationship between wearer and clothes developed during a longer frame (two years).	Wardrobe Intervention	4 responses

TABLE 9
Description of data collected in the experiment Dress(v.)

As previously stated, the practice data served as a support to raise questions and allow verification of design intents and embodiment of the reflections gained through literature and practice (Candy 2011). Details on the results from the open and thematic coding steps are presented in the next section.

5.7

Findings

The wardrobe intervention helps investigate how individuals related to this subtle disruption brought into their wardrobes. This section presents the findings from the data interpretation. They are divided in three big groupings that speak of the relationship development between wearer and worn. They are (1) Garment Properties, (2) Affects and (3) Becomings. The findings were extracted from the data set in Table 10 (a reduced and summarised version of Table 9).

DATA TYPE	COLLECTION/PRODUCTION METHOD	PARTICIPANTS	TOTAL
DESIGN DIARIES	Self-recorded (by designer), handwritten	1 (designer)	1 diary
DESIGN VISUAL DATA	Self-recorded (by designer)	1 (designer)	100+ photos, 5 videos
PROBE HANDOUT MEETING	Audio recorded and transcribed.	10	Around 300 mins
EXPERIENCE DIARIES	Self-recorded, handwritten/ partly transcribed (includes text/images)	10	10 diaries
GROUP DISCUSSION	Audio recorded and transcribed.	8	Around 120 min
REASSESSMENT QUESTIONNAIRE	Digital questionnaire, using Google Forms platform	4	4 responses

TABLE 10
Summary of data collected in the Dress(v.) experiment

The final interpretation of the data took into consideration the entire data set, which helped in triangulating the information gained from each step of the research experiment. In the interpretation process, each type of data was coded independently using Atlas.ti software. Next, information was confirmed by comparing each participant's statements across diaries, group discussion and reassessments. Data produced by the designer (i.e. diaries, and visual data) was used in the second and third groupings (Figure 40).

This section starts by presenting the first grouping, Garment Properties, which were deductively raised from the data covering physio-, psycho-, socio- and ideological features, following Jordan's (2000) categorisation of perceived product qualities. It takes into consideration solely participants' pronounced perceptions and excluded those based on

personal taste such as considering the garment 'beautiful'. The garment properties will lead us through the qualities the garments hold, whether these were determined or influenced by the design (and thus, the designer), and help in the understanding of the following categories. These properties often direct or support the garment's affects and agencies, and are thus relevant to how the knowledge is constructed in the research. As this study is interested essentially in how clothes and wearers interact, Jordan's model (2000) fails to provide the study with all the necessary knowledge. In order to achieve the research goals, two further categorisations look at the pieces not as stable and isolated objects, but as agential matter. Due to the lack of an existing model to build on, the following categorisations and their contents emerge from the data through an inductive approach. Thus, the data (diaries, group discussions and reassessment interviews) is used together with literature as a source to create the categories.

The second grouping, Affects, looks into the relationships and considers how wearer, worn and designer can affect each other. Here, the focus is shifted from what the clothes are to what the clothes can do. The third grouping, Becomings, speaks of the results of these affecting relationships. The categories Affects and Becomings are drawn directly from the theoretical background on theories of material agency and affect, which in its turn, is drawn from the findings.

It is well to note that despite being clustered in groups, each category is influenced by or intersects with other categories. As an example, the off-white colour of the shirt (a physiological material property) is one of the reasons behind participants perceiving themselves as well dressed (a socio-psychological property) and is also a driver towards a deaccelerated experience (an ability to affect). Due to the impossibility of considering the categories as isolated, I suggest that they be understood as a group of forces acting together and be visualised as a network rather than as a list.

PERCEIVED GARMENT PROPERTIES

The twelve off-white shirts in 105 g/m² poplin, made under experimental processes in pattern cutting, were described by their wearers as comfortable, uncomfortable, special, timeless, versatile and looking natural. Due to its cut, material or colour, the shirt evoked feelings of confidence, comfort and company. Below are listed the garment properties as perceived by the wearers, with indications of how often they were considered. The count considers the number of participants that mentioned a property and not the total number of mentions.

PERCEIVED GARMENT PROPERTIES	NUMBER MENTIONS
Physiological	
Comfortable	6
Versatile	3
Natural	2
New	2
Uncomfortable	1
Timeless	1
Psychological	
Special (made to measure)	8
Embodies traits of the designer	4
Embodies traits of the wearer	4
Embodies traits of the environment	1
Feel well dressed	3
Comfortable	2
Self-confident	1
Safe	1
In company	1
Sociological	
Different (attracts attention)	6
Ideological	
Represents the women I want to be	4

TABLE 11
Perceived Garment Properties as indicated by participants
following Jordan's (2000) categorisation into physio-, psycho-,
socio- and ideological perceived characteristics.

Comfort, one of the most often mentioned properties, is connected
not only to material (such as textile surface, smell, weight, colour,
fit and form) but also abstract features (style, versatility, well put,
confident). It supports the development of the relationship based on
'feeling good'. Here the associations trace back to the materiality of
the garment, to the work of the designer and to a western cultural
understanding of what a white shirt means[36].

36
Some of the psychosocial implications of the
white shirts are described and discussed in the
works of Anderson (1988) and Brough (2013). In
these two works, the item is strongly connected
to the working environment and movements of
women's emancipation.

*I felt very comfortable. The cotton fabric touching the skin
is a caring touch. (P8 Diary)*

*White shirts have this kind of power. [...] I felt very pretty on that
day and had a true experience of comfort and satisfaction with
the piece. (P7 Diary)*

*But the word I used to describe it was 'pyjama'. It is soft, fresh,
and comfortable. It's not the kind of piece that when you get
home you think, 'Whoosh, let me get this piece off.' You wear it
naturally. You take off your watch, necklace, etc., but you keep
the shirt on. (Group Discussion)*

*In the last use, I decided to work with it at home. [...] I did not
even remember it existed because it is so comfortable but every
time I went to the toilet [and saw myself in the mirror] I would be
surprised because when you are at home you do not usually think
about how you look. But there was another [uncommon, tidy]
garment there. So I was always surprised. (P2 Group Discussion)*

Being made to measure and having the opportunity of meeting the
designer deemed the pieces as special, a feature mentioned by eight
out of the ten participants in the study. This reflects the contemporary
consumption habits of an urban individual who seldom buys made-
to-measure garments due to their high cost. It can be added, though,
that this particularity might bring memories, especially for the older
participants in Brazil, of life about thirty years ago when it was rather
common to have clothes made by a local seamstress (cf. Novaes
2016). This might have added an extra layer of affective ability to the
garment, which has not been quantified here. Other aspects such as
feeling well dressed, confident and safe are connected to this cultural
meaning of the white shirt together with the status of a made-to-
measure garment, as seen in Figure 39.

The 'new' aspect of the shirt was mentioned by two participants in the
group discussion and diaries, but strongly reverberated among other
participants during the group discussion, drawing general agreement.
The 'feeling of a new garment' was seen as exciting, fresh and very
positive. One participant mentioned the desire to make changes in the
garment in the future, in order to regain that particular feeling.

*I was thinking that maybe I would like to modify it in the
future. Because usually I wear things for some time, but then
I wear less, but if it looked new I would wear it more again.
(P1 Group discussion)*

However, this intention was at times confronted with a feeling of 'respect' for the designer's work, which prevented participants from more radical adaptation action, raising the question of how could designers avoid such a position through design.

> *I tried to do something, but I felt that if I changed it would be like getting a painting and adding something to it. It wouldn't be right. Like having a building from a very nice architect and then building something else attached to it. (P2 Group discussion)*

The perceived ideological features were connected to slower production in fashion and to higher quality of products, which the participants mentioned reflected desired changes in attitude. The following quote illustrates this perception:

> *[I] went to the supermarket. The white cotton shirt and [its] cut ask for a pause in the everyday rush in order to see the details – which are almost, if not, poetic. The detail of the sleeve as a cut on the back, the elliptical buttons (the first vertical, the others horizontal). (P9 Diary)*

In general, it can be stated that the participants understood the piece as special and of high quality, something that carries traits of the designer, the wearer as well as the environment – thus, a memory holder. This feature will be further discussed in the following section. Even though their response was generally positive, most participants mentioned that they saw the piece as 'different' or 'curious', often – though not exclusively – connected to external perceptions or comments.

> *Today there were some architects in the office and they curiously stared at my clothes, but they didn't say anything. The feeling I had was that this 'not saying anything' seemed to agree with what I was wearing, as if it were curious, but coherent with me. And this is how I felt: coherent. (P3 Diary)*

> *In the warmth of the changing room I enjoyed getting in touch with the poplin. I found the proportion strange. I had to give it movement, shorten, balance. (P8 Diary)*

The external perception is certainly a relevant aspect in individuals' experience of garments; however, this factor is not going to be further investigated here, as it has been the subject of many academic endeavours in fashion studies (Entwistle 2000; Kaiser 1990). After understanding these properties, I set out to look into the abilities of these pieces to affect and be affected by the wearers.
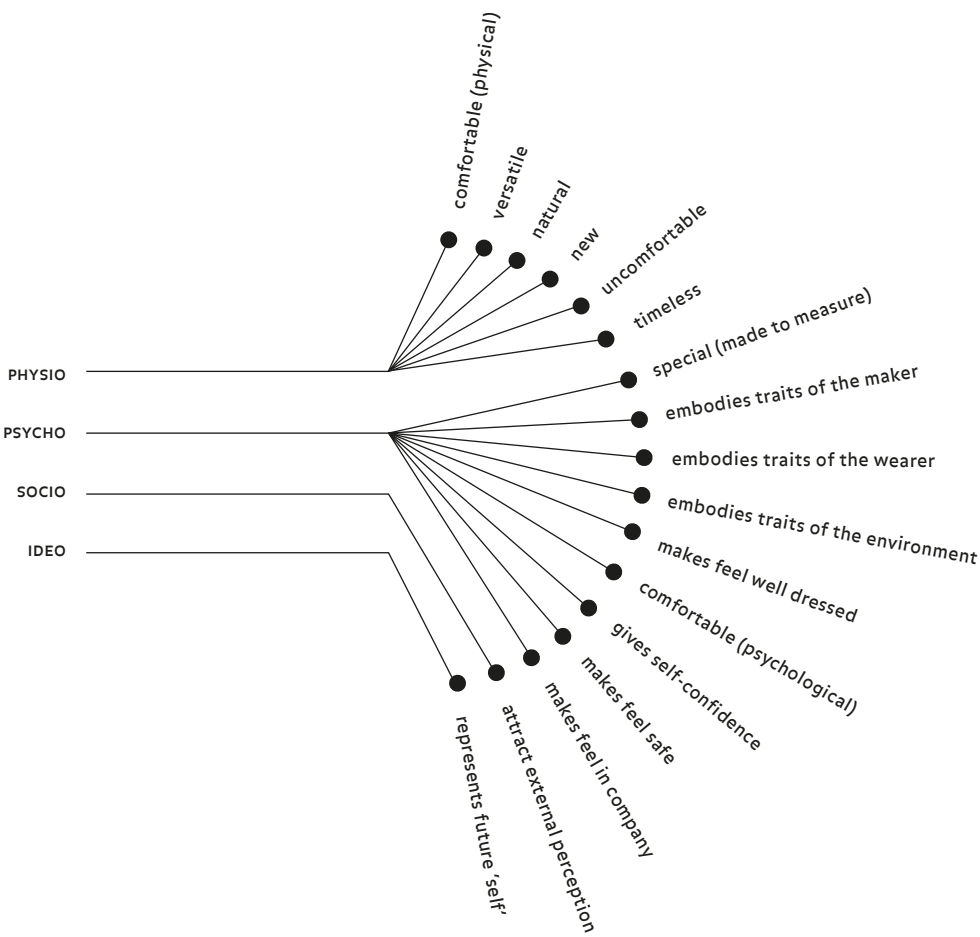
FIGURE 39
DRESS(V.). PERCEIVED PROPERTIES OF DRESSES AND BLOUSES. Visualisation
of the physio-, psycho-, socio- and ideological perceived properties of the
deployed pieces. On the left, the different properties are categorised.
On the right, the relationships between these properties as found in the
data are linked with solid lines. Unlinked properties were mentioned by
participants but no direct connection to other properties was voiced.

comfortable (physical) —————————————————— PHYSIO

versatile

natural

new

uncomfortable

timeless

special (made to measure) —————————————————— PSYCHO

embodies traits of the maker

embodies traits of the wearer

embodies traits of the environment

makes feel well dressed

comfortable (psychological)

gives self-confidence

makes feel safe

attracts external perception —————————————————— SOCIO

represents future 'self' —————————————————— IDEO

MAKER

GARMENT

WEARER

material choice
material engagement
challenges form/fit/design
previous experiences
situated making
leaves marks (embodiment)
demand care
playful
demand reflection
motivate creativity
comfortable
demand adaptation
special (made to measure)
natural
new
timeless
uncomfortable
special
embodies wearer
different
offers challenges
adapts to wearer
adapts to garment
confident
well dressed
in company
identifies future self

ACTORS

PERCEIVED CHARACTERISTICS

FIGURE 40
Visualisation of findings. The image presents a visualisation of the
network in which actors, their perceived characteristics, abilities to
affect via interaction and the result of these affects are identified.
The visualisation was produced from the codes that emerged in the
interpretation phase. In it, the dashed lines are used to link relationships
within the same level of codes and the solid lines link relationships across
levels. Codes in grey denote characteristics with no direct effect.

drive immagination

ironing

hand washing

de-acceleration

makes process visible

build knowledge on garment/process

successful creative adaptation

unsuccessful creative adaptation

motivates change in attitude

attracts external attention

builds memory

build stronger connection

reflect on experience

support newness (change future)

prevents radical adaptation

AFFECTS

BECOMINGS

BEYOND PROPERTIES:
WHAT CAN A SHIRT DO?

As can be seen in Table 11, many of the perceived properties come in the form of verbs (e.g. 'embodies traits of wearer' or 'makes feel in company') and not only adjectives (e.g. 'versatile' or 'natural'). This alludes to a need to look beyond the fixed properties of the piece, towards what its affects are, or what the piece can afford or 'do'. Nevertheless, even though these properties are unable to answer how designers can promote more active engagements between wearer and worn, they do help in tracing connections between the affects and material properties of the pieces.

Figure 40 illustrates how the agencies of garments, wearers and designers affect each other. The outcomes of these affects are defined here as 'becomings', or, in other words, the results of the effected interactions. This second layer of interpretation seeks to cover the question 'what can these pieces do?' The three main becomings include (1) a development of knowledge and understanding, (2) changes in attitude and (3) the setting of stronger engagements. Though it cannot be stated that such changes will persist throughout participants' actions and decisions in the future, they should, at that point, be considered.

This section discusses the codes under affects, grouped into (1) Care, (2) Visible Process, (3) Creativity Motivator and (4) Embodiment. These groupings stem from the perceived properties that most effected differences in the relationships (Figure 40).

Care
A white poplin shirt easily gets creased and stained, making the experiences very clearly imprinted on the garment. It hints to the wearer and their beholders what they have gone through, together. What, then, can this colour-material-design combination do? A motivation to change in speed of how participants experienced the garment was mentioned by two participants. They reported the material and design as the causes of this deceleration associated with the need for care, the details present in the design that demanded careful attention to be perceived or the information on the making process.

> During lunch I realised I was eating slower and more carefully to avoid staining the shirt. I had to go back to work at 14:30. I wouldn't have enough time to change clothes. [...] I felt at that moment that I was wearing something more delicate, special, artisanal made. For some reason I should respect it. (P2 Diary)

I caught myself thinking about the action of dressing, on the movements I make every day when I get dressed and undressed. I also thought of the movements during the day and how these actions are so automatic. Today after getting dressed and while thinking about it, I slowed down my pace. It was interesting.
(P6 Diary)

Visible Process
The pieces were designed particularly for a research project and made to the measurements of ten participants. An informative leaflet tells how the garment was created and produced, and an informal conversation at the designer's studio discloses the origin of the material, the maker's body, the space where the garment was designed. This background information is carried by the garment and is kept in the memory of the wearer, who points to the process as an added value to the garment. It provides more knowledge on how clothes are made, which can equip wearer and consumers with agency to act with the garments:

I came here, she gave me the shirt and I liked everything. I work with clothes too, not a fashion designer though. And what happens is that clothes do not interest me anymore. And I think this tries to rescue the importance of the process.
(P1 Group discussion)

It is a very nice feeling. The person chose the fabric, made the pattern, cut, sewed, and handed it to you! This was always coming to my mind. This piece [is] unlike the others, I knew the whole story of it. So I think it should be part of my story too, even as a form of respect. [...] I realised I want more pieces like this. That has a meaning, not just for the design or the brand, but also because of the story and the comfort. Because we spend a lot of time with the clothes. (P6 Group discussion)

Another point was noted: this increased users' understanding of the garment, more specifically of the pattern cutting. This growth in understanding was directly connected to the construction of the fabric used in the pieces – a simple woven poplin. As the material would easily get creased, wearers found a need to iron. This need was, to many of them, seen as differing from other pieces they owned. While wearing a nicely ironed shirt gave them the feeling of being well dressed, the action of ironing itself brought more information about the garment: its flat pattern. For two participants, the lines and curves, the cuts and darts as well as the design intentions became more visible as the wearer invested in ironing the piece:

I only realised the very specific details of the shirt when I ironed it. It was very nice to see what was done, to perceive the hands there. I think it was at that moment that I could realise these things. (P10 Group discussion)

I woke up early to have time to iron the shirt. Ironing it was more important than dressing in it and washing it to know it. [...] When I ironed I got to know more about the pattern, I could see the details from the artisanal couture, I found it very special. (P2 Diary)

FIGURE 41
Participant 'feels' the shape of the piece on the
body to understand its volume (P8 Diary).

To other participants, the physical encounter between body and garment aided in getting to know the piece. For them, the experience of wearing – together with other affecting agents such as weather conditions, situation, etc. – was important in understanding the shape and fit of the garment. For example, the shape of the shirt at times allowed for air to flow between the body and the piece, making it cool even in very hot days. Figure 41 illustrates the experience in which a participant tries the piece in a sports hall changing room. The heat of the space made the wearer enjoy the poplin textile but feel uncomfortable with the volume and proportion.

Creativity Motivator
Three participants mentioned that the pieces worked as a call to imagining different realities. These were motivated by care instructions, most specifically washing, and by the intervention and challenging aspects of the piece. Concerning washing, the care label

suggested that the piece be washed with coconut soap, which inspired the wearer to imagine herself in a beach scenario, where the piece could still be in use, as it was very light.

> I started thinking about so many things while washing, it looks so good, it smells so good. And the shirt, because of its ventilation, I was transported to another place while I was washing it. I was really in an imaginative frame of mind. I thought I was at the beach, and I could still wear it, because it is a fresh piece, and would protect me from the sun … but then I woke up. It dried really fast. (P2 Group discussion)

On the other hand, the intervention came as a disruption in participants' wardrobes, demanding creative exploration and experimentation to work within each individual's wearing practices. What could the garment be combined with? What does it embody and what reflections does it carry? The quote below illustrates some of these wonderings:

> [S]ince [the one month time frame] was very quick I would like to have had more time to reflect on it more, and write more, I really liked the reflections. I think it does entice certain creativity, on me it did. Sometimes on the streets I found myself thinking of interesting combinations. I would like to spend more time in front of the mirror, experimenting … (P10 Group discussion)

FIGURE 42
Participant explores ways to suppress the volume of the long shirt by making a knot (P8 Diary).

FIGURE 43
An exercise in supressing the irregularity
of the piece by wearing part of it inside the
jeans (P5 Diary).

This investment in adapting to the garment was common to the
majority of the participants as creative adaptations. One participant
mentioned adapting herself to the garment as it called for reflection,
whilst five mentioned adapting the garment to themselves and
their taste – making use of brooches and pins, or tying the piece in
different ways.

FIGURE 44
A participant uses a pin to play with
the volume of the shirt (P9 Diary).

Embodiment

As a body (whether human or not) goes through experiences, marks are left on it that can trigger memories of such experiences. In this way, information or knowledge becomes attached to a body as part of its experience in the world (Varela et al. 1991). For example, the creases in a garment can embody movements, posture and spaces. The capacity of embodying external factors, such as the wearer, the designer or the environment (Woodward 2007, Slater 2014), was broadly perceived as affecting participants' relationships with the garments. This embodiment capability (facilitated by the material features of the garment) supported the development of memories and the communicative powers of the piece.

> *Soon I took the shirt out and hung it on the closet door. When I looked at it outside my body I realised it was carrying an expression of time. There was information about the duration and the modes of use. I would look at it now not as a wrapping but as something that testifies about how my day went because of the shape it takes. (P2 Diary)*

> *It was very interesting because the shirt became brown from the earth road. I found it absolutely amazing that it accumulated traces of the way. (P7 Diary)*

> *It is possible to feel the presence of who created it. It holds a presence, some humanity. (P8 Reassessment questionnaire)*

> *As soon as I got dressed I bumped into my friend's boyfriend in the kitchen. He looked at my clothes for a while and asked: 'Do you know Julia Valle?' 'Yes! She made this shirt!' I replied. 'I was going to say that it looks like something she would make.' (P3 Diary)*

Whilst on the one hand an embodiment of the wearer could be perceived in the garment via creative adaptations and marks and creases, on the other, design, fit and challenges in wearing supported the embodiment of the designer. The challenges, in turn, were often responsible for inviting the creative adaptations by the wearer. Marks and stains were pointed out as traces of the experiences had with the environment in a more general sense.

The results of these different types of embodiment were both positive and negative in the construction of a more active engagement between wearer and worn. On the one hand, sensing the presence of the designer provided more knowledge about the making process of

a garment but prevented wearers from implementing more radical adaptations – they understood the garment as a designed piece that should feature the imprint of the designer's 'hands'. On the other hand, the creative adaptations, which made wearers visible in the garments, could either enhance the relationship via a feeling of 'knowing' the garment well or drive to a discontinuation of use when the experimentations were not successful.

BECOMINGS: INTERACTION RESULTS

The investigation has led to three core concepts on the wearer-worn relationship to elicit more active engagement. These concepts suggest further investigation and point out possible topics to be addressed in the design phase. They are: knowledge construction through interaction, memory as a connection enhancer and reflective space to enable change. Similar to the above definitions of spaces of action, these categories cannot be taken as independent but rather as co-dependent.

Building knowledge through interaction
The study has shown that wearer-worn can support the production knowledge on various fronts from the wearer's perspective, from understanding better one's own style to perceiving how the garment was cut by ironing. The data has confirmed that knowledge is prone to be generated through physical interaction and experiences between wearer and worn (care, successful adaptation interactions and embodiment).

Reported outcomes of knowledge gain were: stronger connections between garment and wearer and openness to reflection, both tightly connected to the fact that the process of creating and making the clothes was made visible by either the designer or the interaction between wearer and worn. Added to that, participants suggested a feeling of satisfaction and interest in developing knowledge with the clothes worn, which could, at a later stage, invite more active engagement – such as mending or more radical adaptations between wearer and worn.

Stronger Engagements
Memories are attached to living and non-living bodies as they are experienced and as they experience the world. Not exclusive to garments, or to special articles, memories have been found to support stronger engagements with objects, leading to longer-

lasting relationships (Niinimäki 2010, Mugge et al. 2005, Chapman 2005). Within this study memories also promoted reflections, often supported by the tasks associated with the project, and to the experience of wearing in a more general sense. Different forms of embodiment, as discussed above, supported the attachment of memories to the pieces and their wearers.

Change
Five out of ten participants have reported being more reflexive towards the shirt given and to other pieces in their wardrobe in comparison to how they generally relate to their clothes, as exemplified in the quotations below.

> *Then I started thinking that I put so much effort into using my time wisely, to live a live with more quality but I do not think I do this with my clothes. So I thought it was really good, like a warning, that I need do get more involved with my wardrobe. [...] I have to dedicate more time to my clothes. (P2 Group discussion)*

> *[...] I realised I would like to have more pieces like this. That have meaning, not just for the design or the brand, but because of the story and the comfort. Because we spend a lot of time with the clothes. [...] So what I paid more attention to was the relation I ended up developing with it and that I would like to develop with other pieces too. (P10 Group discussion)*

> *I think it is very nice that one garment makes us think so much while most of what we have today doesn't make us think at all. Why don't we think much about all the other stuff? Is it because you know who did it? I usually use the term 'loving objects', I have tended to enjoy the feeling of having a relation with things, of them having meaning, from food to everything else. (P6 Group discussion)*

Even though this result might look rather positive, considering the overarching research question in this investigation, it is questionable whether this was promoted by the garment or by how it was communicated to the wearers. Here it must be taken into consideration that the intervention was set as a *research* project, driving participants' awareness on the garments and motivating reflection via diaries. In this sense, this conclusion comes more as a question to further investigations than an answer. What are the factors that can suggest reflexive spaces between wearers and their clothes?

NOTES ON
THE REASSESSMENT
INTERVIEWS

The reassessment interviews became relevant after the completion of the second project and were implemented to the first study two years after its deployment. Due to distance issues, this study was done via an open-ended digital questionnaire. Despite the scarcity of responses to these questionnaires, four replies out of the total ten, two points emerged concerning experimenting with and generating knowledge about the shirt, whilst others confirmed previous statements found in the diaries and group discussion. From the statements it became clear that as time passed wearers clarified the role the piece played in their wardrobes, and became less experimental when trying to wear the piece in different forms. In regard to enhancing knowledge on the garment construction, which was previously related to the practice of ironing and to traces left by the designer on the garment, other perceptions were added. All respondents stated that they believe they gain more knowledge about the garment when trying it out with other clothes. Added to that, two of them said that feeling the garment on the body also enhances this understanding. Of the four respondents, three still wear the shirt, whilst one has passed it to her mother with slight alterations to the armholes.

5.8

Conclusion
to Dress(v.)

The first part of this experiment contributes to overcoming a lack of academic production that looks into the works of fashion designers, especially from a practitioner viewpoint (Finn 2014b). It describes how fashion designers can use external or personal sources of inspiration to develop a process in clothing design. Though very specific to my own practice, especially in regard to how final outcomes are not previously sketched, the note taking method hints to the relevance of previous experiences on the practice through iterative development of a design or approach. In this way, the study is able to expose "the reflections and refractions of multiple selves in contexts that arguably transform the authorial 'I' to an existential 'we'" (Spry 2001, 711). The subjective work, thus, when explored and exposed from different perspectives can be used to conceptualise design work in a more general sense.

The findings from the wardrobe interventions have provided the study with concepts to be discussed in the next experiment. They are used to further discuss the level of engagement in wearer-worn relationships, through an iterative process. The activities of care and knowledge building appeared as relevant in the construction of more active relationships. They bring to light routine practices such as ironing, washing and trying on clothes as spaces to be explored in design approaches.

It was noted that the 'curious' parts of the shirts in the Dress(v.) project, such as asymmetry in the pattern, invited curiosity from the wearers, taking them to a space of learning about or imagining the processes of making garments. This finding brings to the discussion how frictional design (Laschke et al. 2015) can cause different effects in the realm of clothing and fashion compared to other fields of design. Friction, here, did not always impact negatively on the relationship between clothes and people. Rather, it invited more engaged interaction.

