

# DRAFTS

#3

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# 1 Introduction

## Forward

Over a period of two years, designtransfer could not stage open access public exhibitions due to the corona regulations; thus, I was delighted we could start connecting people again in a cooperation with the Swedish School of Textiles – University of Borås – beyond borders and across disciplines, in real life.

After being presented in Pakistan and Lithuania, this third edition of the exhibition DRAFTS:3, focused on prototypes that inspired visitors to interact with the exhibits as well as with each other. It was refreshing to again observe moments of joy and activity in the gallery space. As part of the Berlin Design Week (12 – 22 May 2022) DRAFTS:3 attracted international visitors – among others, design professors from Iraq, and student groups from Denmark and the Netherlands.

Following the dramatic increase in digital communications using online working methods, the importance of real three-dimensional artefacts, as well as haptic, sound, and body experiences became apparent. As useful as it might be to use digital tools in creative processes, functionality and final touches of objects, textiles, and fashion can only be developed in prototyping with real user-testing and interaction.

The additional pop-up student exhibition gave students from different universities and colleges a space to intermingle and connect. I experienced a vibrant energy, full of intrigue and playful exchange. Students were proudly sharing their research and works-in-progress, welcoming feedback for developing their projects further.

For me, the event was an enriching experience, as was working with Jan Tepe and Faseeh Saleem from the University of Borås. I know Jan from the UdK Design Master exhibition ‘Where are we now?’ shown at the designtransfer gallery in April 2018, in which he presented his final work. It was very nice to meet him again and to get to know his projects and research between then and now. As a whole, the collaboration was appreciative, constructive and pleasant – not to mention a letter of appreciation from the Head of Department Prof. Clemens Thornquist along with a unique local Swedish gift, a small wooden Dala horse, a symbol for dignity, wisdom, and strength.

This documentation archives the fruits of our collaboration – with hopefully many more to come.

Ilka Schaumberg, 13 July 2022

# DRAFTS: Background

DRAFTS was initiated in April 2021 by Dr. Vidmina Stasiulyte and Faseeh Saleem as a collaborative artistic research project to highlight the research process – thinking, ideating and suggesting ideas – as expressed through the design artefacts.

The series of exhibitions presented various examples and interpretations of what a research artefact is or could be.

DRAFTS:1 – Design Research Artefacts as an Intermediary Knowledge was hosted by Pakistan Institute of Fashion and Design (PIFD) from the 1 – 13 April 2021 in Lahore, Pakistan. This exhibition presented the work of Professors, Post-Doc Researchers, Ph.D. Candidates, and Senior Lecturers with their intriguing research artefacts in the field of fashion and textile. This exhibition consisted of 17 individual and collaborative projects by 23 participants.

Later the same year, DRAFTS:2 – Design Research Artefacts in the Context of Exhibition was part of the 1st International Art Triennial – Unpredictable Futures UFNA. Taking place from 2 July – 4 October 2021 in Molėtai, Lithuania, DRAFTS:2 consisted of three venues exhibiting the works of more than 60 artists, designers, and researchers.

The art triennial UFNA was a collaborative project between the Lithuanian Artists' Association and The Swedish School of Textiles, curated by Dr. Vidmina Stasiulyte, Faseeh Saleem, Prof. Eglė Ganda Bogdanienė, Saulė Mažeikaitė-Teiberė, Solveiga Gutautė, and Viktorija Kazlienė.



# DRAFTS:3

## Communicating knowledge through design research artefacts

DRAFTS:3 invited more than 80 researchers and designers to discuss the role of artefacts in research and design activities within disciplines such as fashion, textile, and interaction design. Specific to the third iteration of DRAFTS, researchers and designers contributed material and immaterial artefacts to the exhibition with the aim of framing discussions around the role of artefacts in communicating knowledge. The various schools of thought that the participating researchers and designers follow, allowed for a multifaceted dialogue to emerge, suggesting various approaches to communicating knowledge through design research artefacts.

This multifaceted dialogue was expressed through three events across two venues: A ten-day research exhibition was held at designtransfer in an international collaboration between the Berlin University of the Arts, Germany and the University of Borås, Sweden. 45 design researchers from various academic institutions across Canada, Germany, Iran, Lithuania, Netherlands, New Zealand, Pakistan, Romania, Sweden, and the United Kingdom showcased their work together.

