



A Designer's Material-Aesthetics Reflections on Fashion and Technology

Impact Case Study

Pauline VAN DONGEN

Eindhoven University of Technology

Industrial Design

Year of completion:	2019
Discipline/field:	Industrial Design
Type of Doctorate (e.g. PhD, DDes, ArtD)	PhD
Supervisor(s)	Prof. dr. Ron Wakkary Prof. dr. ir. Stephan Wensveen Ass. prof. dr. Oscar Tomico

Abstract

This dissertation examines how wearables – garments that bring together electronics and digital materials with textiles – can become integral to the everyday reality of fashion. It does so by reflecting on my practice as a fashion designer informed by the concept of 'material aesthetics'. The starting point of this research is

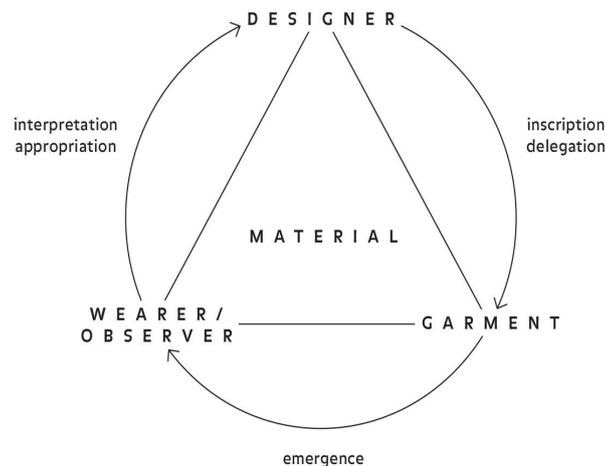


Photography: Liselotte Fleur

my first-person perspective as a design researcher who engages in a reflective analysis of her design practice and its outcomes. The work I discuss is created in the context of my professional design studio that has been running for eight years. On the basis of this work, I argue for the need to reframe the role of technology in fashion. The prevailing understanding of technology on one hand tends to focus either on its functional or instrumental value, or on the expressive qualities of technology as a matter of representation. This limited and fairly disembodied understanding of technology, sustained by the perceived divide between functionality and aesthetics, hinders the integration and meaningful role of wearables in the everyday lives of people. In this dissertation, I therefore call for an approach that is able to holistically tie together notions of material, embodiment and aesthetics.



These concerns have led me to turn to postphenomenology (a strand of philosophy of technology) as a theoretical lens to inform my analysis. Especially important to this research is that postphenomenology is grounded in an experiential approach based on an embodied and situated perspective. Postphenomenology doesn't speak of artefacts in terms of functions and signs, but speaks of the way artefacts 'mediate' by influencing human experiences and practices. The theory of 'technological mediation' enables looking at the ways in which artefacts 'coshape' the relationship between human beings and the world. The postphenomenological understanding that artefacts mediate materially, turns the focus to their sensorial dimension and thereby extends aesthetics into what can be considered a material aesthetics. I show how the concept of material aesthetics can explain relations to wearables very well. With the help of this concept I examine my own work to see what role the garments designers design can play. Additionally, I am motivated to share my experiences and findings in ways that are helpful to designers in incorporating these ideas into their practice.



Methodologically, this dissertation presents a three-fold approach. First, it examines the designer's intentions and inscriptions during the design process of three design exemplars: Solar Dress, Solar Shirt and Issho. These autoethnographic design journeys reveal the potential of a material aesthetics approach. It then continues by providing a material aesthetics framework for the analysis of artefacts, which introduces a vocabulary that allows my design exemplars to be described in a rich and more nuanced way. The second analysis shows that these wearables (Solar Shirt, Phototrope and Issho) do more than fulfill mere function; they shape human perception and action. The third analysis focuses on the situated perspective of the wearer and the observer, on the basis of a field study with the interactive running shirt Phototrope. Over the course of these three perspectives the understanding and role of technology in fashion is being described in increasingly nuanced terms.



Finally, based on a synthesis of the three perspectives (designer, artefact and wearer/observer) I offer a holistic view of the mediating role of technologies in fashion. It shows how human-technology relations are constituted through the complex dynamics between designer's inscriptions, the emergence of the artefact and the interpretations and appropriations of wearers and observers. I then suggest and describe a material aesthetics sensibility for designers that enables them to make postphenomenological thinking an explicit part of the design process. To illustrate how they can anticipate mediations, I present an iterative designer-artefact-wearer/observer loop that shows the relation between the three 'sources' of mediation in design. Also, I discuss the role technology can have in reclaiming fashion as an embodied practice. Finally, I draw out several implications for designers and discuss the new design space that opens up when designers of wearables gain a material aesthetics sensibility.

Summary of impact beyond academia

The design artefacts created over the course of the PhD research were showcased during the internationally renowned exhibition of State of Fashion in Arnhem, in 2018.

After completion of the PhD, the doctoral researcher has continued to share her work and insights through public presentations, writing and podcasts.

For example:

Transmission in Motion Seminar (2020-2021): "When Designer Meets Academic – Theory and Practice of Smart Clothing" – Lianne Toussaint (Utrecht University) and Pauline van Dongen (Eindhoven University of Technology)

Philosophy of Human-Technology Relations Conference (2020): 'Making, wearing and thinking through uncut cloth'

Podcast "Mens", 2019, no.4

Underpinning research, context and summary of methodology

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A synthesis of the three perspectives (designer, artefact and wearer/observer) offers a holistic view of the mediating role of technologies in fashion. It shows how human-technology relations are constituted through the complex dynamics between designer's inscriptions, the emergence of the artefact and the interpretations and appropriations of wearers and observers. Based on these insights, a material aesthetics sensibility for designers is suggested that enables them to make postphenomenological thinking an explicit part of the design process. To illustrate how designers can anticipate mediations, an iterative designer-artefact-wearer/observer loop is developed that shows the relation between the three 'sources' of mediation in design.

References produced by researcher from/during doctoral research

Anneke Smelik, Lianne Toussaint and Pauline van Dongen, 'Solar Fashion: An Embodied Approach to Wearable Technology', *International Journal of Fashion Studies*, 3 (2016), no. 2, pp.287-303

<https://www.ingentaconnect.com/content/intellect/infos/2016/00000003/00000002/art00007;jsessionid=bshdt5cl4e7t0.x-ic-live-01> (DOI: https://doi.org/10.1386/infos.3.2.287_1)

Solar Solace - video showcasing the Solar Shirt: <https://vimeo.com/156573547>

Phototrope - showcasing the interactive running shirt Phototrope: <https://vimeo.com/156573547>

Embodied Entanglements - video capturing some of the insights of the PhD research: <https://vimeo.com/364824389>

Pauline van Dongen, Ron Wakkary, Oscar Tomico, Stephan Wensveen, 'Towards a Postphenomenological Approach to Wearable Technology through Design Journeys' *Textile Intersections* 2019, Loughborough University in London.

[Conference Proceedings](#)



Pauline van Dongen and Lianne Toussaint, 'In Touch With the Now. Stimulating Mindfulness Through A Smart Denim Jacket' [APRIA Journal Issue 00](#) (2019)

Details of impact

Selected as 'MIT Innovator under 35 Europe' (2017)

Selected by Forbes for their list of 'Top 50 Women in Tech Europe' (2018)

Nominated for the TU/e PhD thesis Award 2020

PhD thesis published and sold by ArtEZ Press and nominated by "Ontwerp Platform Arnhem" in 2019 for their yearly selection of special non-fiction books that stand out because of their design, photography, print or content

<https://o-p-a.nl/nl/agenda/een-goed-boek-0>



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