Even though it was reportedly appreciated, the embodied presence of the designer in the garment has at times suppressed wearers from taking more radical actions with the clothes, such as solving challenges found in form and colour via alterations and adaptations. According to participants, moments of caring for garments and experimentation or trying on clothes supported building two types of knowledge. The first is found in the process of subjectification as expressed through clothes. This not only supports previous studies (Davis 1992, Kaiser 1990) but also makes space for discussing the role of material affect in the relationship – the knowledge growth takes place in embodied experiences with the clothes. In articulating processes of subjectification under the lenses of affect, the agentic roles of matter, i.e. clothes, becomes clear. The construction of the subject reported by participants was not 'confined to meaning, cognition or signification' (as suggested by Blackman (2012) and discussed in Chapter 3). Before reaching the realms of cognition, such processes took place in the bodily experiences between wearer and worn.

The second type of knowledge building related to clothing production processes and techniques. This observation suggests that increasing open-endedness in garments might encourage wearers to play more active roles in the relationship as well as look at garments as less fixed objects. According to von Busch (2008), fashion designers can take new roles such as that of facilitating knowledge gain on fashion, as either a system or a craft, enabling individuals and communities to engage more actively as wearers and consumers (von Busch 2008, 33).

Though the practice in this dissertation has a less community-centred approach than the projects reported by von Busch (2008), and carries the knowledge on making more subtly, it shares the interest in bringing agency back to the wearer and acknowledging the agencies held by wearable objects.

This first experiment has shown that care practices (such as ironing and washing) can be explored as opportunities to invest in building stronger wearer-worn relationships, adding to previous studies in the field (Niinimäki 2010, Mugge et al. 2005). This finding again highlights the importance of bodily interaction in the path towards more active engagements. It indicates the feeling of novelty as relevant in sustaining wearer-worn relationships longer, which was stated as a shared feeling among participants. This was restated by the fact that the beginning of the relationships, where wearer and worn are still in stages of adapting to each other, is exactly where most of the creative and engaged action takes place. The findings from Dress(v.) have thus suggested exploring spaces of knowledge construction and sparks of agency through curiosity, open-endedness and delicate disturbance by means of form and embedded novelty. With the first project, despite a desire that the clothes would 'promote' change in how they are related to, what was achieved was more a greater sense of understanding of the processes of making garments. This unfulfilled aspect of the inquiry, thus, demanded a second project in which it could be further explored.

The empirical findings of Dress(v.) pointed to crucial points in the use of interventions as a design research method for investigating wearer-worn relationships. A smaller point to note was the presence of the designer in the discussion group, which might have led to a more positive overall tone than if a mediator had been appointed. Another relevant need for improvement was found in the time frame given to participants to report their experiences, as many did not wear the shirt as often as expected by the researcher. This demonstrates that when entering the realm of fashion design, cultural probes-inspired projects demand different interaction time frames than other designed objects to allow experiences to take place and relationships to develop. In the next chapter, the unfoldings of Dress(v.) are explored and iterated in Wear\Wear, the second experiment in this research project.

6

Experiment 2:
Wear\Wear

THE PRACTICE OF WEARING CLOTHES speaks of expressing cultural and individual identities, of a symbolic system often called fashion, and equally of protection, shelter and survival. At the same time the verb to wear carries intrinsically with it the notion of time – as all kinds of matter wear and show signs of ageing – and of a process of constant becoming, as both wearer and worn embody experiences in their physical forms. The Wear\Wear[37] project aims at bringing into discussion the life of clothes through real lived experiences, as they come in (and with) our ways as obstacles and surprises[38].

This chapter follows the structure of the previous, starting with a brief introduction on the topic discussed and the aims of the project. It continues by exploring and descriptively exposing the creative process and its outcomes. The second part of the chapter focuses on the wardrobe interventions, how they were deployed and the findings from the study.

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The use of the backslash (\) in the name of Wear\Wear was adopted from programming language, in which the glyph '\', an escape character, denotes that the following contents should be treated especially within that context. In the project, the glyph is used to stress the duality of the word 'wear' which can be related to both dressing and showing signs of time.

38
Parts of this chapter (including texts and images) have been previously published in Valle-Noronha (2019); Valle-Noronha and Wilde (2018); Valle-Noronha (2017a); and Valle-Noronha (2017c).
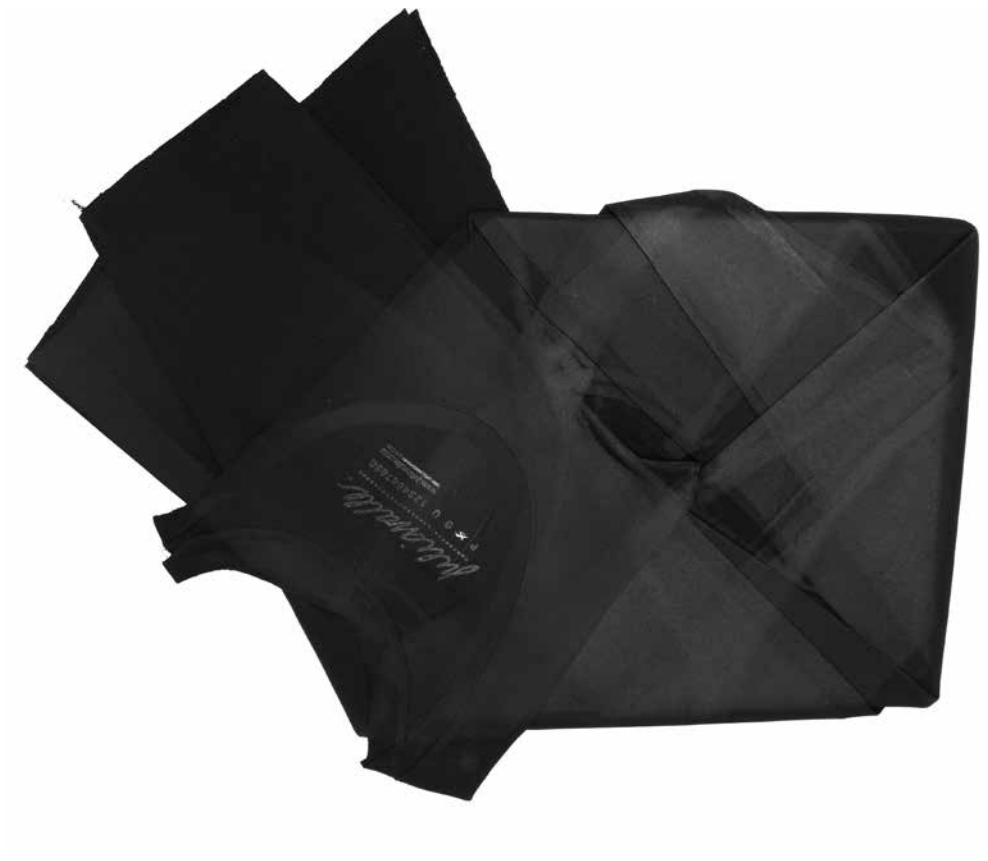
FIGURE 45
Wear\Wear Dress.

6.1
Introduction

To put on a piece of clothing – 'to wear' – is to describe a practice/act of being dressed but also a modality of becoming in clothing. (Gill and Lopes 2011, 310)

Cast aside by the historical emphasis on the social roles of fashion, everyday engagements between wearer and worn have comprised a little-explored space in fashion studies and fashion research (Cwerner 2001, 79). Moving beyond the utilitarian and symbolic values of clothing, how do the experiences of wearing take place in time? Furthermore, how do clothes and wearers evolve through time? Speaking of materials more generally, Ingold (2007, 7) states that while 'immersed' in materialities of all sorts, we act and transform them through different interactions, due to which materials – including our own bodies – are in a constant state of change. Gill and Lopes (2011) have invested in bringing 'time' to research in wearing, testifying to the importance wear marks hold on worn clothes. The time of wearing clothes, as suggested by Gill and Lopes (2011) "is a mark or lived-in expression that subverts the independent agent or object. It brings into relation the artefact and its contingent symbolic, material, and temporal dimensions" (Gill and Lopes 2011, 311). In that sense, they point to the twofold nature of our engagements with the things we wear over time. As a person experiences clothes on her body, she affects and is directly affected by them. Some examples are how our bodies change from the constant use of a piece, how we build our identities or how allergic reactions to dyes or fibres can change the surface of our skins. However, at the same time we promote changes in what we wear – by symbolic embodiments, undoubtedly, but also physically by adding creases, folds and signs of wear. Sampson (2017) broadly discusses how these two entities (to which she adds the maker) are mutually affected by wearing experiences and suggests that through such experiences bodies are expanded beyond the limits of the skin.

The need to attend to how time is expressed in everyday engagements with clothes is projected in the findings of Dress(v.). Through participants' reports arose the discussion that clothes may hold a time of their own, which is not always connected to the accelerated pace of the fashion system, but rather to the entanglement of the materiality of the garment (as in how long does a garment 'live') and the practices of making and wearing. In response to these findings, Wear\Wear takes time as a space to be explored in fashion design. The

task continues efforts seeking to better understand how designers can foster active engagements between wearer and worn. Could designers, through experimental approaches to fashion, propose a possible course of action to overcome the given perception of artefacts as closed and invite interaction and awareness of expressions of time?

This chapter exposes and explores the Wear\Wear project, starting with its motivations and aims, and provides a descriptive account of the design process. Next, it presents how the interventions were deployed and investigated. The chapter concludes with the findings that stem from the investigation.

6.2

Experiment aims

I love the shirt just the way it is. […] And I believe I wouldn't change anything about it at the moment. Maybe in about two months' time I would like to do something. To get this feeling of a new piece in my wardrobe again! (P1 Dress(v.) Group Discussion)

The quotation above was drawn from the group discussion in Dress(v.). In it, participants generally and enthusiastically agreed that new clothes bring excitement to their wardrobes; thus alterations in a piece would be welcome some time after the use phase has begun. This statement is supported and discussed not only by the experiment participants, but also by many theorists and philosophers interested in how individuals and things relate. Phenomenology philosopher Martin Heidegger's (1977) reflections on fashion bring enlightenment to the discussions on the relationship with 'the new'. He speaks of the contemporary body in a constant state of expectation for the new concerning clothing. This newness, suggests Patrizia Calefato (1988), goes beyond pure novelty. It includes reinterpretations and individuation, which are natural to our construction of selves through fashion. This places fashion in a very particular space within consumer culture – one that fully, and essentially, incorporates notions of constant and mutual becomings between wearer and artefact. According to studies, new clothes offer feelings that old ones cannot. Pan et al. (2015) discuss the role of newness in fashion in a broad sense, pointing out how the constant quest for the new in the fashion industry is reflected in consumption, differing broadly from other approaches to artefacts. If the feeling associated with new pieces is something so cherished, perhaps replicating or mimicking it in not-

so-new clothes could work as a design brief towards more active engagements, sustaining the roles of reinterpretation and identity building (Calefato 1988) without the undesired affordances of short-lived relationships (Mugge et al. 2005)[39].

The questions and discussions presented above inspired the development of a second experiment in this research. It is centred on the idea of how experience is made visible in garments through wear and what is the role of the worn, experienced garment in the face of human interest in the new (cf. Gill and Lopes 2011). Wear\Wear questions the pragmatics of the joyfulness associated with new clothes through a provocative approach to encourage more reflexive and active wearing. In the project, 'surprise' is suggested as a method for bringing change to garments through time and promoting conversational wearer-worn relationships. As the changes are manifest, the project expects to raise awareness of the agency of clothes, or in other words, of how clothes are being constantly reconfigured in form and meaning as we relate to them and the world. Interested in exploring consumer relationships with designed objects, researchers in the field of design have noted surprise as a driver of positive perception of products (Ludden et al. 2012, Vanhamme and Snelders 2003). Despite covering different objects, such as mugs and furniture (Ludden et al. 2012) and yoghurt packaging (Vanhamme and Snelders 2003), no studies have investigated the particularities of the effects of surprise on clothes. Whilst different surprises are said to promote different experiences (Desmet 2002), Ludden et al. (2012) discuss the possibility of 'discovery surprises' (in contrast to first-encounter surprises) being longer-lasting and more rewarding to users. Additionally, 'surprise' has been suggested as a relevant factor in novelty emotions (Scherer 1988) that can lead to strengthening and weakening of relationships between humans and designed objects. These studies point to hidden features, or changes in time, as an opportunity to be explored in product design. Despite the differences between product design and fashion, this is seen as a fruitful space of investigation to unlock more active relationships with clothes. Clothing and fashion design embraces a series of specificities that must be accounted for, such as how strongly we relate to our public images through clothes and the intimate encounter between a garment's textiles and our skin's sense of touch. So what remains valid for the field of fashion and how can we explore surprise to bring excitement and action to practices of wearing?

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Parts of this section were previously published in Valle-Noronha (2017a) on pages 520–523, and Valle-Noronha (2017c), on page 4.

A recent study by fashion and sustainability researchers Vibeke Riisberg and Lynda Grose (2017) advocates designing clothes that 'evolve over time'. In their study, they investigate works of designers who create clothes that afford reuses and reinterpretations and propose them as a means to increase longevity. Their study is very much in line with the proposal of the Wear\Wear experiment, despite differences in how the design decisions shape the final forms. In the projects reported and analysed by Riisberg and Grose (2017) the changes through time are facilitated by the designer and take place with the wearer's action. In this sense, they allow wearers and designers to hold similarly active parts. In Wear\Wear, on the other hand, these changes are facilitated by the designer, but manifest in unexpected ways (disclosed next), situating the action as much on the wearer as on the worn.

Apart from exploring time as a space for design, the experiment aims to iterate other findings from Dress(v.) in regard to the designed outcomes. It reaches for subtle open-endedness, in the expectation of promoting beyond a reflexive engagement, while also achieving more physical interactions. The next section describes the design process from generating the information used in the project to the finished pieces. Next, the deployment is detailed and findings from the experiment are discussed.

6.3
Design process
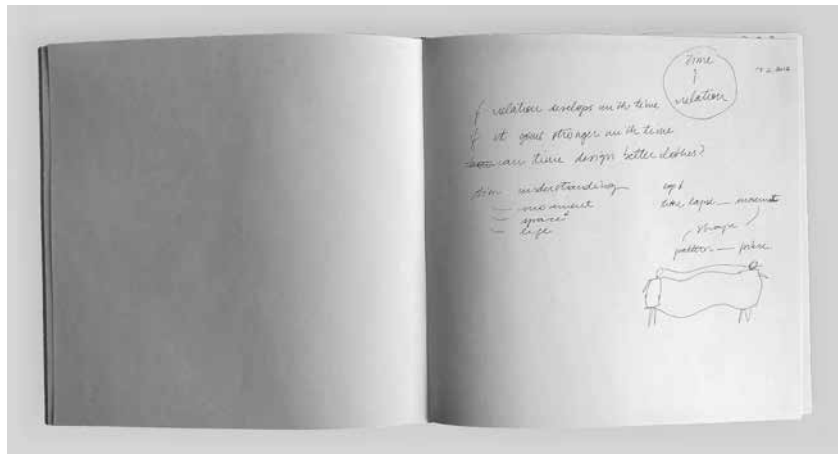
FIGURE 46
Process diary for Wear\Wear: the first page of the diary with the first questions that arose on time and design. It reads: 'If relationship develops with time, if it grows stronger with time, can time design better clothes?'

In continuing the explorations of Dress(v.), Wear\Wear draws visual and conceptual information from an autoethnography-inspired study to create clothing[40]. As in a process of iteration, it explores how my personal relationships with the clothes I wear evolve over time and whether there are any particularities in the relationships with more experimental clothes. The project makes use of a research method centred on experience in order to understand levels of attachment to and dialogue with my own garments and questions what makes them dear, active, an experience worth caring about. As a result, it is expected that the pieces can bring surprise to wearers in the course of time, exploring the idea, suggested by Dress(v.) participants, that new clothes in a wardrobe bring great excitement.

> *Make a garment out of my relationship with a garment?*
> *(Diary entry, 3rd March 2016)*

Similarly to Dress(v.), this project starts with a gaze into personal experiences. Here, instead of reflecting on short duration events, such as the moment of changing clothes, the focus is given to how relationships evolve with time (illustrated in Figure 47). The UX Curve[41] method (Kujala et al. 2011) was used to support this reflection. The method, initially developed to help the mobile phone industry "improve customer satisfaction and loyalty" (Kujala et al. 2011, 473), holds in its core the belief that experiences with artefacts need time to evolve and consolidate. In order to collect information on these experiences, participants in that study completed a set of curves. The curves explored how users perceived and experienced mobile phones in regard to "attractiveness, ease of use, utility, and degree of usage" (Kujala et al. 2011, 477). Despite speaking from the field of user experience with digital objects, Kujala et al. (2011) share with this research project the criticism against the evaluation of short and momentary experiences through, for example, questionnaires. By focusing on relationships as they are perceived

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The choice of this method had a second aim. In late 2015 I did a study on adapting UX curves to clothing in order to test their feasibility in investigating wearer-worn relationships. During the study, I felt it was necessary to apply the method to myself so I could gain a better understanding on how it works, what it can tell and what it cannot tell about such relationships. The results of that study, though not included in this doctoral research project, were meaningful for discussing the idea of 'learning to wear' (Valle-Noronha et al. 2018) – an idea that was consolidated in this dissertation as the concept of learning through wear.

40
Parts of this section were previously published in Valle-Noronha (2017a) and Valle Noronha (2017c). Particularly, material description is reproduced with little alteration from Valle-Noronha (2017c), on page 6. Diary excerpts, when reproduced, remain unchanged.

in a fixed moment in time, such evaluations leave aside much of the content that explains how relationships evolve (Kujala et al. 2011, 474).

Interested in collecting data on my own relationships with the things I wear, I adapted and applied the UX Curves method to an autoethnography during a thirty-day period. The Figure 47 illustrates the clothing pieces that were used during the period of a month (February-March 2016) and their respective curves. A UX Curve was completed for each piece, collecting information on my relationship to clothes from the moment of acquisition until the moment of the study in regard to (1) feelings of comfort, (2) how they are perceived visually, (3) the frequency of use, (4) their versatility to be used in different situations or with different pieces, and (5) overall relationship and attachment. The vertical axis represents a scale of quality from 1–5 of the five aspects of clothing cited above and the horizontal axis represents how they evolve in time.

The interpretation of the resulting curves and accompanying texts show that the most worn pieces are not always the most cherished ones (especially in critical weather conditions, such as during February in Finland). Instead, the most frequently worn pieces were warm base layers, which had more of a shelter than style function. In addition, it became clear that experimental pieces often go through moments of 'love and despair', with oscillating curves especially concerning use frequency and versatility. The descriptions of these pieces showed that rediscovering idle clothes through a new form of wearing brought them back to a more active part of the wardrobe or the passing of someone dear in the family has given new meaning to an inherited or gifted piece. This observation has led me to select the most varying curves to be used as input for the pattern cutting activity. At this stage, it was still unclear how the design process would unfold.

While investigating the curves in search for something that could inform the creation of garments the design process goes back and forth. I seek to explore the curves beyond their forms, considering the values and meanings they carry, but the results are unpleasant in what they offer for the pattern cutting process. A simpler and more literal approach to adapting the curves to the flat patterns is then chosen. Within each selected UX Curve, two aspects (and their lines) are picked. The lines are placed in parallel and delimit the contour of a pattern. This process is described in the diary quote below and illustrated in the diary spreads that follow.

FIGURE 47
Eighteen out of the twenty-five pieces used during a thirty-day
period that comprises the autoethnographic study. The image shows
the clothes and their respective curves (placed above the image).
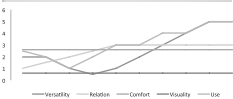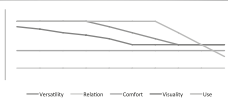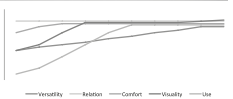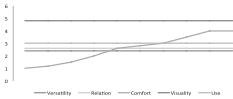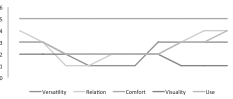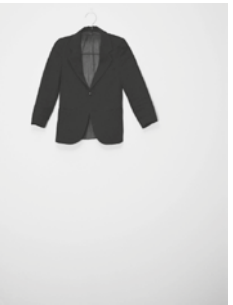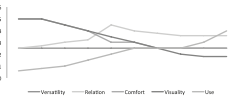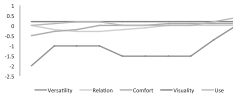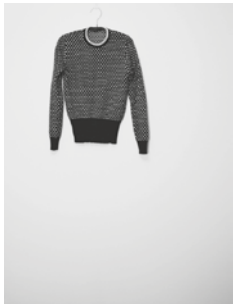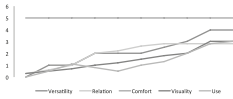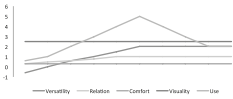
I come back to the studio and stare at the piece [on the dummy].
I do not like it at all. […] I think of simplifying the patterns. [Will]
get back to the curves and stare at them instead. […] It seems
that [using the curves more 'literally'] would be an interesting
way to have the wearers perceiving it [the curves] more
physically than just in an abstract way. In the previous project
they did mention that while caring for the piece they could gain
understanding on the construction/pattern cutting.
[…]
— use only ONE *curve for each piece*
— keep it simple
— make the curves clear on the piece
— where can I add surprise? ——— Try to have at least
1 surprise happening on each piece. Surprises could happen
with maintenance/space. (Process Diary, 22nd April 2016)
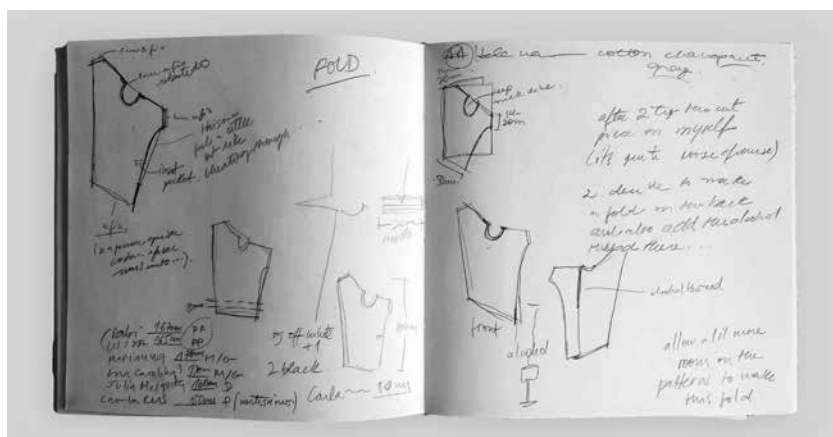
FIGURE 48
Diary spreads. The image illustrates the process of reflecting on
where and how changes would be effected in the piece (in red).

The most varying curves chosen (thus, the most fluctuating or actively
engaged relationships) proved to be a positive choice at this point,
as they yielded fewer straight lines to be explored in the patterns.
In the first stage, shapes were sketched in the process diary, to later
be scaled and transformed into flat patterns (see Figure 50). The flat
patterns were first drafted in paper and then tested in fabric. The
pattern cutting process, informed by shapes previously determined
by the autobiographical study, resembles the 'contour draping' and
'against the body forms' processes (Ræbild 2015, 239–241 – described
in section 5.4, Chapter 5). The 'contour draping' process suggests
that a shape, previously determined, is used as a base for the pattern
cutting process.

The following images illustrate the process more thoroughly – from how the curves were used in the making of the flat patterns, to the curve selection stage and the finalised outcomes.

FIGURE 49
Sketches, notes, curves, fabric samples and participant's measurements organised on the studio wall. These materials are used as guidance throughout the design process.
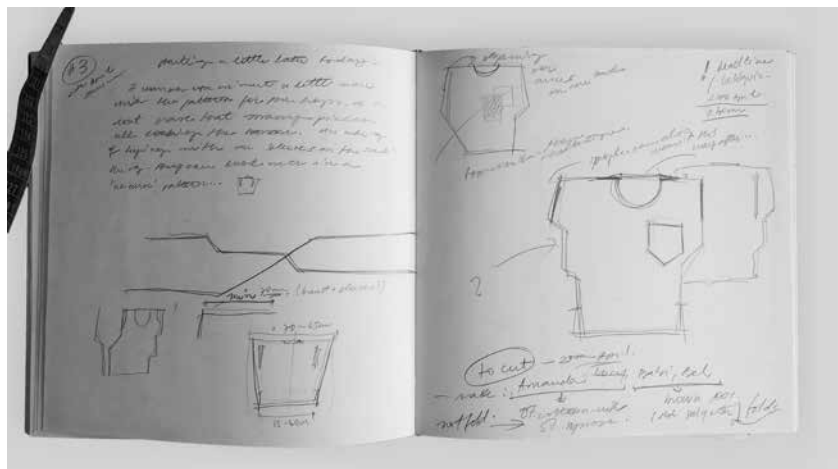
FIGURE 50
Diary spreads. The image shows how the user experience curves were transformed into the outlines for a blouse pattern.

During the process of making the clothes, my body as a maker makes itself present again in how previous experiences are rescued, how the environment affects the design decisions or how the body feels the test pieces:

> *After I try the cut piece on myself [...] I decide to make*
> *a fold on the back and add the alcohol thread there.*
> *(Process Diary, 27th April 2016)*

> *I did not want to have them [the UX curves] so literal [in the*
> *pattern cutting], but it seems that it would be an interesting*
> *way to have the users perceive it more physically than just in*
> *an abstract way. In the previous project they did mention that*
> *while taking care of the piece they could see some of the pattern*
> *cutting [outline]. (Process Diary, 22nd April 2016)*

> *[...] I also make a dart on the shoulder that I always make, so the*
> *fabric falls better on the body (Process Diary, 21st April 2016)*

The excerpts confirm the points that rose in the previous experiment (see section 5.3, Chapter 5) on how the body of the maker is physically embodied in the produced pieces. This is certainly quite different in a commercial process, where the aims are not always directly connected to the personal interests of the designer. In an experimental setting, though, they become more relevant and visible.

In order to design clothes that could bring surprise to wearers over the course of time an investigation on materials and methods was needed. As these surprises should not be apparent at first, I aimed to select materials that have been thoroughly tested in the past and that have been taken into industrial and research use. The choices were based both on research in trimmings and textiles shops and previous professional experiences with the materials. They were tested through a series of experiments in which resistance, reaction to different fabrics and visual outcomes were evaluated. The chosen materials are described below:

— Ultra Violet (UV) Reactive Ink: applied to clothes as surface ink, changes in colour when under sunlight. Available in various colours. In Wear\Wear the colour used was blue (Figures 51 and 52).
— Polyvinylic (PVA) Thread: Thread made of polyvinylic alcohol. The thread melts into a gel form and dissolves when in contact with water. Heat accelerates the process. Available only in white colour (Figure 51–53).

— PVA Non-Woven Fabric: Same as above, in the form of a nonwoven fabric, resembling a basting fabric in texture.

— Thermochromic dye and ink: applied as a reactive dye or surface ink, reacts to temperatures by changing colour. Changes occur at 40°C. Available in various colours. In Wear\Wear the colour used was black.

FIGURE 51
Dress I, in grey, before and after changes due to seams using PVA thread and UV sensitive dye.

FIGURE 52
Blouse before and after changes due to seams using PVA thread and UV sensitive dye.

Whilst PVA effects a permanent change in the garment (i.e. the dissolved PVA thread or fabric will not return to its previous state), reactive dyes effect temporary changes (i.e. after exposed to heat or sunlight the materials return to their initial colour). PVA materials have, for decades, been used as a tool to provide support to embroideries in light fabrics and facilitate finishing in haute couture processes (Ohmory et al. 1993) and more recently in medical applications. These were rather familiar to me from previous work at an haute couture atelier. In this project PVA was used exclusively to surprise wearers, by promoting

permanent changes in clothes. The visual appearance of the clothes could be radically changed by the use of PVA as a textile in parts of a garment (e.g. pockets) or as sewing thread to connect parts of the piece together (see Figure 53). Similarly, UV reactive inks and thermochromic dyes have been explored intensively in the 1980s, with applications ranging from t-shirts to pens and mugs and more recently in fashion (Kooroshina et al. 2015). Here a more subtle approach is intended, using the dyes in simple brushstrokes on the pieces (Figures 51 and 52).

FIGURE 53
Dress I before and after changes due to seams using PVA thread.

Intending to add an extra layer of surprise and formal expressiveness to the pieces, they were folded[42] and heat pressed under 220ºC for sixty seconds[43] (Figure 54). In order for the pleats to hold their visual aspect after use and laundering, all folded clothes were made with polyester fabric. This technique has been widely explored by fashion designers and artists, most prominently by Issey Miyake with his 'Pleats Please' and '132 5' collections (Miyake 2017). Alternatively, artist-architect Elizabeth Diller creatively and critically explored folding shirts in 'Bad Press' (Diller 2010; SC+D 2018) to discuss the domestic labour of ironing – a discussion very present in Dress(v.)'s group discussion. Figure 54 depicts the fabric before and after the heat press.

The flatness of the piece when laid folded is counterpointed by its accidental tridimensionality when unfolded. The sharp creases created by the heat press make the piece respond with protruding forms when opened or worn.

42
The folding pattern (see Figure 55) is transposed from how some Asian cultures fold plastic bags before disposal so that they occupy less space in the trash bin. There is, clearly, a direct – and critical – reference here to how clothing is seen as perishable by many wearers.

43
A first batch of pieces was heat pressed at 250º for fifteen seconds. Tests of resistance and final visual effects with the fabrics have suggested that a longer exposure under lower temperature would preserve better the flexibility of fibres while providing optimum glossy effect.

FIGURE 54
Folding a dress for the Wear\Wear experiment. The picture shows
the moment before (left) and after the heat press (right).

BACK OF DRESS

FINAL FORM
READY TO BE
HEAT PRESSED
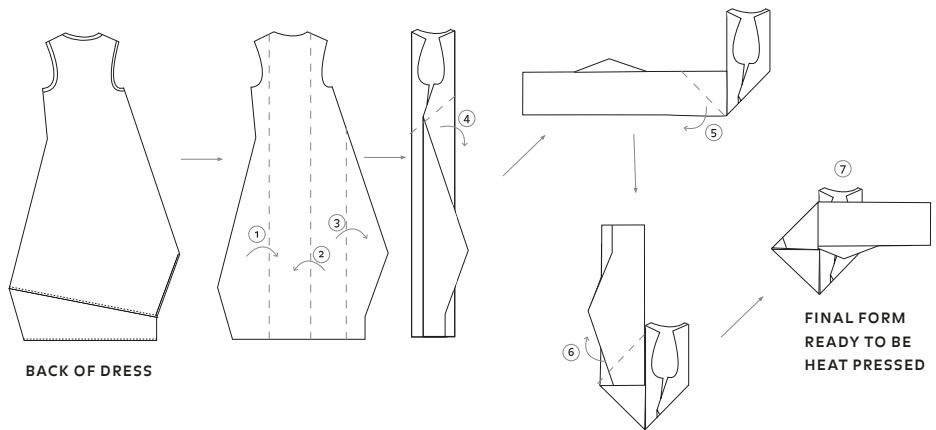
FIGURE 55
Instructions for folding the pieces before heat-press. All pieces were
folded following the same instructions, regardless of their size/length.

The combination of folding and heat pressing was also responsible
for setting the tone of the relationship from its beginning. When
received, the garment had not yet been unfolded, and a slight
adhesion between the layers of fabric (result of the heat and pressure
applied to the polyester material) provided a subtle resistance to
unfolding. In the process of 'opening' the piece, the pleats would
create different tridimensional behaviour, adding to the idea of
surprise. Added to that, when folded and pressed, the garment marks
itself on its surface (see Figure 54, image on the right), pointing out
both the relevance of traces of wearing in clothing items and well as
their affecting agencies.

FIGURE 56
Dress I in Wear\Wear worn by participant in the experiment.
Photo: Estúdio Tertúlia

FIGURE 57
Dress I in Wear\Wear worn by participant in the experiment.
Photo: Estúdio Tertúlia

FIGURE 58
Blouse I in Wear\Wear worn by participant in the experiment.
Photo: Estúdio Tertúlia

FIGURE 59
Dress ii in Wear\Wear worn by participant in the experiment.
Photo: Estúdio Tertúlia

6.4

Wear\Wear
outcomes

FIGURE 60
Blouse I in Wear\Wear worn by participant in the experiment.
The image shows detail of print on shoulder that becomes
blue when exposed to uv light. Photo: Estúdio Tertúlia

The creative process of the project took place between February and
May in 2016, with a longer timeframe dedicated to testing the material
and its possible applications. This resulted in four designs: a midi
dress, a short dress and two blouses (Figure 61). In Wear\Wear,
garments were designed with embedded 'surprises' that would
manifest through time as practices of care and experience as changes
in temperature and sunlight intensity took place. These changes were
expected to raise awareness and reflection on the fact that garments
are not fixed objects, but rather naturally evolve and change with
time. All the pieces were created with the aim that they could also
express different forms regardless of the human body, an artifice
permitted by the material properties of the polyester conformed by
the pleats under a heat press. In interaction with the wearers, they
would again gain new forms of physical expression.

The table below summarises the changes in the pieces. A thorough detailed description is found in Appendix 14 and technical drawings in Appendix 15.

	BLOUSE I	BLOUSE II	DRESS I	DRESS II
MATERIAL	100% CO	100% PV	100% PV	100% PV
COLOUR	White	White	Black / grey	Black / grey
SURFACE PRINTS OR TEXTURES	Transparent print on right shoulder	Transparent/black print on right shoulder, fold texture all over the piece.	Fold texture all over piece. Transparent print on grey colour variant.	Fold texture all over piece. Transparent print on grey colour variant.
OTHER DETAILS	Outer pockets.	Pockets, inner and outer. Outer pocket in different fabric.	1 m elastic band attached near hip line with 3 cm seam.	Big pleat in 'soleil' shape on the back, starting from neck line (0 cm) growing to around 18 cm near waistline.
CHANGES	Applications of non-woven PVA front pocket, 5 cm side seam near bottom hem and 2 cm shoulder seam sewn with PVA thread near the edges. UV reactive dye on shoulder.	Outside pocket made of non-woven PVA, inner pocket in polyester crepe, UV reactive dye print on shoulder. On brown colour variation, UV reactive dye was substituted by black thermochromic ink.	Application of around 20 cm extension piece on hemline, 12 cm left side seam and 2 cm shoulder seams sewn with PVA thread.	Pleat on back, 12 cm side seam and 2 cm shoulder sewn with PVA thread. No localised prints.
TECHNICAL DRAWINGS	See Appendix 15			

TABLE 12
Short descriptions of pieces in Wear\Wear[44]

In referring to Flusser's understanding on design as obstacles (1999, 58–59), the experimental patterns can be considered as an obstacle that comes in the way of the wearers, with which they must engage in dialogues and interaction to figure them out. Unlike mainstream fashion, the clothes offer a certain resistance to the human body; they are not given or expected to behave in a predetermined manner. The looseness of shapes, the stubborn pleats, the protruding volumes are material qualities of the pieces that demand engagement. The implication of such features is that the clothes become open-ended and are expected to promote enactive knowledge (Varela et al. 1991), based essentially on the experience and interaction. As we build expectations on what the findings will tell, the next section describes how this second experiment was deployed, before exploring and interpreting the experiences with Wear\Wear pieces.

44
This table was previously published in Valle-Noronha and Wilde (2018), with slight modifications.

FIGURE 61
All pieces produced for Wear\Wear's wardrobe interventions.

6.5
Intervention

The second application of the wardrobe interventions was built with pieces from Wear\Wear. This section describes the sampling of participants and how the deployment unfolded.

SAMPLING PARTICIPANTS

The second experiment had participants located both in Helsinki, Finland (home of Aalto University) and Belo Horizonte, Brazil, aiming at a more diversified cultural background and examining how it would manifest in the relationship with clothes, a question raised by peers in the first study. Again, the call was made in social media and attracted forty-two responses through another brief questionnaire, out of which thirty-four were located in Brazil and eight in Finland. This clearly reflects my reach in different social circles, which are broader and better consolidated in Brazil than in Finland. All of those located in Finland were invited to participate in the study, together with the first fifteen located in Belo Horizonte. This time, the invitations were restricted to those who did not previously participate in the study (even though two individuals were interested in participating again), but no restrictions were placed in regard to previous experiences with my production in clothing design. Still, from the total twenty-two participants, only six have had previous experience with the production. Another questionnaire followed, asking for more specific information about personal taste, size and contacts. One of the invited participants did not return the diary, leaving a total number of twenty-two participants. In the final sampling, the twenty-two participants were women, of six different nationalities, ages between 27 and 82 (as in May 2016) and, generally, with a similar professional background as in the previous experiment (Table 13).

PARTICIPANT	AGE	PROFESSIONAL BACKGROUND	MANNEQUIN SIZE	LOCATION
P1	66	Urbanist	40	Belo Horizonte
P2	28	Fashion designer	36	Belo Horizonte
P3	29	Stylist	40	Belo Horizonte
P4	43	Pianist	36	Belo Horizonte
P5	40	Architect	40	Belo Horizonte
P6	33	Translator	48	Belo Horizonte
P7	32	Visual artist	36	Belo Horizonte
P8	36	Journalist	42	Belo Horizonte
P9	51	Fashion designer	46	Belo Horizonte
P10	30	Communicator	42	Belo Horizonte
P11	33	Psychologist	36	Belo Horizonte
P12	35	Visual artist	40	Belo Horizonte
P13	33	Producer	40	Belo Horizonte
P14	31	Graphic designer	38	Belo Horizonte
P15	82	Retired	44	Belo Horizonte
P16	28	Musician	40	Helsinki
P17	28	Graphic designer	40	Helsinki
P18	35	Interaction designer	42	Helsinki
P19	44	Researcher	36	Helsinki
P20	39	Industrial designer	38	Helsinki
P21	29	Researcher	38	Helsinki
P22	27	Designer	38	Helsinki

TABLE 13
Wear\Wear Participants Demographics

DEPLOYMENT

The deployment followed the same basic structure as in Dress(v.) with slight modifications to better fit a study that looks into wearer-worn relationships. As previously mentioned, the short duration of the first study pointed to the need for a longer diary-assisted phase. Added to that, a reassessment interview was included in the method. Below the particularities in the deployment of the wardrobe interventions in the Wear\Wear experiment are detailed:

1   Wardrobe Intervention kit deployment
A total of twenty-three kits were deployed to participants in Wear\Wear (Figure 62). They followed a similar structure as in Dress(v.), with the exception of the initial photos, which were not taken this time. The deployments took place at my atelier (for the

participants in Brazil) and in a dedicated room at Aalto (for Helsinki participants). All participants were informed of possible changes in their garment over time, but no details were given. In any case, they were assured that the pieces would not change so drastically as to lose their wearability.

FIGURE 62
Deployment kit for Wear\Wear containing a garment,
a diary, an informative leaflet, consent of participation
and researcher's personal card.

FIGURE 63
Image of a wardrobe interventions deployment, taking place in
Belo Horizonte, May 2016, depicting the setting where the clothes
were delivered. In the image, the designer-researcher talks to
one of the participants (sitting behind the folding screen).

2   Interaction phase

Building from Dress(v.), the diary-assisted interaction phase was
extended to a period of three months.

3   Group discussion

The two group discussions in Wear\Wear were mediated by an
external mediator, doing research at doctoral level within the field of
Arts and Design. They took place in my own atelier (in Belo Horizonte
– Figure 64) and at a meeting space within Aalto University. The
mediators were given instructions on the general interest of the study
(agency, change, time), but were asked to note down keywords that
arose during the participants' talks so the topics could be further
discussed in the group discussion.

FIGURE 64
The picture shows a group discussion for the Wear\Wear
project Belo Horizonte. On the day, the pieces received were
brought to the space and supported the discussion.

4 Reassessment interviews

Reassessment interviews were undertaken one year after the group
discussions. In total, ten out of the twenty-two participants were
interviewed individually in their home for about 50 minutes. The
interviews concentrated on the wardrobe and the clothes deployed,
trying to pull from participants the kind of 'voice' the clothes they
received might have and collecting visual records of the garments
in their present state. Participation was smaller than in the original
study, as some participants had moved to another city/country or were
away on holidays at the time.

6.6

Wear\Wear
data set

The table below summarises the data collected and produced throughout the study, including the design and wardrobe interventions. The data interpretation followed the structure detailed in Chapter 4, under section 4.5.3

PROCESS	DATA SET	DESCRIPTION	METHOD	AMOUNT OF DATA
Practice	Researcher diary (design practice)	Diary kept during the design process. The content varies from personal reflections to technical drawings. The data was constantly collected.	Auto-ethnography	One 50-page diary (partially filled)
Practice	Researcher diary (wearing experience)	Diary kept during 30 days on attachment to clothes. The diaries follow the structure of UX curves (Kujala et al. 2011) and comprise pictures, curves and written text on personal relation to clothes in regard to use frequency, comfort, versatility and aesthetics.	Auto-ethnography	25 UX curves completed accompanying 25 pictures of clothes.
Practice	Researcher photographs (design practice)	Photos taken during the design practice, categorised as pre-set pictures (taken at predetermined times) and spontaneous pictures. They were used to investigate the design process.	Auto-ethnography	Over 200 pictures + 1 video
Wardrobe intervention	Dialogue (deployments)	Meetings in which the wardrobe intervention kits were deployed. They were audio recorded and transcribed. It was assured that the information given was consistent.	Wardrobe Intervention	24 meetings recorded, approx. 12 h of audio, partially transcribed.
Wardrobe intervention	Participant diary (interaction phase diaries)	Diary kept by participants. The diaries were completed during three months and divided by entries 1–7.	Performed auto-ethnography via Wardrobe Intervention	22 returned diaries (with 72 pages each)
Wardrobe intervention	Group discussion	Group discussion between participants, led by a mediator. Audio recorded, some pictures taken by the mediator. No video recording (allow comfort). It aimed at discussing topics from the experience phase. They were fully transcribed, translated and coded.	Wardrobe Intervention	BR GD: 1 h 49 min + 9 images (8 participants)
				FI GD: 1 h 22 min + 3 images (6 participants)
Wardrobe intervention	Reassessment interviews	Audio recorded, transcribed and coded and aimed at investigating how the relationship developed during one year.	Wardrobe Intervention	8 interviews, total 5 h 22 min + 39 pictures

TABLE 14
Summary of data collected in Wear\Wear

The increase in the number of participants and the addition of reassessment interviews increased the complexity of the network. This addition confirmed the particularities each wearer-worn engagement delivers to the investigation. The provocative nature of the interventions also influenced the complexity of factors involved in the perceived agencies of the garments.

6.7
Findings

The same approach used for the findings in Dress(v.) was applied here (see section 5.7, Chapter 5). In it, the findings from data interpretation are divided into three categories: the Garment Properties perceived by the wearers, what the garments afford and entail as Affects and the effected results as Becomings. In this section, I first unpack the perceived garment properties, followed by an investigation into what the relationships effect. The findings were built from the data set in Table 15 (a selected and summarised version of Table 14).

DATA TYPE	COLLECTION/PRODUCTION METHOD	PARTICIPANTS	TOTAL
Designer's Diaries	Self-recorded by designer	1 (designer)	1
Designer's Pictures	Self-recorded by designer	1 (designer)	200+ and 1 video
Probe Handout Meeting	Audio recorded and transcribed	23	Around 720 mins
Experience Diaries	Self-recorded, handwritten/partly transcribed	22	22 diaries
Group Discussion	Audio recorded and transcribed	8+6	Approx. 100 min each
Reassessment	On-site interviews	8	8 interviews

TABLE 15
Summary of data collected in the Wear\Wear experiment

PERCEIVED GARMENT PROPERTIES

The garments, made to measure and designed with embedded changes, can be understood as bespoke interventions. This bespoke aspect brings along a sense of quality in garments, produced in an artisanal and experimental project. This perception was sustained despite the openness visible in details, such as the raw edges on hems, sleeves and necklines and colourless prints. The table below describes how participants perceived these pieces after the interaction phase and reassessment interviews.

PERCEIVED GARMENT PROPERTIES	NUMBER MENTIONS
Physiological	
Comfortable	6
Versatile	6
Practical	2
Uncomfortable	1
Alive	2
Psychological	
Open-ended	5
Elegant	7
Easy maintenance	3
Makes feel well dressed	11
Fun	1
Sociological	
Conversation starter	3
Different (attracts attention)	5
Makes feel ugly	1
Ideological	
Creative expression	2

TABLE 16
Perceived Garment Properties as mentioned by participants,
categorised according to Jordan (2000) in regard to
physio-, psycho-, socio- and ideological properties.

Despite having a larger number of participants in comparison to the previous experiment, the perceived properties of the garments were mostly consistent – except for two very distinct experiences, which will be discussed later in the text. The most frequently perceived property was the feeling of being well dressed. It accounts for external perception, the fact that the clothes were made to measure and the previous conception the participants might have had of the designer (see Figure 65). Understanding the clothes as elegant is also connected to the previously mentioned factors, added to physio- and sociological factors. They are the cultural understanding of 'a dress', especially valid for the black pieces, and the glossy effect provided by the finishing given to the material.

> *I feel pretty fancy for taking part in this project, I had this blouse made to measure for me, in this sense. I feel really well dressed. (P17 Group Discussion)*

> *I chose the long dress. On the day I got it I went to a friend's party, and [other guests] really care about what people wear and*

> *they said: 'Oh, is it Issey Miyake!?' so I thought 'Ah, now I know that it's really fancy!' (P21 Group Discussion)*

The fact that a piece attracted positive external perception, usually for differing from how the wearer was expected to dress (e.g. participants who always wore black experimenting with a white blouse), supported the development of a positive relationship with the garment.

> *[After having difficulty with the colour] one Sunday I decided to wear it and I got like five compliments from very different people [...] So I thought, 'Ok, it can be something nice.' And I think that people usually realised that it was something that I wouldn't normally wear, they saw that it was something very different. (P3 Group Discussion)*

> *A friend saw me and said, 'You look beautiful! Modern!' And then I really trusted the dress. (P5 Group Discussion)*

> *I chose to layer it with a blazer. When I took the blazer off people said, 'Oh, what a beautiful blouse!' My husband also made me compliments and the surprise for me started there. It was a blouse that I thought was making me fat but others' opinion changed my perception about it. (P13 Group Discussion)*

On the other side, external perception also prompted negative experiences. A great difficulty in seeing one's body with the new volumes imposed by the dress added to external reactions to it – some felt they looked bad in the piece and avoided wearing it socially. Together with this feeling came the feeling of discomfort, as well as questionings and profound reflections on how we (over)value external perception, often depriving ourselves of our opinion, and the normative slim and slender body problematics.

> *He censored me and thought it was a bad idea to wear the dress to go to the beach. I felt really bad about his comments and even worse about the fact that I ended up changing clothes. [...] I felt sad and angry to realise how men feel like they can tell what is pretty or not for us. (P6 Diary)*

Comfort, by contrast, was mostly associated with general qualities of the garment, such as its loose fit and tactile qualities of the fabric. Versatility, on the other hand, was associated mostly with the possibility of wearing the same piece on different occasions.

> *I identify with the piece, but the key aspect is the comfort, the*
> *possibility of wearing in many different contexts. From going to*
> *an orchestra concert, to staying at home. (P14 Group Discussion)*

One great point of interest in this research, that of open-endedness,
was perceived concerning design (especially to how the pieces were
finished with raw seams) and to the experimental tone of the project.

> *Julia said that the dress would change in the process, so I feel more*
> *relaxed and feel like it is ok if I cut, unlike other dresses. They [other*
> *dresses] are one complete piece. But Julia's piece is going to change,*
> *so I was encouraged to change it. (P21 Group Discussion)*

Seeing the piece as a conversation starter was connected to either
the fact that it was part of a research project or its changing aspects.
Participants used it as an excuse to start conversation at social events,
or to share life events with friends and acquaintances.

> *In situations when I was with friends it was interesting to tell*
> *[about the dress]. When I was with people that I didn't know very*
> *well, it was a good conversation starter. (P18 Group Discussion)*

> *I can show everyone, 'Look, it's changing the colour based on the*
> *temperature', and then put hot or cold things on the dress and*
> *make patterns [...] And I showed it to my mum and she said, 'Ah,*
> *this is nothing new! In the 50s I had this coat that would change*
> *according to the weather.' So this dress would start conversations*
> *quite often. (P19 Group Discussion)*

Liveliness, on the other hand, was exclusively connected to the
'mutating' aspect of the garment, which would change form and
colour with experiences. These material and immaterial properties of
the garments supported the creation of spaces of action for the pieces
and the wearers. The following section will present and discuss the
findings in regard to how these relationships unfolded.

BEYOND PROPERTIES: WHAT DOES SURPRISE ENTAIL?

Following the same structure as Chapter 5, I now head to the findings
not in terms of what these pieces *mean*, but on what they can *do*.
Figure 66 illustrates the network of forces as voiced by the wearers in
the study, focusing again on three categories previously defined: the
actors directly involved in the intimate wearer-worn relationships,
how they are able to affect each other, and, on the far right, the
perceived results of such actions as becomings.
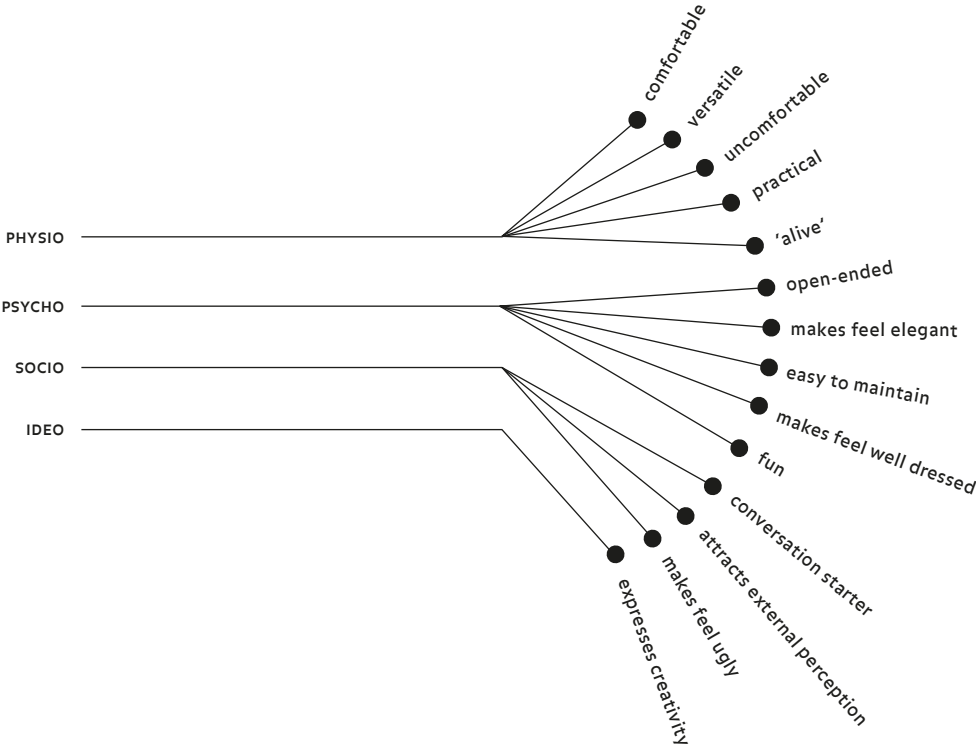
FIGURE 65
WEAR/WEAR. Perceived properties of dresses and blouses. Perceived
properties of the pieces in Wear\Wear as reported by participants
in the diaries, group discussion and reassessment interviews. On
the top, the image shows the properties categorised under Jordan's
model (2000) and on the bottom, the relationships between them
are visualised with solid lines. Unlinked codes indicate that no
connection to other properties was voiced by participants.

- comfortable
- versatile
- uncomfortable
- practical
- alive

- open-ended
- makes feel elegant
- easy to maintain
- makes feel well dressed
- fun

- conversation starter
- attracts external perception
- makes feel ugly

- expresses creativity

PHYSIO

PSYCHO

SOCIO

IDEO

MAKER

GARMENT

WEARER

material choice
material engagement
form/fit/design
previous experiences
situated making
leaves marks (embodiment)
change through time
embed newness
comfortable
versatile
shapes itself
practical
'alive'
open-ended
changes over time
uncomfortable
expresses creativity
special
fun
conversation starter
different (attract attention)
adapts to garment
adapts to wearer
comfident
well dressed
ugly

ACTORS

PERCEIVED PROPERTIES

FIGURE 66
Visualisation of findings for Wear\Wear. The image presents the network
in which actors, their perceived characteristics, abilities to affect via
interaction and the result of these affects are identified. The visualisation
was produced from the codes that emerged in the interpretation phase.
In it, the dashed lines are used to link relationships within the same
level of codes and the solid lines link relationships across levels.

develop style

affords connections

challenge/disrupt

empower

care (fold/mend)

non-visual perception

build memory

emotional attachment

ownership/authorship

motivate reflection

invite modification

become aware of environment

communicate

learning through wear

visible agencies

stronger engagements

AFFECTS
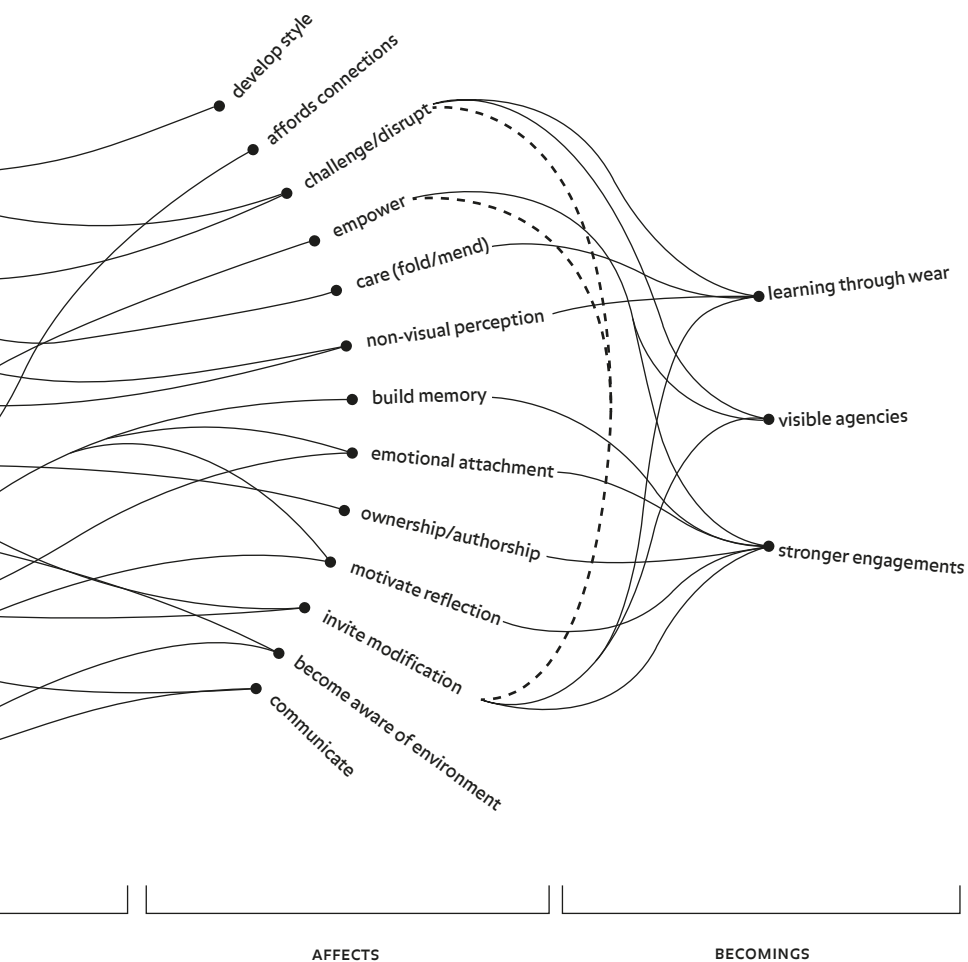
BECOMINGS

As the garments started changing – through altered colours or seams and parts coming undone – wearers experienced mixed feelings of surprise, dissatisfaction, panic, excitement, satisfaction and curiosity. However, even though the changes were quite clear on the piece (a disappearing pocket or seams and change in colour), five participants did not perceive a specific change (six participants) or any of the changes taking place in the garment (three participants). The fact that some Brazilian participants did not wash their clothes themselves – they were professionally cleaned (two participants) and the fact that the changes happened on the back of the piece (seven participants) have supported this finding. Different actions and reactions that took place within the relationships, connected to the changes or other aspects of the garments, are discussed below. They are grouped into (1) Material Agency, (2) Beyond Visual Perception, (3) Challenges, (4) Care and (5) Communication. The first grouping is more general and collects findings articulated from different material properties and affects. The other groupings, as in Chapter 5, stem from the perceived properties that most affected the relationships.

Material Agency
The combination of the material qualities of fabric, making activity and fabric processing gave the pieces a set of agentic capabilities. With each wearer, on each day, the garments would 'act' as situated within that set of forces, such as the weather, the wearer or the other garments. Though not different than what happens to other pieces in our wardrobes in general, the interventions assessed by diaries have made these acts visible. In other words, the data collection method employed made it possible for some factors to be perceived, located and reflected upon. The excerpts below are reports of the agentic materiality of garments as perceived by the wearers. In what senses did the pieces really show themselves as holding agency and ability to affect? How did participants react and negotiate with these manifestations? The need to reflect on the practice of wearing was noted as one way to perceive such agencies:

> I think that the clothes were [placed] in a very static part [by the fashion industry]. The experience I had with this was a sensorial rescue, and this need to perceive that: 'It is alive!' (P9 Group Discussion)

The colour and flat pattern of the dress have directly affected one participant to associate it not with other clothes, but with pictures placed on a wall, suggesting a more fluid understanding of 'what is it that clothes can do?' and challenging the ways of keeping clothes within the space of the wardrobe:

And then [...] I put it on the wall. Because it is a grey colour
and I have some other images in my flat and I put it with a
blue tape [...]. I compared it with the other images I had.
When I did it I thought, 'This is not a dress, it is a painting.'
(P19 Group Discussion)

The strongly marked folds suggested that the dress had 'wills' to stand and move on its own, but it was precisely the interaction between the two bodies, wearer and dress, that allowed such movements and forms to manifest.

What happened was that I managed to fit the piece on my body
and fold it the way I like [...] but when I started walking it began
moving with me [...] I realised that the piece would not obey me
and I surrendered to its movement. [...] It ended up being an
interesting experience, of a piece that moves with me along the
day. (P5 Audio Diary)

In all the examples above, the interaction is central to how the agencies were perceived, be it by thinking about, keeping or caring for the pieces.

Non-Visual Perception
Six participants reported 'feeling' a change in shape, despite not being able to tell where the change happened. The statements below show how changes were not always visually perceived by wearers, but felt in the material engagement between body and clothes.

I realised that something changed when I dressed in it. Not on
my hands, I didn't perceive it. And then after I realised that
something was happening there because [...] [the pleat] came
undone. (P9 Reassessment Interview)

Because it opened. I didn't see it actually, but I put it on
and thought: 'It opened! Oh my god, I will stitch it back.'
(P2 Reassessment Interview)

I realised it was tighter [before]. And I said, 'Oh, it is different, it
is more loose' [...] The first time I washed it came out all different
[from the washing machine]. But I only realised it when I wore
the dress. [...] And I do dry all my clothes on the hanger because
of space. And then, I only realised when I wore it again and there
was this slit here and the neckline, and those are the ones I could
point out. (P10 Reassessment Interview)

This comes as a very relevant finding when we reflect on the experiences between the wearing body and the garment and much in resonance with theories that show how knowledge construction is not exclusively a mental process, but is instead situated in the body (Johnson 2012, Lakoff and Johnson 1999). It raises the wearing experience to one of great relevance that should be treated as equally important as the frequently highlighted and discussed space of social interaction and psychology of clothes.

Challenges, or Clothes as Obstacles
Disruptions to the wearers' wardrobes were intensified in this project in relation to Dress(v.). At times the deployed clothes were perceived as an obstacle that came in the way of participants' usual wearing practices, but at times only as a need to incorporate new practices too. The challenges were motivated by (1) the changes in the garment over time, (2) the colour, (3) the folding and (4) the form, opened up below. These different disruptions brought along different solutions and attempts to stabilise the relationship via adaptations.

THE CHANGING GARMENT. As referred to by the participants, the changes in the garment were reported as supporting an understanding of the pieces as lively, stubborn and surprising. Though not always received with positive feedback, the changes have also suggested actions that wearers could take: physical alterations, such as cut (3) and mend (5), investigation on the construction of the piece (6) and other adaptation, e.g. using the disassembled fabric to reform the piece (1). The quotation below exemplifies how the feeling of surprise initiated curiosity about understanding how the change was activated:

> The bottom piece dropped.
> It dropped.
> I didn't expect this at all.
> I studied it a bit trying to find out how Julia did it.
> Maybe it has something to do with the stitches she used.
> (P21 Diary Excerpt)

Making physical alterations or adaptations to the piece was associated with a sense of ownership (3) and of a perceived open-endedness (2) apart from the manifest changes. It also gave the wearers a feeling of empowerment and proudness, for overcoming initial difficulties or perceiving that they could act in order to enhance the relationship they had with the garment.

> I washed the piece by hand, very carefully, and some of the seams started to come undone! [...] I was sure about one thing:

the slit on the leg and the right sleeve didn't bother me (they actually made the dress more charming), but the open seam on the neckline didn't please me at all. [After different trials] I courageously grabbed a pair of scissors and made a new neckline for me! I couldn't even believe I was that daring, but I felt, at that moment, [that I was] the real 'OWNER' of the dress. The result was so good that I think I will do this more [in the future]. (P4 Diary)

[...] I know this piece, the designer did it with this style and I can just feel free to change it [referring to the raw edges on hem, neckline and armholes]. That's one thing. And you said that it will change anyway, and I might feel freer to change... so [there were] multiple reasons that made me more comfortable to change it. But that is very interesting I think. I feel so empowered, I do not know [what happened at] that moment, but these are the reasons that kind of enabled me. (P21 Reassessment Interviews)

[...] The dress started coming apart in my hands and I was in a panic, a part of the hem came out and [...] it became shorter, with less volume [...] then I was very anxious to wear it. I had the feeling that I had a new dress. [...] Today I put it on and it was really nice because it fit me better and I used the hem that came loose to make a band, to wear it like a belt, make it more waisted. (P5 Group Discussion)

Engaging wearers in mending and altering the pieces brought into discussion how little the average contemporary individual inhabiting metropolitan areas knows about basic mending skills. Participants, when not familiar or comfortable with mending, mentioned feeling incapable of making changes to the garment, but eventually learned with experience, though the results did not always entirely meet their desires.

COLOUR. Six participants have reported the colour of the clothes as a clear challenge to wearing the piece, but the difficulty was frequently overcome with external perception and comments from partners, friends and family. As different people have different colour preferences, it cannot be said that a specific colour is generally perceived as difficult. One participant mentioned having difficulty with black (as she usually wore colourful prints and black felt too dressed up), two with white (they both could wear light clothes, but not usually white) and three mentioned that the light grey in their dresses was futuristic (mentioned by one participant) or made them look pale (two participants). This challenge promoted adaptations in

how participants combined pieces together, exploring other garments in their wardrobe that were usually left unworn or combining with colourful or bold accessories such as necklaces, earrings and scarves.

> *[...] the colour was a challenge for me, more than the shape [...] All my clothes are very colourful [...] And I thought, 'I won't make it!'. So I spent some time 'flirting' with the piece, trying to find something in it [...] And I started experimenting, I spent around one afternoon trying out the piece in different combinations, changing shoes, and one interesting thing happened, I never managed to wear the dress without anything. I always wore an accessory, a scarf, a necklace, etc. I had to pollute it somehow because the 'clean' wasn't me. (P4 Group Discussion)*

FIGURE 67
The image, shared by P4, illustrates her own quote above.
In it, the wearer layers the dress with scarf, vest and
necklace to overcome the challenge with colour.

> *I do not usually wear white clothes [...] it wasn't love at first sight. [...] But I confess that I was surprised. I received compliments and became more confident throughout the day. (P3 Diary)*

The lack of prints and other details made the participants see the pieces as a blank canvas that affords interferences and new compositions, such as the one in the quotation above. The colour changing fabrics made wearers more aware of the 'hidden colour' when choosing their outfits, but no mention of it as a challenge was made.

FORM/DESIGN. The form of the garments, determined by their material behaviour together with the experimental pattern cutting approach, was found to be a challenge by some wearers. At times, the form and design acted as an obstacle to combining pieces together. The

results of the body-cloth encounter occasionally shattered previous understandings of one's body, bringing feelings of discomfort, playfulness and a drive to intervene in the piece.

> *The cut was a bit too square for my body so I add a pin to give it a bit of shape. (P22 Diary)*
> *I also have to say I was wearing it reverse all the time. I was wearing this in the back and my back was on the front. And the reason why I did it was [because] I was trying to find a basic fit for this dress, even though it was made for me, so it fits me very well, I can show you now how it looks [...] I prefer it like this, as this felt closer to me. (P18 Group Discussion Helsinki)*

> *It is funny because the aesthetics is not so different from mine, but the volume is. I usually wear clothes that are closer to the body [...] I never wear clothes that are very loose and I couldn't make a production at home ... Then when I put on the dress, it was like magic, I managed to make it work on this first day, which is the only picture I have [...] I was able to make a fold that made it more of a tighter dress. (P5 Group Discussion Belo Horizonte)*

FIGURE 68
Image from P5's diary illustrates how the piece was adapted to acquire a more fitted shape.

The 'extra room' in the garment, allowed by the pattern cutting process, has literally brought a physical space of action for participants. With the intent of a more pleasing form, of a more comfortable feel, wearers took initiative to interact with the garments.

Care
Contrasting with the Dress(v.) project, in Wear\Wear ironing was taken as a design solution rather than a demand in care practices. Caring for the pieces in Wear\Wear demanded attention especially in folding, and at times, if desired, in mending – some parts of the pieces would come undone after washing. The permanent folds, possible due

to the material properties of polyester, interestingly suggested to the wearers that they should keep the pieces as if they were pleated (mentioned by two participants) or folded (mentioned by three).

> *I didn't iron, I did not wash. When I took it off I actually rolled it as you roll pleated clothes. I do not know why I kept it like this, but it seemed natural. (P20 Diary)*
> *[...] I am not a designer. But I really like clothes. This is my dress. [...] I tried to fold it ... but I couldn't. Julia showed me how to do it, but I rolled it instead. (P28 Group Discussion Helsinki)*

The folding techniques developed aimed, mostly, at keeping the marked folds, or, in other words, sustaining the visual qualities of the garments for a longer period of time. At the same time, though, the folding practice was at times in the way of the frequency of use, as it was reported that folding the garment to its initial form was seen as extra work.

Communication
Being a piece backed with a different story from other clothes in participants' wardrobes was a motivator to communication. This communicative power of the garment acted on two fronts: The first refers to how the pieces were given to participants as deployments, which places them in an uncommon position between a gift and a research tool. Participants have mentioned that, through the clothes, they engaged in unexpected conversations or had a good excuse to start a dialogue at a social event. The second refers to how the piece embodied memories and could communicate it to the wearer through its materiality – the changes reminded wearers of that particular moment, whether a food stain or alterations made.

> *So in this sense it has this meaning and I will keep talking to people and whenever I remember about it I will think about it, or when I am moving I will gather all the clothes, and some clothes I won't even think about, but in the case of this piece, I will think, 'Ah, this one!' It holds a story and your message and the reflections I had about it will come back. (P21 Reassessment interview)*

> *I like the stories that the dress carries. It is special and makes me – and the event of wearing it – even more special. (P18 Diary)*

This communicative agency provided by the material and immaterial characteristics of the clothes was seen by the participants as adding meaning to the relationship. However, while the status of the clothing as something special or engaging might motivate wearers to use it

more frequently, this finding cannot be confirmed from this study due to its length. What it suggests, though, is that the feature fed a reflexive exercise on the pieces, either through evoking memories or thinking about the process as a whole.

Added to the above agentic features, other findings overlapped with those in Dress(v.), such as the process of embodiment and knowledge building on how clothes are constructed. Concerning embodiment, processes of becoming were clear, in which wearers and clothes adapted to each other. In some cases, the pieces were slightly or radically modified in order to fit the wearers' taste, usually related to the form and design of the deployed pieces. In other cases, specific features on the clothes (here mostly the colour) motivated changes in the wearers' dressing practices. Knowledge construction was somewhat similar to that in Dress(v.), taking place especially through material interaction. However, here, as the pieces did not require ironing, the realisation of how the pieces were designed or constructed happened during the perception of change (which drove curiosity about how the effect was created), while hand washing, folding and mending.

BECOMINGS:
INTERACTION RESULTS

The interaction between participants and intervention pieces through communication, care, alterations and other kinds of engagements resulted in the emergence of three key concepts: learning through wear, visible agency and stronger engagements. Often, a single affect promotes more than one of these concepts. Due to that, the same affect will be discussed under different concepts.

Learning through Wear
As mentioned before, participants perceived a process of becoming – including knowledge development and mutual adaptation. As they experienced these pieces, they constructed knowledge on clothing through wear. This knowledge construction through experience has been broadly debated within pedagogy and arts (Dewey 1997; Ingold 2013), though not articulated specifically in fashion and clothing. Concerning adaptations, it must be noted that as participants did not choose the pieces, but were given them – they only selected length and type of garment – a more active process of adaptation was required. Knowledge was gained through testing, mending and exploring the pieces in regard to their material qualities. The way that clothes were sewn together in order to incorporate surprise and how they communicated open-endedness (with raw edges and their

experimental qualities) led participants to reflect on how clothes can be altered or alter themselves through time. The findings presented at the beginning of this section, on how wearers perceive changes in the clothes only when in physical contact with them through wearing, supports the discussion. They suggest 'wearing' as a place of investigation to further understanding on two fronts. The first refers to how we can gain agency in the relationship by developing knowledge through experience. The second reckons that agencies are situated in the entities of clothes, as they affect us and shape our perceptions.

Especially, by breaking with the paradigm of fashion and clothing as a system of mere visual appeal and signification, participants were able to not only *see* these clothes but also *feel* and embody them through actual becomings. It was exactly these perceived properties of clothes (open-ended, experimental, embodied) that invited people to take a more active position in the relationship and 'talk back' to the system by developing knowledge and claiming their own agencies as wearers.

Stronger engagements through interaction
Tightly related to the concept of learning through wear is the development of stronger engagements via embodied experience. As reported by the findings in the previous sections, the main force behind the development of the relationships was found to be the physical interaction between wearer and worn. Motivated by open-endedness and experimentalism embodied in the pieces, participants were motivated to engage in activities of alterations and adaptation. In a similar way, embodied marks left on the clothes by the designer and the wearer and vice versa have motivated reflection on the notion of authorship. These have aided the setting of grounds for stronger bonds.

> I can feel its materiality and it is very special in the sense of this form of representation, you can see it's very different, here you can see that something dropped, so all the details bring something back. I think this is the power of the object. (P21 Reassessment)

As noted in the excerpt above, the materiality of a piece represents the engagements that took place in the past and made it 'special'. As an intervention that continues to exist through time, the provoked reflections remain embodied in the piece, allowing wearers to access beyond the surface and into their 'hidden interiorities' (Anusas and Ingold 2013). In this way, wearers grow understanding on the life and

matter of clothes via interaction – that is, how they respond to time and affect those who wear them. In embodying these understandings through wearing practice, wearers *become* with clothes.

Visible Agencies
As with anything else in our daily engagements, we are affected by things on different levels (Ruggerone 2017). As it is the intent of this study to look into how we can design for more active engagements, understanding how clothes manifest their agencies – or their capabilities to affect – becomes vital. In the data collected throughout the one year of the study, the open-endedness perceived in garments and the affordance that invited participants to modify the pieces were reported as raising awareness on what clothes can do. Participants spoke of a feeling of empowerment and a desire to be able to have more authority to alter the pieces as well as a motivation to explore the process of identity construction in greater depth by experimenting with the clothes. Three participants mentioned that they would like to engage more deeply and experimentally with a smaller number of pieces, taking full advantage of the conversations they may offer. These participants have stated that they either started or consolidated a process of reducing the number of clothes in their wardrobes.

The non-visual perceptions, as affects that happen through tactile experience, influenced a change in the way clothing is understood, highlighting their material qualities and agencies. They confirm how different senses entwine in experience, allowing individuals to 'see' through tactile experiences (Pallasmaa 1996). As previously discussed, this was pointed out by six participants and supported in understanding the materiality of the garment and how the bodies (garment and participant) interacted.

Even though many of these intents were voiced, it is important to note the great difficulty in tracing back to specific events, which effectively motivated the changes in attitude. The pieces might have started, supported or catalysed intents, but might have only been an indirect part of other experiences or entities responsible for that. The fact, though, that the participants associated the pieces with such changes leads to the belief that the pieces did, to some extent, collaborate in the process.

The findings above add to the call of works such as that of Gill and Lopes (2011), Carter (2012) and Sampson (2018) for more investigations on the experiential dimension of clothes. They hint at directions in research, but also in practice, where, for instance, interior parts of garments could be further explored to elicit specific sensations and affects.

6.8
Conclusion to Wear\Wear

In Wear\Wear, the responsive materials motivated a more playful relationship than the clothes in Dress(v.), especially due to aspects of suggested open-endedness present in the design (raw edges, volumes, experimentalism). At the same time, the permanent changes motivated participants to question and investigate how the changes took place, as they were deeply affected by the surprise element. These two aspects generated a more active relationship, one in which participants engaged in mending, altering or resetting the relationship with their clothing item. Initial difficulties or frictions between wearer and clothes – reflecting the experimental pattern cutting process – were intended and helped strengthen the wearer-worn relationship (cf. Laschke et al. 2015). Unlike previous studies, here it is not product satisfaction via aesthetic needs (Niinimäki 2011) or personalisation (Mugge et al. 2009) that supports this development. Instead, it is precisely an openness to affecting and being affected by clothes that allowed wearers to set stronger bonds. This potency of openness brings us back to the ways Deleuze and Guattari (1987, 257) speak of the powers of being open to affects in the path to composing more powerful bodies. Under this theoretical framework, such stronger bonds become 'becomings'[45].

With this iteration of designing for more active relationships, new concepts emerged, triggered by the material qualities of the pieces. Some examples are how wearer-worn engagements can set forth knowledge on clothing and the suggestion of time as a space to be explored in design (cf. Valle-Noronha 2017c; Riisberg and Grose 2017). As the work proposes, changes through time in the pieces may invite novel and unexpected interactions that lead to different relationships. In general, this project has stressed the sensorial perceptions and bodily knowledge that result from the interactions with clothes. Here, the roles of disruption and discomfort were clarified, reckoning them as both positive (supporting active engagements) and negative (frustrating relationships). Added to that, it became clear that while in fashion the superficial and the visual is always highlighted and more frequently discussed, it seems to be that much of our understanding on clothes actually comes from an embodied, dressed experience (e.g.

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Parts of this paragraph were previously published in Valle-Noronha and Wilde (2018) on page 211.

how wearers perceive changes on the body and not visually). What this work offers back to the material agency framework applied to fashion studies is a consistent empirical finding that supports what many theorists in the field (Ruggerone 2017; Negrin 2016; Parkins 2008) call for: a need to take material affect, agency and engagement seriously.

7
General
findings

AS A NEW GARMENT ENTERS THE WARDROBE, it brings with it a load of new possibilities. For example, new jeans can initiate new combinations of clothes that never acted together as an outfit. An inherited blouse can make a frequently used top become idle and be moved to the 'inert' zone of a wardrobe. Or even, a garment that feels too loose may inspire its wearer to explore or change its shape. The texture, the smell, the colour, the shape, the feeling of the seams against the human body, how it reacts to other clothes once worn together, once washed together. A new garment, it can be said, brings disruption to a wardrobe, and together with it, new flows and reorganisations of relationships. As presented before (see Chapter 3), Ahmed (2006) speaks of how experiencing new objects can 'impress' on the body, giving to its surface a new shape (Ahmed 2006, 9), now tainted with these experiences. What then are the impressions an experimental garment can give to a human body once experienced via a design intervention? In which aspects can design influence the manifestation of agentic properties in garments?

The answer to this question speaks of the agentic materiality of (these specific) garments as much as of the wearers and makers. It speaks of what they each afford and 'how' and 'where' they can affect the relationship between wearer and worn, leaving impressions on the wearer and on the clothes. It concludes that makers, wearers and clothes intertwine in constant becomings, affecting and constructing each other. What is at the core of this investigation, thus, are the manifestations that emerge from the relationship between the participants and the intervening garments (which inevitably resonates through the wardrobe in a more general sense). This chapter articulates between the findings from the two studies: Dress(v.) and Wear\Wear, discussed in Chapters 5 and 6.

With Dress(v.) and Wear\Wear it was possible to conclude that the motivators and catalysts for change go beyond the clothes themselves. Other factors impacting changes must be considered. For example, the way the researcher communicated the clothes to the participants and the support material given in the wardrobe intervention kit (the informative leaflet and clothing tags) were relevant in affecting the relationships. Participants reported being more attentive to the washing instructions and the feel and physical characteristics of the materials used in the wardrobe intervention pieces than they do with other clothes. These shifts were associated with two main factors: (1) the ways in which experimental and made-to-measure clothes are typically commercialised – more often than not, such sales happen in the studio space, with a close consumer-designer relationship; and

(2) the research aspect of the project, which demanded a different attention to the pieces[46].

Both projects presented pieces with slight idiosyncrasies in shape or 'behaviour', consequences of an experimental process in clothing design in which creative pattern cutting and conceptual explorations were central. It is not intended that the clothes produced for the projects be fashionable, but instead subtly provocative within the realm of everyday wear. Much of the focus was given to shapes, directly informed by autoethnographic collection of data on wearing and dressing practices, bodily movements and clothing affect. The form of the pieces, with slight distortions of the human body, can be seen in clear contrast to, for example, mainstream ready-made tailored clothes. Tailored clothes are often built to represent and shape a normative portrait of the human body (Entwistle 1997), leaving little space for particular manifestations, either from the textile material (which frequently gains structure with fusible interfacing) or from the materiality of the body (shaped and constrained by the garment). Through the methods and processes used here, it is expected that clothes and human bodies can manifest themselves in interaction, can engage in dialogues and exchange physical affects, resulting in unique and unexpected forms.

The combination of the support material (informative booklet and tags) and the material characteristics of the clothes offered a powerful starting point for shifting perception of the agencies clothes might hold. In general, participants declared that they had become more thoughtful about their clothes as a result of the study. The idea of care (identified by Spława-Neyman, 2014 as a potent factor in the reckoning of material agency) was frequently mentioned. It was not connected to a particular feature but rather to the overall presentation and quality of the wardrobe intervention kits as well as to the materiality of the garment (e.g. a white poplin or shiny black crêpe). Participants relate getting acquainted with the patterns when ironing or hanging the piece. This growing familiarity is considered to be a positive move towards deeper understanding of the general qualities of clothes, and central to shifting perspectives on garments from passive to active matter as suggested by Ingold (2013, 31).

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Parts of this section were previously published in Valle-Noronha and Wilde (2018) on pages 211–212, especially, paragraphs 3, 5, and 6 hold considerable parts of the original.

It must be considered, though, that despite the suggested open-endedness, these more radical engagements (such as altering and mending the pieces) may or may not take place, depending on the predisposition of the wearers. For example, when participants were asked to describe the piece in terms of physical and abstract characteristics, they would often mix their own personal 'marks' left on the piece with style characteristics and values attributed to the designer, and material and abstract aspects particular to the garment. Nonetheless, as time passed, participants became more aware of the different voices and affects of each entity in the relationship. During the group discussion they referred to the designer and themselves much more than to the piece. Later, in the reassessment interviews they showed to have a more developed relationship with the piece, bringing it to their discourse with more agentic features. This situates time as central in the development of stronger relationships between wearer and worn and reminds us how clothes embed experiences in a constant *becoming*. This continuous changing has been framed as a permanent state of co-authorship between wearer-worn-designer (cf. Valle Noronha 2017b).

Another great point of interest here is how knowledge is gained and constructed through interaction. Within the projects, but more especially in Wear\Wear, wearers became more aware of the forms and material behaviour of the pieces when wearing them on their bodies. This disrupts the usual mediated nature of experiencing clothes (e.g. the mirror, the external impression) and draws attention to the bodies involved as affective entities. With this shift of attention, from seeing clothing as a static image to an affective entity – a process – the agencies of clothes are highlighted (cf. Blackman 2012; 16–17).

Added to that, care practices also supported this process of developing understanding on clothes and their materialities. With such a vast number of forces acting in the practices of dressing and wearing, it must be noted that very little is fixed for the wearer. In that sense, it is the experience that can draw their attention to clothing as active within each particular wearer-worn context. This point challenges the Barthesian model of clothing experience as something that can be systematically classified, testing the limits of the linguistic model of clothing (Barthes 1968). Carter explains that for Barthes, "Garments, and parts of clothing, make up messages to be read in relation to other vestimentary units rather than as symbols to be experienced, or forms to be encountered." (Carter 2012, 346), constituting almost exclusively a normative system of social agreements. Barthes' viewpoint has been challenged by a series of authors who stress the real value of lived experience in fashion

studies (e.g. Negrin 2016; Entwistle 2000). The clothes in Dress(v.) and Wear\Wear, I argue, do not carry specific messages, but rather propose forms and experiences that subtly disrupt the mainstream fashion system. Through the different experiences (shared among thirty-two participants), their meanings are created and recreated in each engagement. The different affects of the pieces, though contended within the clothing as material things, can be accessed or not by the wearers. Added to that, though some affects recur among different wearers, others are quite exclusive to one specific interaction – where the context must always be considered.

By identifying key aspects that support stronger or more active engagements with clothes, this work also supports previous findings in the field of person-product attachment. It confirms the role of memory as an important factor in the development of relationships, and adds to previous works by understanding memory as bi- or pluri-directional. In other words, the memory is shared between the different agents in the relationship (i.e. the clothes, wearers, makers and the social environment), not relying exclusively on individuals' 'readings' of their clothes.

Some notions previously explored as conceptual theories could be proved through this work (embodied knowledge and experience, material agency); in addition, new concepts emerge to describe our relationships with clothes (learning *through* wear). The notions of experiential and embodied knowledge, founded on how wearers develop understanding of the clothes through wearing, challenge the way clothing and fashion have been generally primarily associated with visuality (e.g. Seely 2013; McRobbie 1998; Griggers 1990). What the interpretation of the data and findings propose is that by exploring the agency of clothes, steps can be taken to restore the agency of wearers and take the affective powers of garments into account.

8

Discussion

THIS SHORT CHAPTER REFLECTS on the methodology employed in the research. It looks into aspects of the wardrobe interventions that may have helped or frustrated the research to achieve its goals in uncovering wearer-worn experiences. Moreover, the chapter discusses research based on practice, and the constraints found at the conclusion of the work. The discussion regards, especially, the design outputs as observed against the emerged theoretical background.

Considering that individuals and the clothes they wear are tightly intertwined, it is difficult to set the voices of wearer, worn objects and their designers apart. These three entities constantly affect each other in ways that become an essential part of them. In the two projects, the method makes this difficulty visible but also points to possible solutions as future implementations, such as the reassessment interviews.

As this was the first application of the wardrobe interventions, issues arose and called for solutions as the process unfolded. The main difficulty encountered concerned time and how to assess the development of a relationship. Inspired by other works in design deployments (e.g. Halse and Boffi 2016; Mattelmäki 2006; Hutchinson et al. 2003), the first project had a very short duration, which made it difficult to perceive the development of the relationships. Instead, they worked more as brief provocations and experiences with unknown future behaviours or reflections. In order to assess such phenomena it was essential to (1) extend the data collection time frame and (2) perform reassessments. During the diary-keeping phase, relationships were under 'observation', and changes in how participants related to or perceived clothing could be altered by this fact. We can think, for instance, of how people behave differently when they know they are being filmed. Beyond the diary-keeping phase, participants started developing relationships closer to their usual habits and routines, though tainted with the personal reflections and group discussions. Thus, the second deployment of the method, in a longer study, was found to be more effective and brought richer and, I argue, more accurate results.

The table below summarises the pros and cons for the method perceived during and after its implementation with regard to the quality of data, timeframes, design activity, number of participants, ease of access and participation frequency.

	PROS	CONS
DATA	Rich data, beyond expectations / plans	Large volume of data – time consuming for interpretation
	Free-form generated data – no pattern	
TIME	Long time span allows confirmation of findings	Needs planning for longer-lasting projects and time availability (minimum 1.5 year)
DESIGN PRACTICE	Engages designer-researcher in real design activity	Increases cost of project
NUMBER OF PARTICIPANTS	A small group of participants is enough (around 5)	Need long time commitment (1 year) – some might never return the diaries or never wear the piece
ACCESS	Great access to personal/private information through the clothes	Cultural differences must be noted in how/how much individuals share personal information
PARTICIPATION FREQUENCY	Participants are generally committed. Discussion group averaged 68% participation.	Reassessment interviews are more difficult due to the time gap between studies. This study achieved slightly below 50% participation.

TABLE 17
Pros and cons of the wardrobe interventions as a research method[47]

The main quality of the wardrobe interventions is the richness of data. The difficulty of achieving data saturation (considering that individuals have particular ways of relating to their clothes) impacts how data was interpreted and the findings presented. It also confirms the situatedness of wearing practices as each individual relates rather particularly to the clothes they wear and their wardrobe in a more general sense. In this study this particularity is not seen as a limitation, as the main intention is to collect insights on clothing design, not to produce a definitive analysis of how individuals relate to experimental clothes. Despite the abovementioned difficulties, the number of participants (32) was seen as a sufficient sampling size that provided a rich data set to work with in uncovering the motivators behind active wearer-worn engagements. It must be noted, though, that other interest foci might demand bigger or smaller sample sizes. In general, the method is seen as an opportunity for fashion designer-researchers to expand understanding of how wearers engage with fashion production.

I would also like to pose a discussion on the design production, especially regarding how they have (or not) embraced the theoretical background consolidated at the conclusion of the research. As already

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This table and parts of its description were presented in Valle-Noronha and Wilde (2018).

noted in Chapter 4, the theoretical background emerged from the findings, and was thus not present from the outset of the research. For this reason, the projects are not built integrally from a material agency viewpoint. Some aspects present this issue with clarity and are discussed next.

The naming of Dress(v.) and Wear\Wear relies strongly on linguistic syntax, which some may argue as rejecting the efforts of non-anthropocentric approaches to research (or design). However, even though *dress* and *wear*, as titles, hold humans in focus – they are human-created words – they also offer room to reflect on the dynamics of the wearer-worn interaction. As verbs, they are hospitable to the idea that subjects (a wearer, a worn) are not fixed. They are in motion and open to change. As nouns, they encompass multiplicities, just as any *thing* does. Dresses are all that cover, adorn, protect. Wear refers to deterioration as well as dresses and utility. So even though the syntactic interest may draw the project titles closer to an anthropocentric discussion, their semantics offer a way beyond.

The two projects have used experience-based notations (as autoethnographies) to inform the design of clothes. Though rich in content (textual, conceptual and visual), these notations were explored almost exclusively in terms of visual offerings. This approach is directly related to my previous practice as a fashion designer – as I often look for external sources to inform the creative pattern cutting activity. Reading these works, now from a temporal distance, I can see the unambiguous difficulty of overcoming previous experiences with new practices. To upcoming projects, this research offers new paths that can better embrace the matters of fashion and their affecting bodies more consistently from the outset.

9
Conclusion

BY RESEARCHING THROUGH DESIGN, the project challenges the prevalent focus on surfaces and symbolic meaning given to clothing and fashion. It presents the potentials of entangling the practices of doing research and designing clothes. It exposes and discusses what it means to share the agencies of fashion between makers, wearers and clothes, supported by philosophical and empirical studies that argue for a rescue of such agencies (von Busch 2008; Anusas and Ingold 2013; Tonkinwise 2005; Flusser 1999). By doing so, it stands against fashion design as a hierarchical practice and system (Clark 2008) in which wearers become increasingly devoid of agency (von Busch 2008). The work was developed using a research through design approach, with two iterative projects which sought to explore ways to design for more active engagements between wearer and worn. The knowledge produced here stems from both exploratory and empirical studies. The way the research was constructed made the theoretical background develop in time and emerge from the findings. Under the light of a revised phenomenology, aligned with philosophical approaches on material agency, the work has explored what experimental fashion can do via questions on wearer-worn relationships.

The interpretation of the data collected in two deployments with a total of thirty-two participants resulted in a series of examples of how changes are motivated in wearer-worn relationships. The findings have pointed to time and surprise as concepts that can support design to impact the way individuals engage with garments. These two concepts provide wearers with provocative action spaces, to which they responded with reflections. Consequently, the agencies they hold as wearers are restored – i.e. the capabilities to negotiate aesthetic values with the clothes, to engage in modifications, to become aware of the construction of the garment, amongst others. On the other hand, the agencies of clothes were perceived by a shift in the way they were experienced – given space and time, wearers could better sense how clothing affects our encounters with the world, suggesting changes in attitude, reflection and openness to new experiences with what they wear. As the pieces required special care they opened up space to grow knowledge on how garments are constructed. As they looked unfinished and were communicated as experimental, they invited more radical actions in altering shape and form.

The method pays due respect to the importance of the concepts mentioned above, especially those of matter, time and experience. Extending over time, it seeks to grasp how relationships develop. Shifting focus between the different acting bodies (the maker, the wearer, the worn), it seeks to make visible the ways they are able to affect each other. Requesting attention via diaries and discussions,

it intervenes in the velocity at which clothes are experienced. As I write this conclusion today, I expect that the disassembling dresses, the oddly shaped shirts, the reflections written in the diaries and the exchanges had with others still resonate and continue to evolve.

Ultimately, this research exposes the role of embodied experience and knowledge in the development of stronger engagements with the clothes we wear. It points out how the materiality of our bodies and garments become central in the experiences and construction of relationships via sensorial affects and memory. Through that, being able to extend relations through time becomes relevant, as it can support the accumulation of affects and memories, reverberating in future experiences through becomings. Added to that, it urges designers and wearers to understand the temporality of clothes – and to design and experience them accordingly. The lives of clothes are full of affects. One can choose to be open to and become with them or let them at rest. Though most contemplation and reflection is up to the wearers, designers can provoke such actions.

By looking at these little explored spaces of design, the work reinforces that there is much more to our clothes than the superficial and the objective. It reveals the rich complexity of their 'hidden interiorities' once wearer and worn engage in meaningful relationships. As a clothes maker, I find comfort in seeing the processes of making being rescued to a level of importance. As a clothes wearer, I find joy in discovering that my body can at times 'see' more than my eyes. The narratives of the women that took part in this project bring architect Juhani Palasmaa's words to life (1996). The 'eyes of their skins' can see, but their vision sees not the black dress in heavy jersey. The eyes of the participants' skins see the space between body and dress, the deep pleat on the back weighing on their shoulders, a slit depth increasing on their legs. As commented by Ingold (2013, 88), they see *verbs* and not nouns.

9.1
How to design for active engagement?

Working under the broad question of how to increase interaction between wearers and worn, this research explores design as a means to render visible the agency of everyday artefacts, more specifically clothes. This section briefly presents how the questions, asked via experiments, were approached in the research. Along with that, the findings are used as directions to explore new approaches to designing clothes.

In Dress(v.) the importance of design as a means to support communication was highlighted. The project sought to explore what aspects of clothes can lead to more reflective relationships. In answer to this question, it was found that beyond what a piece can carry (symbolically and materially), its support communication material (tags, washing instructions, informative leaflet, etc.) can play a relevant part in sparking reflection. This material reminded participants about the considerable time we spend dressed and the need to adhere to their dressing practices. Furthermore, the clothes and support material also served as a catalyst to imagining other realities, to anthropomorphise clothing, and to reflect on the time and life of the things we wear – their time, materiality and affects. In regard to the piece itself, the colour, textile and shape supported an increase in knowledge on the process of making clothes. Directly related to the qualities of the textile, the interactions between garment and wearer via maintenance practices like ironing and washing were also identified as 'spaces' where this knowledge increase occurs. What is interesting here is that the materiality of the garment alone does not motivate this knowledge. The affordance to generate knowledge is revealed by the encounter between wearer and worn. Even though motivations to modify behaviour are very difficult to trace and account for, changes in attitude suggested that a more reflective account of relationships took place due to the abovementioned factors.

As a result, the materiality of the garment as well as domestic practices like ironing and washing become possible areas for investigation in fashion research and practice (cf. Valle-Noronha and Valle-Noronha 2019). This idea concatenates thoughts and questions on how to navigate further into these findings. For example: Can a garment invite unconventional ironing methods? Can such methods catalyse new ways of engaging with clothes, revealing previously invisible agencies – from wearer and worn – or foster the development of new materials? These are some questions I hope we, as designers and researchers, can engage with in the future.

The second experiment, Wear\Wear, invested the research with how to explore time as a space for design. The use of water-soluble (polyvinylic alcohol thread and textile) and environment-responsive material (thermochromic and uv sensitive dyes) made it possible to introduce novelty at a later stage in the use phase. In this way, the design solution extended the perception of novelty in the piece beyond the acquisition phase and triggered reflections on the 'lives of clothes'. Added to that, the permanent pleats evoked a sense of novelty of form, as the piece reshaped itself when affected by the wearer's body.

The ways clothes are affected by time and environment became very relevant with these findings. They led to reflections that question the ways designers deal with the notions of seasons, time and, more generally, the clothing lifespan. In discussing how bodies can together produce becomings, Braidotti acknowledges the importance of the notions of time and space: "[...] becoming is to extract particles between which one establishes the relations of movements and rest, speed and slowness that are closest to what one is becoming, through which one becomes" (2011, 249). Can designers rethink the life of the clothes they create considering different time systems than that of humans, yearly seasons or fashion trends? Should different cultures consider different seasons that better reflect the major changes in the region's moods throughout the year – e.g. Carnival and June festivities in Brazil? Or, as clothes persist through time, should we ignore it altogether? Knowing that clothes may live beyond their wearers, what solutions could effect continuation in use? Perhaps clothes could more effectively respond to other entities they relate to, such as the occupied volume of the wardrobe or the intensity of smells in a street fruit market, similarly to how uv and heat sensitive dyes react to light and temperature.

The last question asked, 'how can the agency of clothes be made visible through design', received answers from the interpretation of data collected through the Wear\Wear project. The interpretation indicated open-endedness, specific material properties (i.e. changes through time and pleats), and perception of the liveliness of clothes (motivated by reflection on wearing practices) as key factors in promoting visibility of clothes' agencies. While in this research participants related 'open-endedness' to the concept of experimental fashion, raw-edged seams and the surprise factor, what other design features could allow this perception?

Even though these findings start answering the questions, they must be understood as situated within the production and spaces investigated here. What this work offers are beginnings to reconsider the ways we relate to and look at clothes. To researchers in fashion studies, the application of the method – and adaptations of it – can yield new answers to what *clothes can do* besides dressing the body and conveying statements. In this way, the field can go beyond its limits towards more transdisciplinary discussions. Examples are the entanglings between fashion, chemistry and neurosciences as researchers look into responsive textiles in clothing and their affects and affordances, or novel perspectives to understand processes of subjectification (identity building) through fashion via the lens of affect.

To fashion designers, this research suggests that new questions be asked in regard to the aims of designing, integrally acknowledging that clothes, too, are able to act. It sets the grounds for the development of a new approach to fashion as the concept of affective clothing begins to take shape. The common questions on aesthetic commercial abilities of clothes – Will it fit, please or sell? – could give way to questions on what their other affects are. What differences do (specific) clothes support, produce or effect in the wearer, the wardrobe, politics, economy, amongst other ecologies? In my view, it is precisely by asking such questions – that investigate the agencies of clothes, or what their affects are – that we can start designing for more active engagement between the different entities that find themselves in the encounter with clothes. Engagements such as those that incite a desire and an ability to respond back to the fashion system.

As I reviewed this section, I came across a discussion on this precise 'ability to respond back' via the work of feminist theorist Donna Haraway. In a lecture at the San Francisco Art Institute, Haraway breaks the concept of responsibility into the ability to respond via a process of becoming (Haraway 2017). Once one becomes with other entities, such as the matters of fashion, she may grow a more responsible stance towards these entities that are already now also a part of her. This discussion draws me to ponder if *becoming with clothes* may ultimately produce what could be called *response-able* clothing or fashion. And, consequently, whether this could contribute to revealing one of the many fashion-able paths (von Busch 2008) we can take, as wearers, open and ready to become with the clothes we wear.

9.2
Validity and reliability

The validity and reliability of any research is essential to its recognition as a scientific work. Within inquiries oriented by practice, the validity of a research is based on the work's ability to produce knowledge and advance understanding on its specific field. Generally, when one engages in research with tangible designed or artistic objects as outcomes, it is not enough that the objects are created and reflected upon. The research process should serve "as a means of generating insights that contribute to what we know and understand about ourselves in the world, and which also further the development of the discipline in question" (Borgdorf 2012, 207).

In this research project, apart from the exposure and reflection upon the design process, the experience between wearers and the outcomes received special attention and stands as the core of the research. Due to that, the validity of the research lies not only in the methods employed to collect data on the creative process (see subsection 4.3.2 in Chapter 4) but especially in the adaptation of Cultural Probes, namely wardrobe interventions, that sought to collect data on the wearing experiences (see section 4.5, Chapter 4). The adaptation of existing methods or creation of new ones is a common approach within research projects that include practice (Candy 2011, 42). As a novel approach, each of these adaptations requires reflection on the most suitable ways of handling data collection and interpretation.

The approach used to interpret the data collected was a phenomenological one as defined by Creswell (2007, 156–157/215–216). Naturally, it followed the author's guidelines for assessing qualitative research quality concerning its validation and reliability (Creswell 2007, 206–211).

Creswell (2007, 207–209) points out a series of factors that contribute to research validity: prolonged engagement between researcher and study participants, triangulation of data, peer and participants' reviews and clarification of researcher bias. The ways this research asserts its validity concerning these factors are described below.

PROLONGED ENGAGEMENT BETWEEN RESEARCHER AND STUDY PARTICIPANTS

The studies were carried out longitudinally with constant interaction with the participants through three encounters and a series of contacts via email along the process. This approach supported a multidirectional relationship of trust between the researcher and the diverse participants. Added to that, the final group discussions became a space for sharing individual experiences with each other as well as a space for social engagement that extended the period of the research. The development of a 'sense of belonging' within the groups was important so the participants would feel free to express themselves. It must be noted that in all the groups part of the participants were already familiar with each other to some extent – e.g. already friends with each other or had seen or heard of each other but never been introduced – and some were complete strangers.

DATA TRIANGULATION

The research method included three stages in which data was collected: interaction phase, group discussion and reassessment

interviews. The resulting data was triangulated via comparison. The first stage was a personal account of the relationships between wearer and worn via self-documented diaries, the second a group discussion with other research participants and the third a later reassessment interview in participants' homes, after a long period of relationship devoid of constant documentation. This has allowed the researcher to check the validity of the information provided by the participants and revise findings.

PEER AND PARTICIPANTS' REVIEWS

The outcomes of the investigations were publicly shared via conference papers and journal articles (see Appendix 16), allowing the development of the research to be constantly evaluated by academic peers. Additionally, publications were shared with participants via emails, increasing the transparency of the work and allowing any flaws or misinterpretations to surface.

CLARIFICATION OF RESEARCHER BIAS

In the case of research that includes practice and autoethnographies, the bias of the researcher is a matter that has been extensively discussed (c.f. Griffiths 2010, 183–185; Ascott 2003, 29). As the designer of pieces that express personal viewpoints and interests, it is inevitable that the designed outcomes carry traits of the designer. At no point does this research attempt to disconnect the researcher and designer selves from each other, but rather aims to assert clarity about how they are intrinsically connected. This assertion has been done through the use of the first person singular – which delivers to the reader the source of contents with transparency – and a clear description of how the practice informs research and the research informs the practice. Additionally, a clear positioning of myself in regard to my backgrounds, interests and theoretical positioning supports academic rigour concerning bias.

CONSISTENCY AND RELIABILITY OF DATA SETS

The second point made by Creswell (2007, 209–211) on evaluating qualitative research is that of reliability of the data and its interpretation. He considers consistency in the interpretation approach, reliability of the transcriptions and the coding of data sets.

In regard to consistency, the transcriptions were all done by the researcher and translated between English and Portuguese to ensure that the terms used accurately describe the participants' intentions. All transcriptions were done with the help of F5 software, which guaranteed consistency in the use of timestamps and smart quotes throughout the work. The researcher was the single coder of all material, which was done following the same steps for all data sets, with the support of Atlas.ti software. Having easy access to all codes supported their consistent use and the translation of concepts within the different data sets. To ensure reliability, this research used consistent data interpretation throughout the work, which consisted of a combination of open and thematic coding, used iteratively.

RESEARCH QUALITY
IN PHENOMENOLOGICAL
APPROACHES

Considering research that deals with a phenomenological approach, Creswell (2007, 215- 216) suggests that the overall quality of the research is connected to: the author's prior understanding on phenomenology, the delimitation of a clear phenomenon to be studied, the steps taken to interpret data according to scientific recommendations (e.g. Moustakas 1994), and a truthful account of the experiences and their contexts. These aspects are discussed in the following paragraph.

PRIOR UNDERSTANDING
ON PHENOMENOLOGY

The first point is made clear in the preface and theoretical background of this work. In them, I describe both my previous research projects and the core theoretical background of this research, greatly influenced by the work of phenomenologist Merleau-Ponty as well as more recent revisions and articulations of his theories.

DELIMITATION OF A
CLEAR PHENOMENON

The phenomenon of interest, the intimate relationship between individuals and clothing pieces, promoted by experimental fashion, has been defined from the outset, and is revised throughout the work via the research questions.

SCIENTIFIC
RECOMMENDATIONS

The data interpretation followed the guidelines of Creswell (2007) and Moustakas (1994) with adaptations, which are defined and described in this dissertation under Chapter 4. The main adaptation made was that the 'essence' of the experiences developed over the participants' own descriptions of the experience and not on my own observations, configuring a necessary adaptation due to the nature of the data collected. Added to that, a second layer of coding was added in order to triangulate data from the different stages of the research using the previously determined initial codes.

TRUTHFUL ACCOUNT
OF THE EXPERIENCES
AND THEIR CONTEXTS

The work used quotations from the participants themselves to illustrate the narration of the experiences grouped into core concepts within the findings, guaranteeing a truthful account of the experiences. A table presented the demographics of participants in order to support contextualisation.

Lastly, this research has asserted transparent practices in order to allow collaborations in journal articles and by the abovementioned example of sharing published outcomes with research participants. The project also considered how the knowledge produced could be broadly shared, both by including details on the design process and technical drawings of all outcomes, as well as prioritising open access publications in the field of interest. All the data produced during the research has been stored in three copies – one hard and two digital – kept under the responsibility of the author herself.

9.3
Limitations

The possible research limitations must be discussed and acknowledged in regard to its sampling, design and outcomes. In relation to the sampling, the reach of the study (which was restricted in gender), cultural background and use-length coverage (maximum two years) could be seen as limitations. The call for participants in both projects was posted in social media (Instagram and Facebook – see Appendix 3). Social media's algorithms must not be overlooked, despite these postings being done under a non-restricted reach (i.e.

open to all). In the extremely unlikely event that these postings might reach complete strangers, the audience was restricted to the friends and acquaintances of those familiar with my work or myself.

In total, thirty-four women's wardrobes were intervened through two longitudinal deployment projects, with slightly differing sampling foci. Though participants' backgrounds varied, it is important to note that most of them did have a prior interest and openness to alternative ways of dealing with fashion and clothing – this was at times voiced as one of the reasons why they chose to participate in the project. More specifically to the participants in Brazil, their social privileges within Brazilian society should be taken into consideration (most of them are middle/higher class, holding a higher education degree) as it allows them a more expressive relationship with what they wear within their workspaces – e.g. universities, design agencies, artistic arenas. These limitations affect the study to the extent that they do not represent the general consumer in a broad sense, but instead the average consumer of experimental fashion.

Added to that, one political choice must be acknowledged. It is true that much of fashion research involving users has been developed by and with women (e.g. Townsend et al. 2017; Varcoe 2016; Woodward 2007; Stead 2005). Though apparently privileging a specific gender, bringing female experiences to discussion still fills a historic lack of such perspective in academia. Patti Lather (1991) points out that such efforts "correct the invisibility and distortion of female experience in ways to ending women's unequal social position" (Lather apud Creswell 2007, 26). This work is interested in fulfilling a need that has persisted for long – that of taking women's agencies into account from their (our) own perspectives.

The results must be understood within the boundaries of the socio-cultural background the research looked into. Due to that, broad generalisations could not be made. This lack of generalisation of experiences, though, is not seen as a limitation, but a confirmation of the complexity of factors that can influence such an inquiry. In this way, this work verifies the situatedness of wearing experiences in which other influences, apart from language and culture, greatly impact the results of interactions. Another point to note is that, despite the investigation having an extended time frame in comparison to previous studies, what happens in the future cannot be known. The pieces deployed are expected to have a long lifespan, which exceeds the maximum two years of investigation. That means that the interventions will continue to affect the wearers and their wardrobes in the years to come and that the research will not cover

their lifespan in its entirety. This fact stands as a particularity in comparison to other studies in research through design with deployed objects, which are frequently collected back from the users, being characterised as restricted in time and space.

Significantly, the theoretical framework was not ready at the outset but instead evolved throughout the first years of the project. If defined at an early stage, a greater intimacy with the theories used may have been developed, resulting in a more meticulous articulation between the method and the final results. Identifying the agencies was at times challenging, from the side of the participants as well as from the side of the researcher, who relied on perceived features in order to articulate the spaces of action and their affects. One response to this difficulty could be the inclusion of questions that directly address the interest of the research to participants in the reassessment interview – a strategy avoided with the expectation of guaranteeing that the participants would not be influenced by specific questions. Instead, the study relied on spontaneous expression about these affects voiced by the wearers.

Another limitation is found in how the need for a reassessment stage in the method was only recognised later, which meant that this phase was not initially communicated to the participants. The late appearance of the reassessments impacted the number of participants that responded to the reassessment interviews, especially in Dress(v.) (a total of four out of ten participants). The two-year interval between deployment and reassessment hindered access to participants, who may have moved cities or changed contact information. Lastly, the pieces produced here aimed at dressing individuals in their everyday lives, but within a very specific social group, which is those with some openness and/or interest in experimental fashion.

9.4
Contributions and applications

With this doctoral dissertation I seek to contribute to two fields: fashion practice and fashion studies. Fashion as a field of academic endeavour finds itself in its early stages of development. It still lacks an established repository of methods that truly embrace what fashion studies are about. When it comes to inquiries into the practices of fashion, such as clothing design and wearing practices, the gap is even wider. Interested in a methodology that could support

producing knowledge for practice and studies in fashion, this research adapted methods from experimental design to propose the wardrobe interventions. The resulting method is seen as one of the contributions of the work, which can be replicated or adapted by other researchers. On the one hand, the results in this dissertation can inform the development of fashion design practice. It does so by providing designers with concepts to be further explored as well as inspiration to create within an environment where the agencies of fashion are shared among its different stakeholders. On the other, it can help researchers to broaden knowledge on how individuals relate to the things they wear and their wardrobe.

This research provides fashion designers with suggestions for designing garments that can invite stronger engagements, shifting the ways humans relate to fashion. It invites researchers to explore the field, expanding their knowledge to other agencies of clothing. More specifically concerning the findings on embodied knowledge and experience, this research adds to studies in fashion that look at wearing as a methodological framework to research fashion (Sampson 2018) as well as to the already established field of wardrobe studies (Klepp and Bjerck 2014). What it brings into these fields is how the materiality of clothes is central to developing understanding of specific characteristics of garments, such as fitting. Additionally, the field of studies on wearing experiences could be developed by deploying adaptations of wardrobe interventions in different social groups and using different types of clothing production, such as mass produced or trend aware pieces. In the same way, the artifice of exploring surprise through time in clothing could also be expanded to different manifestations, taking advantage of more recently developed technologies, such as responsive textiles.

This work expects that some of its contributions can be directed specifically to fashion practice and industry. The present paradigm of fitting methods used in the fashion industry today could benefit from a revision under the light of a phenomenological approach. One possible way to address this is to acknowledge the relevance of long time-frame evaluations to a better comprehension on the qualities and agencies of clothes. Based on my experience as a commercial fashion designer, fittings remain short-lived experiences that seek to solve problems exclusive to shape and fit. Extended fittings could be implemented to yield an in-depth grasp of garment qualities and affects. In this case the pace of production in fashion must be noted and the method designed accordingly. Another possible point of interest for fashion as a creative and industrial practice is the generative methods founded on a research-based approach. They

challenge the 'mood board-sketches-samples' process of development and could support creativity in the design phase. Furthermore, the approach can be explored in education to unlock paths to a smoother creative flow with less reliance on trends and fashion imagery (see some experiments in Valle-Noronha and Assis 2018).

9.5
Final remarks

This work aimed at provoking changes to the way makers and wearers look at fashion via a research through design approach. The initial expectation was that, by exploring spaces of latency in designed clothes (motivated by an experimental approach to pattern cutting), wearers could become more aware of the importance of alternative approaches to fashion design. With the first study, much of this expectation was put to the test. While the wearers did reflect on what the deployed clothes meant for them, and on the ways they consumed fashion, little changed in the intensity of their engagement with clothes. In other words, their roles as wearers remained closer to what von Busch describes as passive wearers (2008), with scant increase to their agency. The pieces deployed, on the other hand, took a few steps into disclosing ways towards making visible the agencies of clothes.

With the second study a series of unanticipated responses arose. They led to findings on the relevance of the materiality of our bodies and the bodies of what we wear. The encounters in Wear\Wear allowed wearer and clothes to dwell in more active engagements – e.g. performing alterations and growing knowledge on the piece and on clothing in general. This framework disclosed not only how these relationships develop but also hints at the political role of designed objects (as suggested by Miller 2005, 19). For me this is, more than a conclusion, a point of departure for future investigations on design as a catalyst for change. This work does serve a political programme, even if it is not strongly prioritised. The clothes made sought to make visible something other than the clothes themselves – i.e. the relationships between wearer and worn and what results from them. It is hoped that such efforts can have political consequences especially in regard to how individuals deal with the ecologies of fashion. Relating to them not only at a surface level, as commodities, but as things we develop relationships and inevitably become with. Consequently, even though this is not a work on fashion and sustainability, it is aspired that this research can serve as a catalyst for greater awareness on what a shift in how we perceive clothes – from passive to active – may afford sustainability studies.

The autoethnography-inspired methods for creating have supported a shift in the ways I, as a designer-researcher, understand and relate to the production of clothing. On the one hand, as I gain greater awareness of how I *become with* the things I wear, insights and reflections can be implemented and tested in the production. On the other hand, as I become aware of how designers can support the visibility of artefacts' agencies, the design process becomes forever tainted by this awareness.

In this dissertation, research through design has proved to be a valuable approach to producing knowledge in the field of fashion design and research. By combining practices of making and researching, new questions arose which defined the directions of the research. Here, the emergence of new questions happened especially due to the hermeneutical approach to building knowledge, which constantly sought to articulate practice experiences with theory. One of the questions that arose early on concerned wearers' experiences, which ended up becoming the central core of this investigation. Here, this research approach has allowed the initial findings to be implemented and tested through empirical studies, due to its flexibility and embrace of practice as source of inquiry. Consequently, the focus of interest in designing shifts from delivering pleasantness to inciting change. By bringing together self-reflection and empirical considerations from wearers, the work gained in substance and validity.

Lastly, the application to practice of a theoretical framework grounded on phenomenology and material agency is seen as a potential source of development in the field. Especially, it is believed that it can support advancing investigations into articulations such as fashion and ecology, and fashion and politics, as already noted by researchers and professionals in the field (e.g. Fletcher 2016; Negrin 2016; Bigolin and Thornquist 2015). Though these articulations are still very young (see discussion in Chapter 3), provided with consistent repercussion in practice, they can effectively affect the ways we relate to the matters of fashion. Moreover, the framework raises a series of other questions that could not be explored within this research project. They affect other fields of knowledge within fashion studies, such as consumption, marketing, sociology, amongst others, and suggest future directions for research. Some of the questions raised over the course of the research project were:

— How can we communicate and display clothing and fashion in a way that their material agencies are highlighted?
— In what ways would a shift in perspective – from seeing clothes as passive to active – impact the consumption and experience of fashion?

— How can a becoming with clothes reflect on the economies of
fashion, such as in pricing strategies?
— What are the skillsets needed for fashion designers to work
towards balanced ecologies between humans and clothes?

By asking (and sharing) these questions I envision that the matters of
fashion can be disclosed as open-ended entities. As such, they are not
finished in themselves and may become defined less by their symbolic
meanings, and more by their abilities to affect and be affected. As
many have noted (Blackman 2012; Bennett 2010), this 'turn to affect'
may effect becomings and render vitality to bodily matters. When we
start becoming with clothes we grow understanding of the speeds of
production, consumption, use and discard. Additionally, we become
aware of the time clothes take to react to the shapes of our bodies, of
how light impacts their colours and matters, of the choice of soap and
frequency of washing. We also develop our sensibility to *feel* and *hear*
clothing and fashion and not only look at it, overcoming the barriers
that mass-produced design puts in the way of deeper engagements
(cf. Verbeek 2005, 15–17). Effectively, such a shift may enable
wearers to have more agency, and designers more awareness on the
powerful becomings with clothes. Through this work, I hope I can
reach one small step further into dissolving the normative statements
of fashion and its tangible outcomes as clothes. As discussed in the
introduction of this dissertation, it is expected that by designing
clothes that welcome wearers to take an active stance within the field,
more opportunity will be given for them to 'talk back to the system',
taking a more response-able path. This could mean a small step into
transforming the fashion system to become '"not only a meaning-
making machine, but a receptacle of further actions, behaviours and
events" (Brassett and Marenko 2015, 16).

If the clothes you wear had a voice, of what would they speak?

Glossary of key concepts and terms

TERM	DEFINITION	REFERENCES
Affect	The ability of a body to affect and be affected by another body. The concept is borrowed from the works of Deleuze and Guattari and does not denote feeling of emotion.	Deleuze and Guattari 1987
Agency	The term refers to the relationships and experiences between different bodies, human or non-human. It has been described as "emergent properties of material engagement" (Malafouris 2013, 149). The term is broadly discussed within actor-network-theory (Latour 2005) and theory of material agency (Malafouris 2013).	Malafouris 2013; Latour 2005
Becoming	Directly related to the concept of affect, becomings can be thought as the result of the process of affect. They refer to the state of change in affecting bodies.	Deleuze and Guattari 1987, 232–390
Creative pattern cutting	Experimental and artistic work through pattern cutting. In creative pattern cutting, different methods of pattern making can be combined.	Almond 2010; Hollingworth 1996
Deployments	Deployments are designed artefacts given to individuals in order to collect empirical data on a certain topic of interest. In this research, the term 'deployments' is used in the context of probing methods for design research.	Gaver et al. 1999; Gaver et al. 2004
Embodied knowledge	Stemming from phenomenology, the term describes the locus of knowledge as shared in the body(ies).	Merleau-Ponty 2012
Engagement	According to the online Cambridge Dictionary (2018), engagement is the fact of being involved with something. Here the word is used to describe a relationship with a deeper involvement between the parts.	n/a
Experimental fashion	A creative activity in fashion grounded on processes of experimentation, frequently articulated with research (academic or not). The experiments can focus on the design process, communication, pricing, and manufacturing, amongst others.	Valle-Noronha and Assis 2018; Granata 2012; Hallnäs 2004
Experimental pattern cutting	Creative process in pattern cutting that involves an experimental process. See 'experimental fashion'.	n/a
Interaction	Plurilateral and non-linear action in space between two or more entities. In this dissertation, the word is used to refer to the relationship between wearer and worn, where clothes are seen as interactive by nature.	n/a
Learning through wear	A process of developing knowledge on clothing and fashion through the experience of wearing.	
Learning to wear	A process of strengthening bonds between wearer and worn via trials and wearing experience.	Valle-Noronha et al. 2018
Wardrobe interventions	Method inspired by Cultural Probes that seeks to account for the particularities of clothing as objects in use. It collects longitudinal qualitative data from users (wearers) via clothing deployments.	Valle-Noronha and Wilde 2018
Worn	Artefact used as garment. The term seeks to highlight the interaction between the entities of the wearer and the clothing piece worn.	Sampson 2016; Valle-Noronha 2019

A SUMMARY OF THE KEY CONCEPTS
used in the dissertation can be found above. To find out more about them, please see the suggested references.

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Appendices

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APPENDIX 1. Literature review – journal articles in fashion practice

YEAR	JOURNAL	V.	I.	AUTHOR	TITLE	USERS INVOLVED
2009	Fashion practice	1	2	Thorogood, S.	Phashion: A Brief History and Design Philosophy	1
2009	Fashion practice	1	1	Bugg, J.	Fashion at the Interface: Designer-Wearer-Viewer	n/a
2010	IJFDT&E	3	3	Dunne, L.	Beyond the second skin: an experimental approach to addressing garment style and fit variables in the design of sensing garments	1 (90secs)
2011	Fashion practice	3	1	Berzowska, J and Laflamme, A.	PLEET: Light-emitting Electronic Garment	0
2013	IJFDT&E	6	2	Ohrn-McDaniel, L.	Shape creating Shape	n/a
2013	IJFDT&E	6	2	Townsend, K. and Mill, F.	Mastering Zero: How the pursuit of less waste leads to more creative pattern cutting	n/a
2013	IJFDT&E	6	3	Khar, S. and Ayachit, S.	Looking backward to go forward- use of traditional Indian pattern making to develop contemporary methods for global fashion	5 interviewees
2013	IJFDT&E	6	2	Page, A.	Creative Pattern Technology	n/a
2013	Fashion practice	5	1	Radvan, C.	Inclusively Designed Womenswear through Industrial Seamless Knitting Technology	28 total
2013	Fashion practice	5	1	Gordon, L. and Guttmann, S.	A user-centered approach to the redesign of the patient hospital gown	n/a + 4 interviewees
2013	Fashion practice	5	1	Black, S. and Torlei, K.	Designing a New Type of Hospital Gown: A User-centered Design Approach Case Study	n/a
2014	IJFDT&E	7	1	Huantian Cao et al.	Development and Evaluation of apparel and footwear made from renewable bio-based materials	Total 50 (10 wear tests and 40 surveys)
2014	Clothing cultures	1	2	Fraser, H. D.	CloTHING(s) as Conversations:	n/a
2014	IJFDT&E	7	1	Chae, M. and Evenson, S.	Prototype development of golf wear for mature women	Interviews, focus groups
2014	Dobras	7	15	Araujo, M. and Carvalho, M.	Antropometria e Ergonomia no design para cadeirante desportista	n/a
YEAR	JOURNAL	V.	I.	AUTHOR	TITLE	USERS INVOLVED
2015	Dobras	8	17	Anicet, A. and Ruthschilling, E.	Subtraction Cutting aplicada ao design de moda sustetavel	n/a

ASSESSED USERS	TYPE ASSESSMENT	SUB-FIELD	RESEARCH METHOD / FRAMEWORK
1	Medium term	Fashion	Descriptive study of own practice
n/a	Medium term	Performance / costume	Multi-method: interviews + 3 case studies + 2 performances. Garments tested in fashion shoots, video, live performances.
1	Short term	Fashion & technology	Quantitative. Iterates the design through 4 garments to evaluate 5 implementations.
0	No	Fashion & technology	Discusses the design approach
0	No	Pattern cutting	Qualitative, explorative approach. Experiments with circular shape patterns using 3 approaches.
0	No	Pattern cutting	Qualitative, explorative approach. Investigates and evaluates the process of mastering the zero waste approach to pattern cutting
0	No	Pattern cutting	Qualitative. Does a series of interviews (like workshops) to understand traditional modes of making Indian clothes and grasp ideas for contemporary practice.
0	No	Pattern cutting	Qualitative, explorative approach. Experiments with 3d pattern cutting technology
8	Short term	Fashion & minorities	Two stage: 1st interviews and test of samples. 2nd test on wider range on participants and questionnaire. 8 participants in the first stage + 20 second
n/a	N/a	Fashion & health	5 focus groups and 4 interviews (2 patients 2 staff). Decisions also informed by literature
n/a	N/a	Fashion & health	Participant observation, interviews
10	Short term	Fashion & sustainability	Quantitative. Mixes wear tests and surveys to evaluate acceptance of products.
n/a	N/a	Experimental fashion	Qualitative, mixed. Ethnography, diary keeping, and interviews
n/a	N/a	Fashion & sportswear	Qualitative, follows FEA framework to fashion design. Prototypes are done by students
n/a	No	Pattern cutting	Qualitative, explorative approach. Direct observation and questionnaires.
ASSESSED USERS	TYPE ASSESSMENT	SUB-FIELD	RESEARCH METHOD / FRAMEWORK
0	No	Pattern cutting	Explorative design, application of subtraction cutting to sustainable fashion

2015	Fashion practice	7	1	Janigo, K. and Wu, J.	Collaborative redesign of used clothes as a sustainable fashion solutions and potential business opportunity	n/a
2015	IJFDT&E	8	1	Kooroshnia, M., Thornquist, C. and Clausen, L.	Performative Interactions between body and dress: thermochromic print in fashion	2 models
2015	IJFDT&E	8	2	Huantian Cao et al.	Applying a sustainability performance measurement tool in designing and developing automotive employee uniforms	Interviews (number not available)
2016	IJFDT&E	9	3	Choi, K.	Practice-led origami-inspired fashion design: out of the frame: flight by paper plane.	n/a
2016	IJFDT&E	9	2	James, A.M., Roberts, B.M. and Kuznia, A.	Transforming the sequential process of fashion production: where zero-waste pattern cutting takes the ead in creative design	3 interviews with brands
2016	IJFDT&E	9	2	Lindqvist, R.	On the relationship between the shear forces in human skin and the grain direction of woven fabric	Live models fittings
2017	Fashion practice	9	1	Catterall, K.	Clothing as Shelter: An Experiment in Ontological Designing	n/a
2017	Clothing cultures	4	3	Townsend, K., Sissons, J. and Sadkowska, A.	Emotional Fit: Developing a new fashion methodology with older women	3*20 + 5
2017	Fashion practice	9	3	Lapolla, K.	A Co-creative approach to designing formalwear for female teenagers complying with dress codes	228 (survey) + 12 (workshop)
2017	IJFDT&E			Saeidi, S. and Wimberley, V.	Precious Cut: exploring creative pattern cutting and draping for zero-waste design	Evaluated by 3 peers
2017	IJFDT&E	10	2	Ho, C. and Au, Y.	Development of functional racing singlet for professional rowers	11 rowers
2018	Fashion practice			Mcquillan et al.	Make/Use: A System for Open Source, User-Modifiable, Zero Waste Fashion Practice	5

0	No	Fashion & sustainability	Workshops and questionnaires — quantitative analysis of engagements
2	Medium term	Surface design	1 models
n/a	No	Fashion & sustainability	Quantitative evaluation of a design process with Higgs 1.0 Index. Done between research, car company and uniform manufacturer. Interviews, site visits and fittings were done.
0	No	Pattern cutting	Experiments with paper plane folds to create garments.
0	No	Pattern cutting	Experiments tested on dummy. To compares this to other modes of making patterns, interviews designers/pattern cutters in 3 diff. companies
n/a	Short term	Pattern cutting	Research by design, qualitative, investigates the lines in Langer model and proposes adaptation to pattern cutting.
0	0	Experimental fashion	Speculative design - design iterations, tested on streets - sustainable design
0	No	Fashion & minorities	Qualitative . 3 workshops (ard 20 participants each) + semi-structured interviews (5 participants)
0	No	Fashion	Large Survey (228) + Co-creative workshop (12 participants)
3	Short term	Pattern cutting	Qualitative, made 3 garments to explore zw approach mixing with TR technique (digital)
11	Short term	Fashion & sportswear	Interviews + 2 fittings
5	Medium term	Pattern cutting	Co-creative activity, in-team user tests (not long term assessments)

APPENDIX 2. Literature review – doctoral dissertations in fashion practice

YEAR	UNIVERSITY	AUTHOR	TITLE
2005	UAL	Stead, L.J.	The Emotional Wardrobe': A Fashion perspective on the Integration of Technology and Clothing
2006	UAL	Bugg, J.	Interface: Concept and Context as Strategies for Innovative Fashion Design and Communication
2010	RMIT	Campbell, M	The development of a hybrid system for designing and pattern making in set sleeves
2011	Queensland University	Dunlop, P.	Unravelling Design: Fashion, Dressmaking, Ethos
2012	University of Brighton	Haffenden, V.	The application of existing digitally-controlled flat-bed weft kitting to fashion knitwear for the individual body shape of women
2012	RMIT	Gwilt, A.	Integrating sustainable strategies in the fashion design process: A conceptual model of the fashion designer in haute couture
2012	Hong Kong Polytec.	Au, Y.	Creation of innovative fashion and textile collection based on the conceptual fashion design process model for Hong Kong.
2012	RCA	Lee, Y.	Seamlessness: Making and (Un)Knowing in Fashion Practice
2012	RMIT	Interlandi, P.	[A]Dressing death: fashioning garments for the grave
2013	UTS	Rissanen, T.	Zero-waste fashion design: a study at the intersection of cloth, fashion design and pattern cutting
2014	RMIT	Van Kopplen, A	Envelope: Interpretations of a design practice engaged in sustainability and fashion
2014	Indiana University	Yue, P.	Fashion thinking and sustainable HCI
2014	RCA	Norris-Reeves, S.	Constructing a Narrative of Fashion Practice as Inquiry
2014	Queensland University	Finn, A.	Designing Fashion: An exploration of practitioner research within the university environment
2014	RMIT	Splawa-Neyman, T.	care making. Practices of Gleaning, using and future fashioning
2014	Borås	Landahl, K.	Form Thinking in Knitwear Design
2014	Borås	Larsen, K.	The Choreographed Garment - movement directed by dress
2015	Borås	Lindqvist, R.	Kinetic Garment Construction. Remarks on the foundations of pattern cutting
2016	TU Delft	Van der Velden, N.	Making Fashion Sustainable - The role of designers
2016	SST Borås	Gunn, M.	Body Acts Queer: Clothing as a performative challenge to heteronormativity
2016	RMIT	Varcoe, A	Feeling Fashion
2017	RMIT	Zilka, L.	Floppy effects: exploring in the territory between architecture, fashion and textile design.

USERS INVOLVED	TYPE OF ASSESSMENT	METHODS	SUB-FIELD
0	0	Uses 'emotional science survey', takes wearers into account	Fashion & technology
n/a	medium term	Performers, dancers probe the garments in action	Costume design
0	0	Draws a typology of sleeves and, after analysing them, proposes a new model	Pattern cutting
15	0	15 participants in project wearer/maker/wearer	Fashion & sustainability
0	0	Systematic design tests, research for design	Fashion & minorities
0	0	Critical review of practices in use, practiced via textiles samples and book editing	Fashion & sustainability
0	0	50 interviews + 8 expert interviews	Fashion design
1	n/a	Autoethnography	Fashion & the expanded field
n/a	medium	Projects exposed and exhibited on living bodies. Uses photographs and diaries to record process.	Fashion & death
n/a	n/a	investigates own practice, developing a theory through iterative productions	Fashion & sustainability / pattern cutting
0	0	Self-documentation and articulation with theory	Fashion & sustainability
0	0	Blevis Model for sustainable design (2007), interviews 22 designers on fashion + interaction	Fashion & technology
0	0	Diaries, photos, etc to document researchers own practice + interviews with 5 designers	Fashion design
0	0	Review of literature, investigation of own practice	Fashion research
1	long	Auto ethnographic approach to practice-based research	Experimental fashion
n/a	short	Reports the process and tests shapes in dummies and living bodies	Experimental fashion
n/a	medium	Practice-based research / research through design	Performance
n/a	short	Record processes and includes students in applying the method. Fitting in real body.	Pattern cutting
0	0	Case study	Fashion & sustainability
n/a	medium	Programmatic approach via projects. Participants wear author's designs and testify	Fashion & gender
n/a	medium	Uses illustration as a method to understand fashion experience	Fashion & performance
1	n/a	Self-documentation	Fashion & architecture

APPENDIX 3. Example of call for participants
/ Project Dress(v.) in social media

APPENDIX 4. Form for prospective participants project Dress(v.)

Participant Registration Forms | Formulário Participantes
*Required

1. **Full Name | Nome Completo** *

_____

2. **Date of Birth | Data Nascimento** *

Example: 15 December 2012

3. **Occupation | Profissão** *

_____

4. **Address | Endereço** *

_____
_____
_____
_____

5. **ZIP Code | CEP** *

_____

6. **Phone | Telefone**

_____

7. **E-mail** *

_____

8. **Shirt/Tops Size | Tamanho Blusa/Camisa** *
(select one of the sizes that fit you best)
Mark only one oval.

○ 34
○ 36
○ 38
○ 40
○ 42
○ 44

9. **Bottoms Size | Tamanho Calça/Saia** *
Mark only one oval.

○ 34
○ 36
○ 38
○ 40
○ 42
○ 44

10. **Height | Altura (cm)** *

_____

11. **Do you have any juliavalle piece? | Voce possui alguma peça juliavalle?** *
Mark only one oval.

○ yes | sim
○ no | não   After the last question in this section, stop filling in this form.

12. **List your juliavalle pieces below and inform an average frequency of use (times used per month) | Liste suas peças juliavalle abaixo e informe a frequência de uso (numero de vezes por mês)**
e.g: 1. White Shirt Generator (1x/month)

_____
_____
_____
_____
_____

Powered by
Google Forms

APPENDIX 5. Reassessment form for project Dress(v.)

Reassessment Dress(v.)
Depois de 2 anos em uso, como vai sua peça?

*Required

1. **Nome**
   _____

2. **Sua peça continua em uso?** *
   Mark only one oval.

   ⭕ Sim   Skip to question 4.
   ⭕ Não   Skip to question 3.

Camisa: Interrompida

3. **Como foi o uso até o momento em que parou de usá-la?**
   e.g.1: Após a discussão em grupo, parte do projeto, o uso da peça diminuiu. No primeiro ano usei eventualmente, ceca de 2 vezes por mês. Parei de usar logo em seguida, por mudança no tamanho do manequim. e.g.2.: Nunca mais usei a peça e doei para minha tia que gosta muito de camisas brancas.
   _____
   _____
   _____
   _____
   _____

Stop filing out this form.

Alterações e Uso

4. **Você fez alguma alteração na peça? Caso positivo, qual e por que?**
   _____
   _____
   _____
   _____
   _____

5. **Descreva a frequência com que usou a peça nos últimos 2 anos. Indique os momentos e as razões para alterações na frequência de uso.**
   e.g.1: Após a discussão em grupo, parte do projeto, o uso da peça diminuiu. No primeiro ano usei eventualmente, ceca de 2 vezes por mês. Nos últimos 12 meses usei intensamente durante um período de férias na praia durante os meses de julho e agosto, mas fora isso o uso foi inferior a uma vez por mês. e.g.2.: Nunca mais usei a peça e doei para minha tia que gosta muito de camisas brancas.
   _____
   _____
   _____
   _____
   _____

Camisa: Experienciada

6. **Pense na camisa que recebeu e em quais características considera importantes nela. Você possui outras peças com características similares? Descreva essas características e as peças.**
   e.g. engraçada por causa da forma, confortável por causa do tecido, difícil de usar pela cor, elegante por ser uma camisa de tecido, carrega memórias, etc.
   _____
   _____
   _____
   _____
   _____

7. **Há algo no seu comportamento de consumo atual que acredita poder ter sido motivado pela experiência com esta peça? E qual você acredita ter sido a razão para esta motivação?**
   _____
   _____
   _____
   _____
   _____

8. **Você acha que esta peça (incluindo sua forma, como foi embalada, etiqueta, etc.) sugeriu algo para você diferente das outras peças de roupa que você possui? Descreva.**
   _____
   _____
   _____
   _____
   _____

9. **Em quais destas situações você acha que tem uma ganha mais conhecimento sobre a peça**
   Tick all that apply.

   ☐ Ao lavar
   ☐ Ao passar
   ☐ Experimentando com outras peças de roupa
   ☐ Em uso, no corpo
   ☐ Com o comentário/opinião de outras pessoas

APPENDIX 6. Consent of participation in projects

Aalto University
School of Arts, Design
and Architecture

DRESS(V.)
Consent to Participate
Researcher Copy

1 (1)

Consentimento de Participação em Dress(v.)

Eu,_____,
fui claramente informada sobre as etapas e
procedimentos da pesquisa de doutorado de Julia Valle
Noronha na Aalto University of Art, Design and
Architecture, Helsinki, departamento de Design e
apresentei interesse em participar dos estudos
desenvolvidos pela aluna acima citada. Estou ciente e
compreendo o conteúdo da pesquisa e como deverá
ocorrer minha participação.

Esta pesquisa inclui
[ ] encontro inicial (entrega kit, informação, foto)
[ ] uso de peça de roupa recebida (6 vezes)
[ ] preenchimento de caderno personalizado
[ ] encontro final (relato experiência, entrevista)
[ ] preenchimento de curvas de experiência
[ ] entrevista

[ ] Concordo participar   [ ] Não concordo participar

__/__/____ _____
Data   Local

_____
Nome da Participante

_____
Assinatura da Participante

_____
Assinatura da Pesquisadora

Informação para Contato
Julia Valle Noronha
julia.valle@aalto.fi
tel. +358 40 545 5050 | +55 31 8806 8517

Eu me voluntario a participar nos estudos. Posso rescindir ou abortar
minha participação nos estudos a qualquer momento durante o
processo informando a estudante citada acima. Rescindindo ou
abortando a minha participação não afetarei minha posição em
nenhum momento. Posso também revocar este consentimento de
participação, e neste caso as informações relacionadas a mim não
serão utilizadas no estudo. Resultados relacionados a mim podem ser
usados para fins acadêmicos (e.g. publicações). Este estudo segue as
condutas especificadas em http://www.tenk.fi/en/responsible-conduct-
research-guidelines.

Minha participação tem como recompensa uma peça de vestuário
feita sob medida de valor aproximado EUR200 (duzentos euros).

Consent to Participate in Dress(v.)

I, _____,
have been clearly informed on the stages and
procedures of the doctoral research led by Julia Valle
Noronha at Aalto University of Art, Design and
Architecture, Helsinki, Design department and have
showed interest in participate in the studies developed
by the student cited above. I am aware and understand
the contents of the research and how my participation
will occur.

This research includes
[ ] initial meeting (kit delivery, clarifications, picture)
[ ] use of given garment (6 times)
[ ] notebook filling
[ ] final meeting (experience report, short interview)
[ ] user experience curves filling
[ ] interview

[ ] I agree to participate [ ] I do not agree to participate

__/__/____ _____
Date and Place

_____
Name of Participant

_____
Signature of Participant

_____
Signature of Researcher

Contact Information
Julia Valle Noronha
julia.valle@aalto.fi
tel. +358 40 545 5050 | +55 31 8806 8517

I volunteer to participate in the studies. I may choose to rescind or
abort my participation in the studies at any time during the studies,
by informing the student cited above. Rescinding or aborting my
participation will not affect my position at any point in time. I may
also revoke this consent to participate in the study, in which case
information pertaining to me will not be used in the studies. Research
results pertaining to me may be used in scientific reporting (e.g.
publications). This study follows the responsible conduct of research,
legislation and guidelines available at http://www.tenk.fi/en/responsible-
conduct-research-guidelines.

My participation will be rewarded with a garment piece in
approximate EUR200 (two hundred euros) value.

Aalto University
School of Arts, Design and Architecture
Doctoral Studies | Design Department

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Room 8110

Julia Valle Noronha
julia.valle@aalto.fi
Doctoral Candidate

APPENDIX 7. Dress(v.) informative leaflet

Ficha Técnica
Estilo Julia Valle
Joalheria Julia Valle e Marina Noronha
Curadoria Marina Noronha
Execução Silvia da Costa

Agradecimentos
Carlos e Valquiria Noronha, Namkyu Chun, Kirsi Niinimäki e Jack Whalen.

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R. Ramalhete, 611 . Serra . BH / MG . Brasil

vestir (latim vestire) v.t.d. 1 cobrir (o corpo) com roupa; envolver em roupa; ajustas as vestes ao corpo de alguém. 2 ajustar ao próprio corpo; enverga; envolver-se em. 3 pôr vesta; trajar. 4 fazer ou talhar roupa para alguém 5 comprar roupa para seu uso 6 socorrer com roupa 7 calçar (luvas) v.t.d. 8 adornar, atapetar, cobrir, forrar, revestir 9 adornar, enfeitar v.p.r. 10 cobrir-se, revestir-se. v.t.d. 11 Aceitar, adotar, tomar. v.t.d. 12 Disfarçar, encobrir v.p.r. 13 Imbuir-se, impregnar-se. v.p.r. 14 Disfarçar-se v.t.d. 15 Tingir-se de, tomar a cor de v.t.d. 16 Tingir Antôn (acepções 1, 2, 3, 6, 8, 10, 12 e 13): despir

(v.)

Vestir

Este trabalho se inicia com uma pesquisa auto-etnográfica. Notações são feitas a partir de cuidadosa observação do próprio vestir e informam gestos e traços. Ora mais simples, ora mais complexos, eles estão diretamente relacionados com a peça que foi vestida. Esses traços, por sua vez, são traduzidos em moldes planos e, em uma nova tradução, se transformam em peças de roupa e acessórios.

O que este projeto intenciona é trazer à tona a relevância da ação de vestir. A importância de uma ação que é ao mesmo tempo tão pessoal e tão pública. De uma forma ou de outra, é este momento que informa como você sairá de casa para o trabalho, para um passeio, para o jantar. É este diálogo travado entre o corpo e a roupa que constrói a imagem que você compartilha com o mundo e **a forma com que consome o que veste**. Nos parece então que antes de focar no resultado visual, essas ações, valores e conversas demandam atenção.

As peças produzidas aqui são reflexos de um vestir. E espero que elas possam travar bons diálogos (e bons reflexos) com quem desejar superpor nelas o seu próprio vestir.

Processo

Ao longo da criação deste projeto, cada passo dado é anotado em um caderno. A questão: a compreensão de um processo criativo. A resposta: talvez a ação de vestir e criar roupas tenham mais interseções que espero. Enquanto uma ação produz o que alimenta a outra, ambas tratam de forma muito particular o corpo, as escolhas (visuais, sociais, políticas?), o se movimentar. Ambas são construídas por métodos, claramente definidos, mas com os quais negociamos desvios, para um maior conforto, para um melhor diálogo.

Pesquisa

Parte das peças deste projeto foram distribuídas a mulheres para que elas pudessem também compartilhar seu próprio vestir. Os dados produzidos através de design probes serão analisados e seus resultados irão informar a pesquisa de doutorado em Design na Aalto University of Arts, Design and Architecture Helsinki.

Entre 06:23 e 07:20 me dispo da roupa que dormi e me visto de novo.
As vezes várias vezes.
Em mais (ou menos) camadas.
Com maiores ou menores acessórios.
Por mais que sozinha, no quarto, o que visto em mim é também visto por você. Indiretamente. Não que façamos todos parte de um grande BigBrother, mas, de alguma forma, fazemos. Enquanto eu ou você nos vestimos, projetamos em nós também outros olhares e outros julgamentos.

To Dress

This work begins with an auto-ethnographic research. Notations are made from a careful observation of the action of dressing and inform gestures and traces. Sometimes simpler, sometimes more complex, they are directly related to the piece that was dressed. These traces, then, are translated into flat patterns and, in a new translation, are transformed into pieces of garment and accessories.

What this project aims at is to bring to light the relevance of the action of dressing. To bring to light the importance of an action that is at the same time so personal and so public. In a way or another, it is this moment that informs how you will leave home to work, for a stroll, for dinner. It's the dialogue established between the body and the clothes that builds the image you share with the world and the way you consume what you wear. It seems, thus, that before focusing on visuals, these actions values and conversations demand attention.

The pieces produced here are reflexes of a dressing. And I hope that they can build great dialogues (and reflections) with whoever wishes to superpose on them their own dressing.

Process

Along the creation of this project, each step is written down in a notebook. The question: the understanding of a creative process. The answer: maybe the action of wearing and making clothes share more intersections than I expected. While one action feed the other, both deal in a very particular way with the body, the choices (visual, social, political), the moves. Both are build by methods, clearly defined, but with which we negotiate detours, for a better comfort, for a better dialogue.

Research

Some of the pieces in this project have been distributed to women so they too could share their own dressing. The data produced through design probes will be analysed and the results will inform the doctoral research in Design at the Aalto University of Arts, Design and Architecture, Helsinki.

(v.)
Between 6:23 and 7:20 I undress of the clothes I slept with and get dressed.
Sometimes, many times.
In more (or less) layers.
With bigger or smaller accessories.
No matter how alone I am, in my room, what I dress on me is also seen by you. Indirectly. Not that we are all part of a Big Brother, but, somehow, we all are. While you or I get dressed, we project on ourselves the gazes and judgments of others too.

APPENDIX 8. Diary spreads: General instruction on the overall study, basic information on how to collect data on one's self wearing experiences and sample of diary pages with questions and blank space.

2

DIÁRIO\DIARY

Nome | Name

Data de Entrega | Delivery Date

Data de Coleta | Return Date

WEAR\WEAR

3

Experimentações vestíveis em curva de experiência

Durante 30 dias estudei como me relacionava com minhas peças de roupa através de um método chamado curvas de experiência. Este método pretende compreender e permitir análises a respeito de relações entre pessoas e objetos em um longo período de tempo. Neste projeto, as curvas serviram de dados visuais para a construção da peça que você acaba de receber. As imagens a seguir são um pequeno diário destes 30 dias, e as curvas que acompanham representam meus sentimentos sobre cada uma da peças. Às vezes elas entregam apenas sua funcionalidade primária, de proteção ou aquecimento, por exemplo. Mas às vezes também elas carregam histórias densas e longas, e os mais intensos sentimentos.

A idéia aqui é, através da experiência, amplificar nossa compreensão sobre o vestir, o usar, o permitir que o tempo se manifeste nos objetos e compreender como nos relacionamos com essas mudanças. Assim como tantos outros objetos não-animados, a sua peça vive com/por/através de você! Espero que tenham excelentes experiências, juntas.

Wearing experiments on experience curves

During 30 days I studied how I related to my clothing pieces using a method called 'experience curves'. This method aims at understanding and allowing analysis about the relations between people and objects in a longer time frame. In this project, the curves served as visual data for the development of the piece you have just received! The following images are a small diary of these 30 days, and the curves that are presented together with them represent my feelings about each of the pieces. Sometimes they deliver only their primary function, such as protection or warmth. But sometimes they also carry dense and long stories, and the strongest feelings.

The idea here is that, through experience, we can amplify our understanding about 'wear', both the verb and the noun, in its many possible meanings. It is also to allow that time manifests in worn objects and understand how we relate to these changes. Just as many other non-animated objects, this piece lives with/for/through you! I hope you enjoy the experiences, together.

4

INSTRUÇÕES

Este projeto faz parte da pesquisa de doutorado em Design que desenvolvo na Aalto University of Arts, Design and Architecture em Helsinki. A pesquisa visa compreender como as pessoas se relacionam com peças de autor. Participando dela, você pode contribuir ativamente para um estudo que intenciona promover o desenvolvimento de um sistema mais igualitário na moda. A sua participação irá acontecer da seguinte forma:

Primeiro encontro

Você receberá um kit desenvolvido especialmente para o projeto: uma bolsa contendo uma peça feita para você, um livro em branco para você registrar uas experiências, folder de instruções, termo de concessão de informações e cartão de visita com contatos. Neste encontro faremos uma foto sua vestindo a nova peça. Esta imagem funcionará como registro do seu primeiro contato com ela. Neste dia, você também assinará o termo de participação.

Com o seu kit

Ao longo de dois meses você deverá usar a peça de vestuário que recebeu como usaria uma outra peça qualquer. Sempre que vesti-la, você deverá registrar suas experiências utilizando o material disponibilizado, como preferir. Algumas sugestões sobre como registrá-las serão dadas a seguir: No entanto, sinta-se a vontade para inventar outras! Tirar fotos, desenhar, colagens, todas as formas de registros serão bem vindas. Você também pode alterar a peça como preferir. Ela é sua.

Após finalizado

Marcaremos um novo encontro quando você finalizar seus registros. Neste dia, o caderno onde registrou suas experiências será recolhido e conversaremos brevemente sobre o processo. Esta conversa será gravada para fins exclusivamente acadêmicos. Os registros de áudio não serão disponibilizados a terceiros e poderão ser acessados exclusivamente pela autora da pesquisa. Caso deseje, você pode solicitar uma cópia de todo o material. A peça continua com você, para ser usada por ainda muitos anos!

Próximos passos

Você será informada sobre o adamento da pesquisa, os resultados que envolvem sua participação, bem como a análise destes resultados.

O mais belo obrigada por participar!

INSTRUCTIONS

5

This project is part of the doctoral research in Design that I develop at the Aalto University of Arts, Design and Architecture, Helsinki. The research aims at understanding how people relate to 'authorial pieces'. Taking part in it, you can actively contribute to a study that intends to promote the development of a more equalitarian system in fashion. Your participation will happen in this way:

First meeting

You will receive a kit developed especially for you containing: a piece of garment, a blank notebook for you to record your experiences, an agreement of participation and a name card with contact information. On this first meeting we will take a picture of you wearing the new piece. This image will be used as a record of your first encounter with it. On this date, you will also sign the participation agreement.

With your kit

During the period of two months you shall use the piece of garment you have received as you would wear any other piece. Everytime you wear it, you will write down your experiences using the material provided. Some suggestions on how to do it will be given next. But you are encouraged to create others. Taking pictures, drawing, collage, any kind of annotation is most welcome! You can also alter the piece as you prefer. It is yours!

After finished

We will schedule a new meeting when you have finished your annotations. On this day, the notebook will be collected and we will talk briefly about the process. The piece of garment, though, stays with you, it is yours to be used for still many years! This conversation will be recorded for exclusively academic purposes. The audio recordings will not be available to tertiaries and will be accessible only by the research author. Case desired, you can request a copy of the material.

Next steps

You will be informed on the development of the research and the results that envolve your participation, as well as the analysis of this results.

The most beautiful thankyou for participating!

INFORMAÇÕES BÁSICAS

Gostaria que respondesse a algumas perguntas simples a cada uso. Elas irão ajudar na análise deste material. Você poderá respondê-las nas páginas a seguir linha a linha ou utilizar as respostas como base em uma narrativa. Elas são:

Uso n°
Preparação (limpeza, passar a ferro, etc.)?
Quando e onde? (Data e Local)
Quanto tempo demorou para escolher suas roupas e se vestir?
Este tempo foi maior ou menor que o normal?
Para ir aonde?
Com quem encontrou ou esteve?
Por quanto tempo você usou a peça?
Como você se sente?
O que você pensa sobre a peça?

Qualquer outra informação será muito bem vinda! Você pode contar histórias, narrar o seu dia com a peça, fazer registros fotográficos com seu celular ou outra câmera, desenhar, etc. Você pode também refletir sobre suas experiências, sobre como você usa a peça e sobre como se sente. Ou seja, sinta-se completamente livre para registrar suas experiências!

Para facilitar o uso deste material, divisórias foram criadas. Cada divisória corresponde a uma ocasião de uso da peça. As perguntas acima estão copiadas em cada uma dessas divisórias.

Caso tenha tirado fotos, você poderá enviá-las para o endereço de e-mail julia.valle@aalto.fi. Cuidarei da impressão das imagens e elas serão anexadas a este caderno. Você pode escolher se prefere que essas imagens sejam utilizadas em materiais acadêmicos (como artigos) ou não.

Qualquer questão ou dúvida que encontrar durante o processo, entre em contato comigo via e-mail (julia.valle@aalto.fi) ou telefone (31 8806 8517).

Vamos começar?

BASIC INFORMATION

I would like you to answer to a few simples questions upon each use. They will help in the analysis of this material. You can reply to these questions on the following pages, line by line. The questions are:

Use n°
Preparation (cleaning, ironing, etc.)?
When and where (date and place)?
How long did you take to choose your clothes?
Was this amount of time longer or shorter than usual?
To go where?
Who have you met?
How long have you worn the piece for?
How do you feel?
What do you think about the piece?

Any other information will be most welcome! You can tell stories, describe your day, make photographic registries with your mobile phone or camera, draw, etc. You can also write your reflexions on your experiences, on how you wear the piece and how you feel. That is, feel absolutely free to choose the most suitable form of sharing your experiences!

To make the use of this material easier some divisions were created. Each of them corresponds to an event of day of use of the garment and the questions above are repeated on each division to help you with filling them.

If you have taken pictures, you can send them to my e-mail address julia.valle@aalto.fi. I will take care of printing the images and attaching them to this notebook. You can choose whether you want these images to be shared as part of the research (such as academic publications) or not.

If any question or doubt arises during the process, get in touch with me via e-mail (julia.valle@aalto.fi) or by phone (040 545 5050).

Let's get started!

Uso n°
Use n°

Preparação (limpeza, passar a ferro, etc.)?
Preparation (cleaning, ironing, etc.)?

Quando e onde? (Data e Local)
When and where (date and place)?

Quanto tempo demorou para escolher suas roupas e se vestir?
How long did you take to choose your clothes?

Este tempo foi maior ou menor que o normal?
Was this amount of time longer or shorter than usual?

Para ir aonde?
To go where?

Com quem encontrou ou esteve?
Who have you met?

Por quanto tempo você usou a peça?
How long have you worn the piece for?

Como você se sente?
How do you feel?

O que você pensa sobre a peça?
What do you think about the piece?

Nos conte mais!
Tell us more!

APPENDIX 9. Form to prospective participants for project Wear\Wear

WEAR\WEAR

WEARING EXPERIMENTS ON EXPERIENCE CURVES
EXPERIMENTAÇÕES VESTÍVEIS EM CURVAS DE EXPERIÊNCIA

Personal Information / Informações Pessoais

Please fill the fields below with your personal information. This data will NOT be shared with anyone!
Por favor complete os campos abaixo com suas informações pessoais. Estes dados NÃO serão
compartilhados!

1. **Name|Nome**

2. **Date of Birth | Data de Nascimento**

   Example: 15 December 2012

3. **Address | Endereço**

4. **E-mail**

5. **Phone number | Telefone**

6. **What size tops do you take? | Qual o seu tamanho para blusas?**

7. **Allergies in clothing? | Alergia em roupas?**
   Tick all that apply.

   ☐ Do you have any allergy in clothing, such as metallic parts, polyester, etc? Check the box case
   positive.

   ☐ Você tem alguma alergia em peças de vestuário, como partes metálicas, poliéster, etc? Marque a
   caixa caso positivo.

OBRIGADA! KIITOS! THANK YOU!

I will shortly get in touch with you to plan the production and delivery of your piece!
Entrarei em contato em breve para planejar a produção e entrega da sua peça!

Powered by
Google Forms

APPENDIX 10. Form for selected participants in project Wear\Wear

WEAR\WEAR Participant(e)s

Informações adicionais sobre participantes selecionados para o estudo
Additional information about participants selected for the study

1. **Your name**

_____

2. **Medida Busto | Bust Measure (cm)**

_____

3. **Medida Cintura | Waist Measure (cm)**

_____

4. **Medida Quadril | Hips Measure (cm)**

_____

5. **Altura | Height (cm)**

_____

Alergia | Allergy

6. **Você é alérgica à algum dos componentes abaixo? Are you allergic to any of the components below?**
   Tick all that apply.

   ☐ Alcool | Alcohol
   ☐ Poliéster | Polyester
   ☐ Pigmentos escuros | Dark Dyes
   ☐ Lactona | Lactone

Preferência Comprimento | Lenght Preference

Quero que você fique feliz com sua nova peça de roupa!
I want you to be happy with your new piece of garment!

7. **Qual tipo de peça prefere? | What kind of garment do you prefer?**
   Mark only one oval.

   ○ Blusa longa | Long blouse (60-70cm)
   ○ Vestido curto | Short Dress (80-95cm)
   ○ Vestido midi | Midi dress (110-120cm)

Powered by
Google Forms

APPENDIX 11. Informative Leaflet on Project Wear\Wear

WEAR\WEAR

Wearing experiements on experience curves

WEAR\WEAR uses academic research to inform the design of clothes. During 30 days I studied how I related to my own clothing pieces using a method called 'experience curves'. This method aims at understanding how the relations between people and objects in a longer time frame. The images presented here are a small diary of these 30 days, and the curves that accompany them represent my feelings about each of the pieces regarding comfort, frequency of use, versatility and overall relationship. In this project, the curves did not serve as research data but as visual information for the creation of garments. Clothes sometimes deliver mainly their primary function, such as protection or warmth. In other times they carry also long dense stories, and the strongest feelings. This is the background of this project.

The pieces were designed with the intention of integrating self-alterations along time, accoding to the way the wearer does the maintenance and caring of the piece. The patterns are extremely simple and hide surprises, which will be revealed as the garment is worn. For that effect, materials broadly used in clothing industry since the 1980s have been selected and put to test here. Some maintaining their original function and some with reconfigured functions.

The idea in WEAR\WEAR is that, through experience, we can amplify our understanding about wearing (both the verb and the noun). Here we allow time to manifest in worn objects and broaden understanding on how we relate to these changes. These proposals come from questions raised in previous researches in the field of fashion. Why do we love a new piece of clothing? What if not-new clothes could surprise us too?

I believe that, just as many other non-animated objects, a piece of clothing lives with, for, and through you. And case the opportunity arises, I hope you can have excellent experiences, together.

julianette

WEAR\WEAR

Experimentações vestíveis em curvas de experiência

O projeto WEAR\WEAR é uma tentativa da pesquisa academica informar o design. Estudei durante 30 dias como me relacionava com minhas peças de roupa através de um método chamado 'curvas de experiência'. Este método permite compreender e analisar relações entre pessoas e objetos em um período mais longo de tempo. As imagens apresentadas aqui são uma amostra deste diário de 30 dias, e as curvas que acompanham representam meus sentimentos sobre cada uma da peças acerca de conforto, frequência de uso, versatilidade e relacionamento geral. Neste projeto, as curvas não serviram de dados para pesquisa, mas de informações visuais para a construção de peças de vestir. Às vezes elas entregam apenas sua funcionalidade primária, de proteção ou aquecimento, por exemplo. Mas às vezes também elas carregam histórias densas e longas, e os mais intensos sentimentos.

As peças aqui foram desenhadas com a intenção de integrar auto-alterações ao longo do tempo, de acordo com a forma com que a pessoa que veste cuida e mantém a peça. As modelagens extremamente simples, portanto, escondem surpresas, que serão reveladas ao longo do uso. Para este efeito, materiais amplamente utilizados na indústria de vestuário desde os anos 1980 foram selecionados e colocados a teste aqui. Alguns mantiveram sua função original e outros tiveram suas funções reconfiguradas.

A idéia em WEAR\WEAR é que, através da experiência, possamos ampliar nossa compreensão sobre o vestir. É também permitir que o tempo se manifeste nos objetos e compreender como nos relacionamos com essas mudanças. E essas propostas surgiram de perguntas levantadas em pesquisas anteriores. Porque a gente ama uma roupa nova? E se as roupas não-novas pudessem nos surpreender também?

Acredito que, assim como tantos outros objetos não-animados, a sua peça vive com, por, e através de você! Caso a oportunidade apareça, espero que tenham excelentes experiências, juntas.
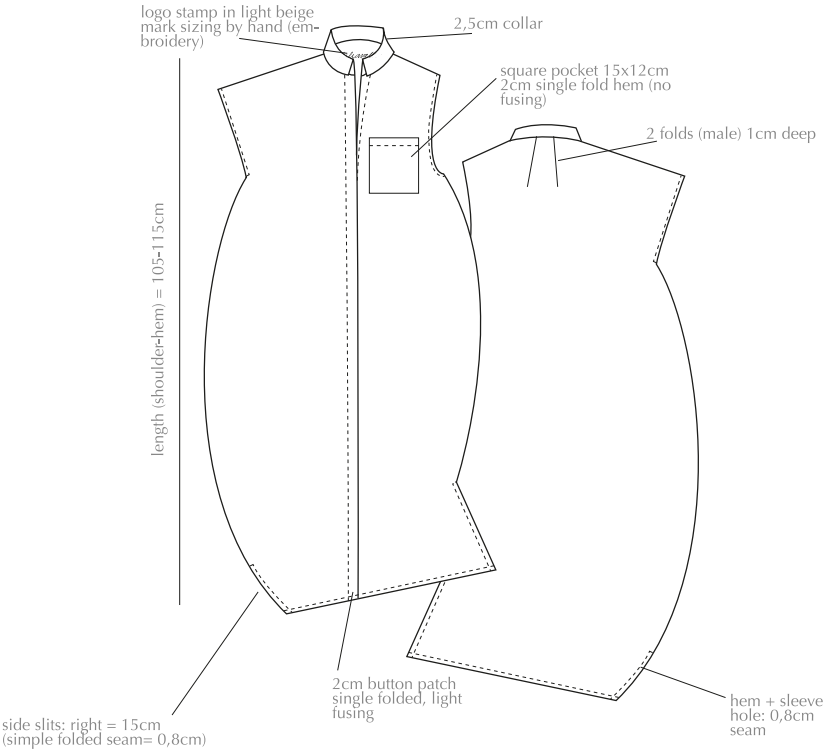
julianette

APPENDIX 12. Material Description of Pieces in Dress(v.)

	SHIRT I	SHIRT II	SHIRT III	SHIRT IV
Material	100% Cotton, Cataguazes	100% Cotton, Cataguazes	100% Cotton, Cataguazes	100% Cotton, Cataguazes
Colour	Natural (off-white)	Natural (off-white)	Natural (off-white)	Natural (off-white)
Lining	No	No	No	No
Seam allowance	8mm	8mm	8mm	8mm
Seams	French seams on sides and shoulder. Overlock on armhole. Raw edges on inner part of pockets. Hidden seams on neckline (collar). Sleeve hem with 2,5cm, bottom hem 0.8mm and simple button patch with 2,5cm.	French seams on sides and shoulder. Raw edges on inner part of pockets. Hidden seams on neckline (collar). Armholes on the back with English pocket finishing, bottom hem 0.8mm and simple button patch with 2,5cm.	French seams on sides and shoulder. Raw edges on inner part of pockets. Hidden seams on neckline (collar). Sleeve finishing with 0,8cm, bottom hem 0,8cm and simple button patch with 2,5cm. 0,8cm hem finishin on side slits.	French seams on sides and shoulder. Overlock on armhole. Raw edges on inner part of pockets. Hidden seams on neckline (collar). Sleeve cuffs with 4cm, bottom hem 0.8mm and simple button patch with 2,5cm.
Surface	Plain woven cotton 100 thread count, 142 g/m²	Plain woven cotton 100 thread count, 142 g/m²	Plain woven cotton 100 thread count, 142 g/m²	Plain woven cotton 100 thread count, 142 g/m²
Closure Trimming	Plastic oval button, size 10, in iridescent off white. Total 6 buttons.	Plastic oval button, size 10, in iridescent off white. Total 6 buttons.	Plastic oval button, size 10, in iridescent off white. Total 10 buttons.	Plastic oval button, size 10, in iridescent off white. Total 8 buttons (patch and cuffs).
Hand Finishing	Stamped logo on neck in light beige	Stamped logo on neck in light beige	Stamped logo on neck in light beige	Stamped logo on neck in light beige
Embroidery	n/a	n/a	n/a	n/a
Other Details	Short sleeve (18cm long) on left side and extended shoulder (30,5cm total) on the right side, one outer pocket on left chest area. Irregular sides. Straight bottom hem. Total length (shoulder-hem) 64cm.	Sleeveless with effect of short sleeves (armholes positioned on the back of the shirt), one outer pocket on left chest area. Regular sides. Rounded hem, longer at the back. Total lenght 64cm.	Sleeveless. Extended shoulder on right side (total 26,5cm), normal shoulder on left side. One outer pocket on left chest area. Irregular sides. 15cm long slits on both sides. Total length 108cm.	Long sleeves (62cm), one outer pocket on left chest area. Irregular sides. 15cm slit on sides. Length 64cm right side and 82cm left side. Slightly differing shoulder lengths.
Tag Contents	7,5×15cm tag in 360g paper with embossing + tag in 90g paper contains info on clothes (model, size, material, origin, amount material used) and washing instructions. Name of wardrobe interventions participant included.	7,5×15cm tag in 360g paper with embossing + tag in 90g paper contains info on clothes (model, size, material, origin, amount material used) and washing instructions. Name of wardrobe interventions participant included.	7,5×15cm tag in 360g paper with embossing + tag in 90g paper contains info on clothes (model, size, material, origin, amount material used) and washing instructions. Name of wardrobe interventions participant included.	7,5×15cm tag in 360g paper with embossing + tag in 90g paper contains info on clothes (model, size, material, origin, amount material used) and washing instructions. Name of wardrobe interventions participant included.
Other	leaflet with info on the design process.	leaflet with info on the design process.	leaflet with info on the design process.	leaflet with info on the design process.

APPENDIX 13. Technical Drawings for projects Dress(v.)

juliavalle | Dress(v.)

Date/Year: 2015	**Pattern:** JVN03_2015
Style name: Shirt Dress (Shirt III)	**Size offering:** made-to-measure (34-46)
Classification: Shirt	**Colour offering:** Off-White
Main fabric: Organic Cotton Poplin	**Supplier:** Cataguazes Ind. Têxtil Ltda.

Other Fabric/Trimmings: cotton thread (off-white), solid plastic button (iridescent off white/oval detail white), fusible interfacing (light)

logo stamp in light beige
mark sizing by hand (embroidery)

2,5cm collar

square pocket 15x12cm
2cm single fold hem (no fusing)

2 folds (male) 1cm deep

length (shoulder-hem) = 105-115cm

side slits: right = 15cm
(simple folded seam= 0,8cm)

2cm button patch
single folded, light fusing

hem + sleeve
hole: 0,8cm
seam

Comments:
French seams on sides and shoulders, simple seams on hems.
Tag: 15x7,5cm 360g paper (embossed) + inner tags in 90g uncoated paper, containing: model, size, material, origin, amount material used, washing instructions. Include each participant's personal name.
For details on measurements, see original pattern.

juliavalle | Dress(v.)

Date/Year: 2015	**Pattern:** JVN04_2015
Style name: Irregular Shirt (Shirt IV)	**Size offering:** made-to-measure (34-46)
Classification: Shirt	**Colour offering:** Off-White
Main fabric: Organic Cotton Poplin	**Supplier:** Cataguazes Ind. Têxtil Ltda.

Other Fabric/Trimmings: cotton thread (off-white), solid plastic button (iridescent off white/oval detail white), fusible interfacing (light)

logo stamp in light beige
mark sizing by hand (embroidery)

2,5cm collar

square pocket 15x12cm
2cm single fold hem (no fusing)

length (shoulder-hem) = 64cm / 82cm

2cm dress-shirt cuffs.
double light fusing.
applied (not folded).

Cuff button patch
1,5cm (1 button)

hem (folded):
0,8cm seam

2cm button patch
single folded, light
fusing

side slits: right = 12cm
(simple folded seam= 0,8cm)

Comments:
French seams on sides and shoulders, simple seams on hems.
Tag: 15x7,5cm 360g paper (embossed) + inner tags in 90g uncoated paper, containing: model, size, material, origin, amount material used, washing instructions. Include each participant's personal name.
For details on measurements, see original pattern.

juliavalle | Dress(v.)

Date/Year: 2015	**Pattern:** JVN02_2015
Style name: False Sleeve Shirt (Shirt II)	**Size offering:** made-to-measure (34-46)
Classification: Shirt	**Colour offering:** Off-White
Main fabric: Organic Cotton Poplin	**Supplier:** Cataguazes Ind. Têxtil Ltda.

Other Fabric/Trimmings: cotton thread (off-white), solid plastic button (iridescent off white/oval detail white), fusible interfacing (light)

logo stamp in light beige
mark sizing by hand (embroidery)

2,5cm collar

square pocket 15x12cm
2cm single fold hem (no fusing)

length (shoulder-hem) = 64cm (front) / 68cm (back)

arm hole, 20cm.
(opening like double welt pocket)

2cm button patch
single folded, light fusing

hem: 0,8cm
seam

Comments:
French seams on sides and shoulders, simple seams on hems.
Tag: 15x7,5cm 360g paper (embossed) + inner tags in 90g uncoated paper, containing: model, size, material, origin, amount material used, washing instructions. Include each participant's personal name.
For details on measurements, see original pattern.
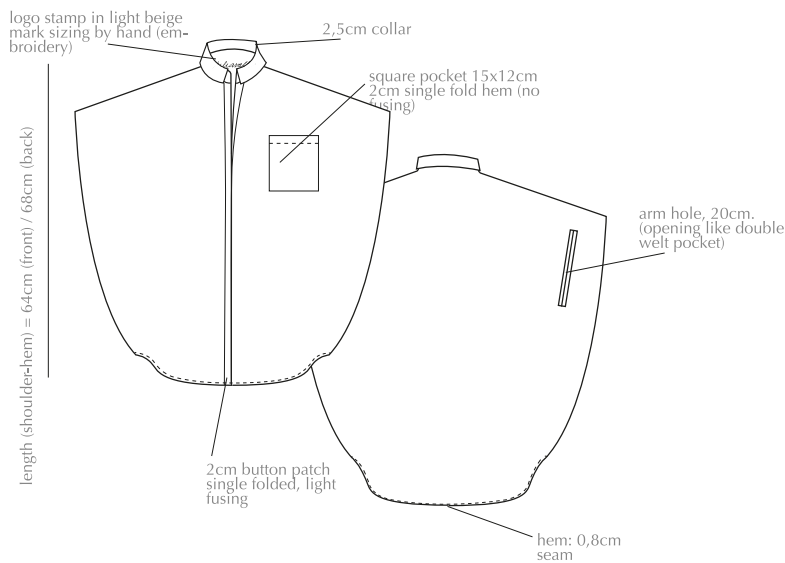
juliavalle | Dress(v.)

Date/Year: 2015	**Pattern:** JVN01_2015
Style name: Irregular Sides Shirt (Shirt I)	**Size offering:** made-to-measure (34-46)
Classification: Shirt	**Colour offering:** Off-White
Main fabric: Organic Cotton Poplin	**Supplier:** Cataguazes Ind. Têxtil Ltda.

Other Fabric/Trimmings: cotton thread (off-white), solid plastic button (iridescent off white/oval detail white), fusible interfacing (light)

logo stamp in light beige
mark sizing by hand (em-
broidery)

2,5cm collar

square pocket 15x12cm
2cm single fold hem (no
fusing)

2 folds (male) 1cm deep

length (shoulder-hem) = 64cm

2cm button patch
single folded, light
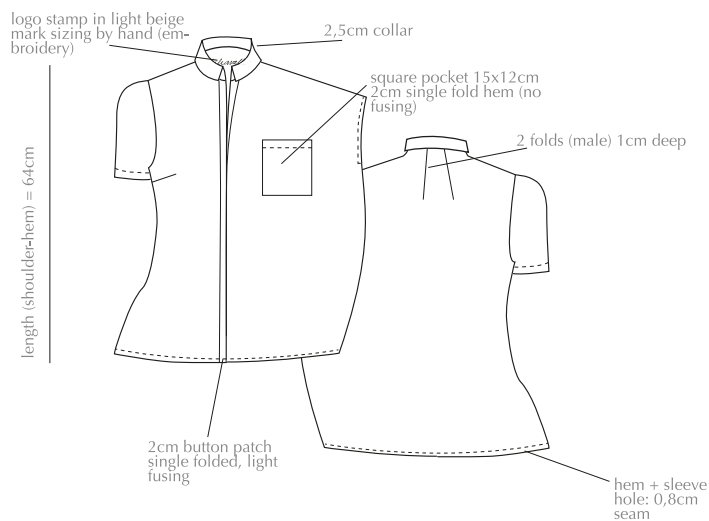fusing

hem + sleeve
hole: 0,8cm
seam

Comments:
French seams on sides and shoulders, simple seams on hems.
Tag: 15x7,5cm 360g paper (embossed) + inner tags in 90g uncoated paper, containing: model, size, material, origin, amount material used, washing instructions. Include each participant's personal name.
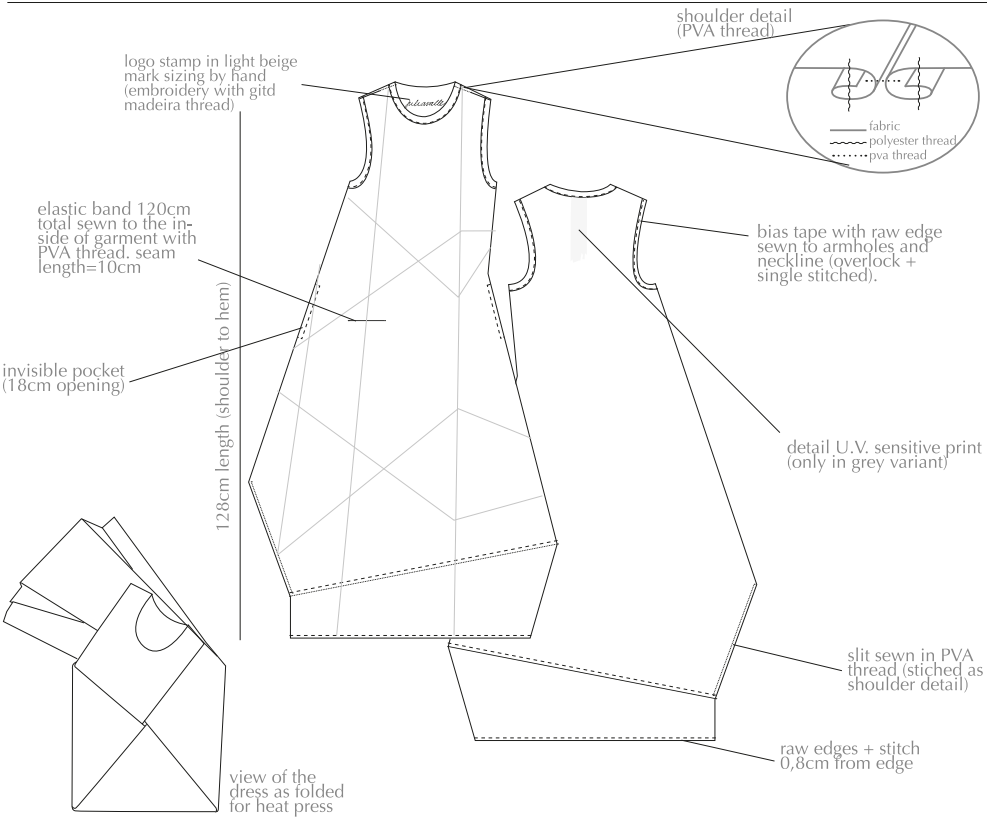For details on measurements, see original pattern.

APPENDIX 14. Material description of pieces in Wear\Wear

	BLOUSE I	BLOUSE II	DRESS I	DRESS II
Material	100% CO	100% PV	100% PV	100% PV
Colour	White	White	Black / grey	Black / grey
Lining	No	No	No	No
Seam allowance	8mm	8mm	8mm	8mm
Inside seams	French seams on the sides. overlock on shoulder seams. overlock finishing raw edges near neck line and bottom hem + machine stitching. 2mm hem stitching.	French seams on the sides. overlock on shoulder seams. overlock finishing raw edges near neck line and bottom hem + machine stitching. 2mm hem stitching.	Overlock finishing all raw edges + machine stiching side, shoulder, etc. seams. Near bottom part, some of side seams and part of shoulder sewn with white thread. Raw edge with machine stitching finishing.	Overlock finishing all raw edges + machine stitching side, shoulder, etc. seams. Near bottom part, some of side seams and part of shoulder sewn with white thread. Raw edge with machine stitching finishing.
Surface prints or textures	Transparent print on right shoulder	Transparent/black print on right shoulder, fold texture all over the piece.	Fold texture all over piece. Transparent print on grey colour variant.	Fold texture all over piece. Transparent print on grey colour variant.
Closure trimmings	None	None	None	None
Hand finishing	Stamped logo	Stamped logo	Stamped logo. Raw edged cut by hand.	Stamped logo. Raw edged cut by hand.
Embroidery	x' mark on stamped tag near neck	x' mark on stamped tag near neck	x' mark on stamped tag near neck	x' mark on stamped tag near neck
Other details	Outer pockets.	Pockets, inner and outer. Outer pocket in different fabric.	1m elastic band attached near hip line with 3cm seam	Big pleat in 'soleil' shape on the back, starting from neck line (0cm) growing to around 18cm near waistline
Tag details	Tag in paper with embossing + tag in paper. Parts printed and some part written by hand contains info on clothes (model, size, material, origin, amount material used) and washing instructions.	Tag in paper with embossing + tag in paper. Parts printed and some part written by hand contains info on clothes (model, size, material, origin, amount material used) and washing instructions.	Tag in paper with embossing + tag in paper. Parts printed and some part written by hand contains info on clothes (model, size, material, origin, amount material used) and washing instructions.	Tag in paper with embossing + tag in paper. Parts printed and some part written by hand contains info on clothes (model, size, material, origin, amount material used) and washing instructions.
Other	Leaflet with info on the design process.	Leaflet with info on the design process. The garment comes folded in a 'origami like' fold. When you unfold it first time it makes noise. Printed area is a bit attached to the other side.	Leaflet with info on the design process. The garment comes folded in a 'origami like' fold. When you unfold it first time it makes noise. Printed area is a bit attached to the other side.	Leaflet with info on the design process. The garment comes folded in a 'origami like' fold. When you unfold it first time it makes noise. Printed area is a bit attached to the other side.

APPENDIX 15. Technical drawings for project Wear\Wear

juliavalle | Wear\Wear

Date/Year: 2016	**Pattern:** JVN01_2016
Style name: Long Dress (Dress I)	**Size offering:** made-to-measure (34-46)
Classification: Dress	**Colour offering:** Black/Light-Grey
Main fabric: Heavy Polyester Crepe (100%PV)	**Supplier:** PSLA Importadora Ltda.

Other Fabric/Trimmings: polyester thread (black/grey), PVA thread (Madeira, off-white), elastic band (beige, 1cm wide)

shoulder detail
(PVA thread)

logo stamp in light beige
mark sizing by hand
(embroidery with gitd
madeira thread)

fabric
polyester thread
pva thread

elastic band 120cm
total sewn to the in-
side of garment with
PVA thread. seam
length=10cm

bias tape with raw edge
sewn to armholes and
neckline (overlock +
single stitched).

128cm length (shoulder to hem)

invisible pocket
(18cm opening)

detail U.V. sensitive print
(only in grey variant)

slit sewn in PVA
thread (stiched as
shoulder detail)

view of the
dress as folded
for heat press

raw edges + stitch
0,8cm from edge

Comments:
French seams on sides. Shoulders and attached bottom part are sewn in two stages.

Shoulders: simple basting seam. After heat-press, stitch according to visual in this technical sheet.
Bottom: no hems. stitch raw edges with simple stitches, 0.8cm from edge with pv thread and attach bottom part suing loose basting seam. After heat-press, remove basting seam and stitch with PVA thread.
Colour variation Grey will receive manual print in U.V. reactive dye on back.
Tag: 15x7,5cm 360g paper (embossed) + inner tags in 90g uncoated paper, containing: model, size, material, origin, amount material used, washing instructions. Include each participant's personal name.
For details on measurements, see original pattern.

juliavalle | Wear\Wear

Date/Year: 2016	**Pattern:** JVN02_2016
Style name: Short Dress (Dress II)	**Size offering:** made-to-measure (34-46)
Classification: Dress	**Colour offering:** Black/Light-Grey
Main fabric: Heavy Polyester Crepe (100%PV)	**Supplier:** PSLA Importadora Ltda.

Other Fabric/Trimmings: polyester thread (black/grey), PVA thread (Madeira, off-white), elastic band (beige, 1cm wide)
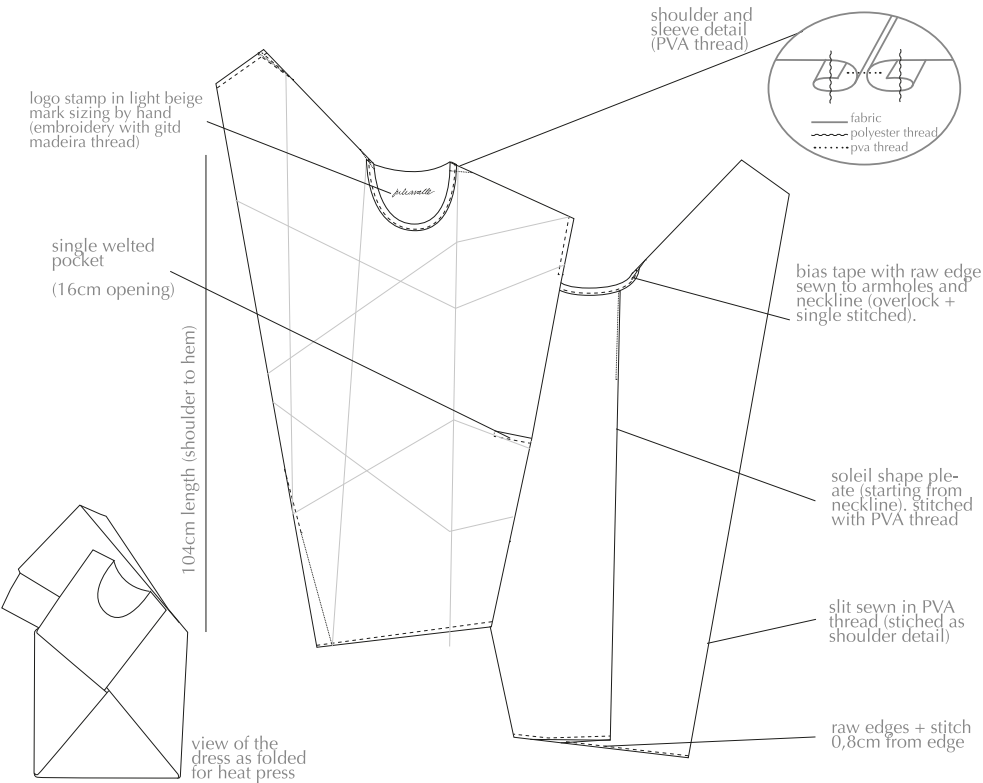
shoulder and
sleeve detail
(PVA thread)

fabric
polyester thread
pva thread

logo stamp in light beige
mark sizing by hand
(embroidery with gitd
madeira thread)

bias tape with raw edge
sewn to armholes and
neckline (overlock +
single stitched).

single welted
pocket

(16cm opening)

soleil shape ple-
ate (starting from
neckline). stitched
with PVA thread

104cm length (shoulder to hem)

slit sewn in PVA
thread (stiched as
shoulder detail)

raw edges + stitch
0,8cm from edge

view of the
dress as folded
for heat press

Comments:
French seams on sides. Shoulders and slit are sewn in two stages.
Shoulders: simple basting seam. After heat-press, stitch according to visual in this technical sheet.
Slit: Stitch raw edges with simple stitches, 0.8cm from edge with pv thread. After heat-press, remove basting seam and stitch with PVA thread.

Tag: 15x7,5cm 360g paper (embossed) + inner tags in 90g uncoated paper, containing: model, size, material, origin, amount material used, washing instructions. Include each participant's personal name.
For details on measurements, see original pattern.

juliavalle | Wear\Wear

Date/Year: 2016	**Pattern:** JVN04_2016
Style name: Pressed Blouse (Blouse II)	**Size off.:** made-to-measure (S-XL)
Classification: Dress	**Colour off.:** White
Main fabric: Light Polyester Crepe (100%PV)	**Supplier:** PSLA Importadora Ltda.

Other Fabric/Trimmings: polyester thread, PVA thread (Madeira, off-white), PVA fabric (non-woven, 100% PVA)

inner pocket in light polyester fabric and external pocket in PVA non-woven textile (both sewn after heat press with polyester thread)

logo stamp in light beige mark sizing by hand (embroidery with gitd madeira thread)

bias tape with raw edge sewn to armholes and neckline (overlock + single stitched).

armhole from side seam (20cm opening)

detail U.V. sensitive print

64cm length

invisible pocket (18cm opening)

2mm simple hem. stitched

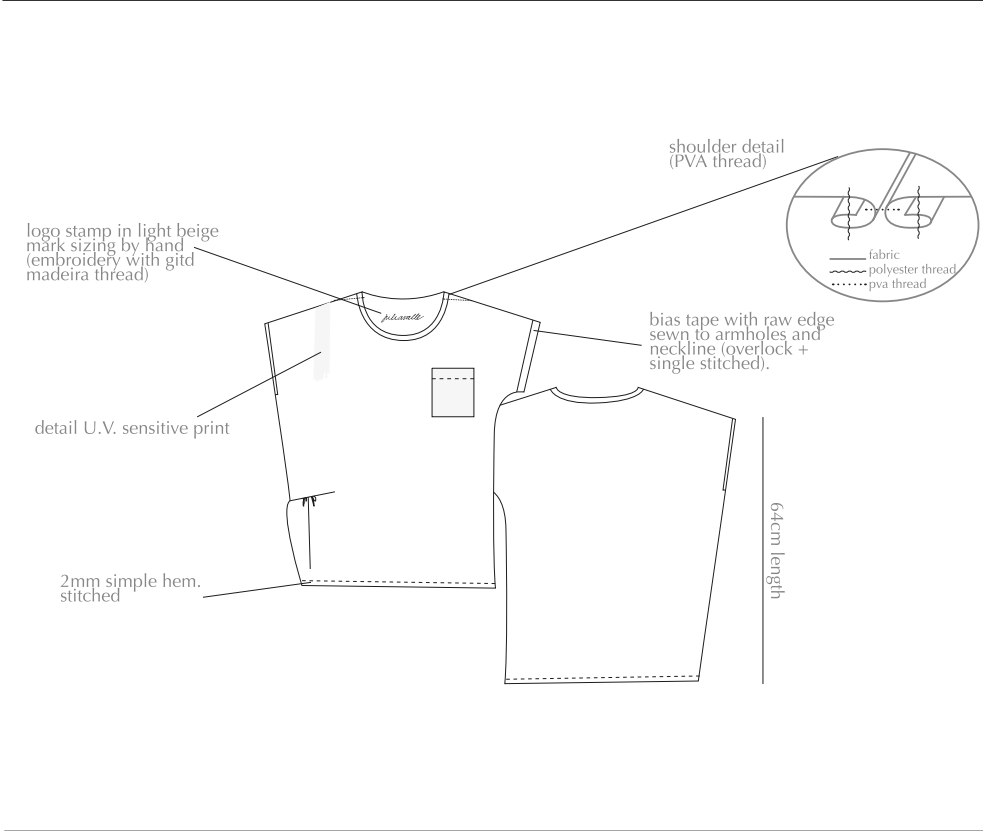view of the blouse as folded for heat press

Comments:
French seams on sides.
Pockets are sewn after the blouse is heat pressed, the inner pocket in the same material as blouse and external pocket in pva non-woven textile. The two pockets are sewn at the same time, with polyester thread.

Tag: 15x7,5cm 360g paper (embossed) + inner tags in 90g uncoated paper, containing: model, size, material, origin, amount material used, washing instructions. Include each participant's personal name.
For details on measurements, see original pattern.

juliavalle | Wear\Wear

Date/Year: 2016	**Pattern:** JVN03_2016
Style name: Missing Pocket Blouse (Blouse I)	**Size off.:** made-to-measure (S-XL)
Classification: Blouse	**Colour off.:** White
Main fabric: Cotton/Viscose (60%CO 40%CV)	**Supplier:** Picasso Importadora Ltda.

Other Fabric/Trimmings: polyester thread, PVA thread (Madeira, off-white),

shoulder detail
(PVA thread)

logo stamp in light beige
mark sizing by hand
(embroidery with gitd
madeira thread)

fabric
polyester thread
pva thread

bias tape with raw edge
sewn to armholes and
neckline (overlock +
single stitched).

detail U.V. sensitive print

64cm length

2mm simple hem.
stitched

Comments:

French seams on sides. Shoulders and attached bottom part are sewn in two stages.
Shoulders: simple basting seam. After heat-press, stitch according to visual in this technical sheet.

Pocket: in Cotton/Viscose, sewn with PVA thread.

Tag: 15x7,5cm 360g paper (embossed) + inner tags in 90g uncoated paper, containing: model, size, material, origin,
amount material used, washing instructions. Include each participant's personal name.
For details on measurements, see original pattern.

APPENDIX 16 . Selected dissemination activities directly related to the research during the studies

DISSEMINATION OF THE RESEARCH DURING THE DOCTORAL STUDIES			
DATE	PUBLICATION TITLE	LOCATION	DESCRIPTION / TITLE OF CONTRIBUTION
		Journal articles	
2017	IARA 10(1)		Towards practice beyond fashion design: studying fashion research in Brazilian education (co-authored with Namkyu Chun) pp. 29–44 (JUFO 1)
2018	Clothing Cultures 5(2)		Notes on wearer-worn attachments: Learning to wear (co-authored with Kirsi Niinimäki and Sari Kujala) pp. 225–246 (JUFO 1)
2018	dObra[s] 11(23)		The intervened wardrobe: Making visible the agency of clothes (co-authored with Danielle Wilde) pp. 197–217 (JUFO 1)
2018	Revista de Design, Tecnologia e Sociedade 5(1)		A partilha da moda através de um olhar centrado no uso pp. 84–88 (JUFO 1)
2019	Ruukku 10		The body within the clothes (JUFO 1)
		Conference/symposium papers	
05/2015	Fashion and the Body PhD Symposium	Stockholm, Sweden	The Aesthetics of Dress (v.)
01/2016	PhD Symposium in Arts	Nottingham, England	Dress(v.)
03/2016	IFFTI Conference	Beijing, China	Is it because you know who made it? Experimental fashion shifting wearers relations to clothes.
04/2016	Fashion Colloquium	São Paulo, Brazil	Towards Practice Beyond Fashion Design: Studying fashion design research in Brazilian higher education (co-authored with Namkyu Chun)
04/2016	6º Encontro Nacional de Pesquisa em Moda (ENPModa)	São Paulo, Brazil	Moda Autoral: Sobre um modo de fazer (roupas)
09/2016	12º Colóquio de Moda	J. Pessoa, Brazil	Dress(v.): Encorporeamento de movimentos através da modelagem criativa (JUFO 1)
03/2017	Research Trough Design 2017	Edinburgh, Scotland	On the agency of clothes: Surprise as a tool towards stronger engagements
09/2017	13º Colóquio de Moda	Bauru, Brazil	Time as a Design Space: Designing surprise in clothing experience and maintenance (JUFO 1)
10/2017	Sustainable Fashion in Circular Economy	Helsinki, Finland	Presentation of research project at the symposium and exhibition of creative work.
11/2017	Art of Research 2017	Espoo, Finland	The body within the clothes: A case study on clothing design practice from a practitioner viewpoint
05/2018	Fashion Colloquium	Arnhem, Netherlands	Affective Patterns: Exploring the agentic openings of flat patterns (co-authored with Maarit Aakko)

DATE	PUBLICATION TITLE	LOCATION	DESCRIPTION / TITLE OF CONTRIBUTION
09/2018	14º Colóquio de Moda	Curitiba, Brazil	Practice-based research in fashion: A literature review (co-authored with Namkyu Chun) (JUFO 1)
09/2018	14º Colóquio de Moda	Curitiba, Brazil	Disrupting Expectations: The case of an experimental pattern cutting workshop (co-authored with Julia Assis) (JUFO 1)
06/2019	Nordes 2019	Helsinki, Finland	Iron while still damp (co-authored with Marina Valle-Noronha) (JUFO 1)
		Book chapters	
2017	Fletcher, K. and Klepp, I. (eds.) Opening up the Wardrobe: A Methods Book. Oslo: Novus Forlag		"Design probes applied as fashion design probes" (co-authored with Kirsi Niinimäki) pp. 84–86 (JUFO 1)
2017	Fletcher, K. and Klepp, I. (eds.) Opening up the Wardrobe: A Methods Book. Oslo: Novus Forlag		"User Experience Curves (ux Curves)". Co-authored with Sari Kujala and Kirsi Niinimäki, pp. 39–41 (JUFO 1)
		Exhibitions	
2015	Frozen Species	Helsinki, FI	For What it's Worth' installation and drawings
2015	Dress (v.)	BH, Brazil	pieces from Dress(v.) experiment
2016	Wear\Wear	BH, Brazil	pieces from Wear\Wear experiment
2017	Research through Design Conference	Edinburgh, UK	pieces from Wear\Wear experiment
2017	Fashion and Sust. in Circular Economy	Helsinki, FI	dress from Light experiment
2017	The body within the clothes	Helsinki, FI	pieces from Dress(v.) and Wear\Wear projects
		Lectures / public presentations	
09/2018	Tallinn Design Week	Tallinn, EE	Invited speaker, event part of Tallinn Design Week. "On Time and Surprise as a Space for Design"
04/2018	Estonian Academy of Arts	Tallinn, EE	Open lecture "What can (experimental) fashion do?"
05/2018	Aalto, Sustainable Fashion Course	Helsinki, FI	Invited lecturer "On the agency of clothes"
11/2017	ArcinTex Conference	Helsinki, FI	Invited speaker "Wardrobe Interventions"
09/2017	Conference on Creative Methods and Processes, Museu de Artes e Ofícios	BH, Brazil	Invited speaker "Research oriented Design"
08/2017	Universidade do Estado de MG, Design Research course	BH, Brazil	Invited speaker "Doing PhD in Fashion Design"
03/2017	Aalto University, Learning Center	Espoo, FI	Invited speaker "Alternative modes of Making Clothes"

DATE	PUBLICATION TITLE	LOCATION	DESCRIPTION / TITLE OF CONTRIBUTION
Non-Academic Publications			
2016	The Fashion Studies Journal 2		Critical Thinking and Making on Fashion: The dead fashion designer's society
2016	The Fashion Studies Journal 2		For What it's Worth
2017	The Fashion Studies Journal 3		On fruit stalls and shopping malls
2017	Roupartilhei		Contra a sustentabilidade por um novo materialismo na moda
2017	Roupartilhei		Sobre moda e o fim da produção de roupas
Visiting Researcher			
2017	Designskolen Kolding	Kolding, Denmark	Hosted by and working together with Anne Louise Bang
2017	Universidade do Estado de Minas Gerais	BH, Brazil	Hosted by Regina Álvares, working together with Angélica Adverse

BSc in Social Communication and MA in Visual Arts, Julia Valle-Noronha is a designer-researcher interested in rethinking how we relate to clothing and fashion with an aim for more responsible futures. In her doctoral research she explores the topic through design and philosophy. Her fields of interest in research and practice revolve around wearer-worn engagements, alternative modes of producing, consuming and experiencing clothing, as well as intersections between fashion, technology and arts.

BECOMING WITH CLOTHES explores paths to more active relationships between people and the things they wear. It offers reflections on a matter that touches us all: the ways humans and clothes interact. The work departs from the critical discussion on how fashion, as a field of knowledge and practice, has prioritised investigations on visual perception and cultural values. This priority marginalises other agencies that affect the fashion system and encourage unengaged relationships. To activate wearer-worn engagements, two iterative clothing design projects are developed and examined through lived experiences via a research through design approach. The results of the study speak of the potential of surprise and open-endedness as tools to render visible how wearer and worn mutually affect each other — or in other words, how they *become with*. This dissertation invites fashion designers, researchers and wearers to be open to clothing's ability to act, and highlights the experience of wearing as a powerful space to be explored.

BUSINESS +
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ART +
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SCIENCE +
TECHNOLOGY

CROSSOVER

DOCTORAL
DISSERTATIONS