A symposium was held at designtransfer that invited all participating exhibitors to present and discuss their perspective on the role of artefacts in communicating knowledge in relation to their exhibited projects. The dialogue that emerged was further deepened by two keynote presentations, which were held by Sarah Kettley, Professor of Material and Design Innovation at University of Edinburgh, Scotland and Daniëlle Bruggeman, Professor of Fashion at ArtEZ - University of the Arts in Arnhem, the Netherlands.

A one-day pop-up exhibition was held at the Berlin Open Lab that featured the work of 36 students enrolled at various academic institutions in MA Fashion Design, MA Textile Design, MA Costume Design, MA Product Design, MA Design & Computation, MA Spiel & Objekt, MS Physics, and BA Fashion Design to exhibit their projects in the context of the DRAFTS:3 theme.

Together, these events suggested various perspectives on questions relevant to DRAFTS:3: What is an artefact? What roles do artefacts play in design practices and research? How do design practitioners and researchers communicate ideas and knowledge through artefacts? What are the possibilities and challenges of artefacts when communicating ideas and knowledge? What do design practitioners and researchers need to mind for framing the role of the artefact in this context?

All contributors to the three events suggest varying perspectives to these questions on the following pages. These perspectives may show similarities to one another, or challenge each other. Together, they are a time stamp of evolving perspectives on the role of artefacts in practicing and communicating design and design research.

## PARTICIPANTS

Rodolfo Acosta Castro, Anastasia Almosova, Kristina Asenova, Linnea Bågander, Kristian Barella Greve, Mirte Berthe Luijmes, Paul Biessmann, Ricarda Bigolin, Erika Blomgren, Imke de Boer, Saskia Buch, Leonie Burkhardt, Dencine Castillo, Delia Dumitrescu, Majli af Ekenstam, Hannah Friederike Fischer, Rahel Flechtner, Matilda Forssblad, Friederike Fröbel, Emily Furmann, Luna Gil, Louis Grau, Helga Lára Halldórsdóttir, Aida Hasemzadehmayouni, Sara Hassoune, Karin Hedlund, Marta Heiðarsdóttir, Julika Hother, Caroline Ingeholm, Katja Jahn, Jin Jing, Julian Jungel, Sophie Jungkvist, Svenja Keune, Mirjam Ida Kislinger, Erika Körner, Marjan Kooroshnia, Clemens Kramer, Karin Landahl, Georgina Koschke, Zora Kutz, Hanna Landin, Ulrik Martin Larsson, Erin Lewis, Anna Lidström, Louise Linderoth, Maria-Helena Loheide, Katharina Lorenz, Thorsten Lühring, Stefanie Malmgren de Oliveira, Pepita Neureuter, Hong Van Nguyen, Yanshan Ou, Ella Estrella Tischa Raetzer, Faseeh Saleem, Hannah Perner-Wilson, Karin Peterson, Giorgia Petri, Holly McQuillan, Luisa von Radziewsky, Magda Roth, Tiago Santos, Mika Satomi, Johanna Sehrig, Sophie Skach, Christine Snedker, Vidmina Stasiulyte, Pauline Stockmann, Simone Syrhe, Jan Tepe, Clemens Thornquist, Pauline Vierne, Patricia Wagner, William Wahlström, Kathryn Walters, Tin Wang, Melissa Wedekind, Joanna Wilkans, Daniela Wittmann, Esther Zahn, Nico Zimmermann

## WHEN

Research Exhibition	12 – 20 May 2022
Symposium	12 May 2022
Student Exhibition	13 May 2022

## WHERE

designtransfer, Berlin University of the Arts, Einsteinufer 43, 10587 Berlin, Germany  
Berlin Open Lab, Einsteinufer 43, 10587 Berlin, Germany

## ORGANIZERS

designtransfer, Berlin University of the Arts  
Swedish School of Textiles, University of Borås  
Einsteincenter Digital Future

## CURATORS

Jan Tepe, Faseeh Saleem, Dr. Vidmina Stasiulyte, Prof. Dr. Berit Greinke

## COMMUNICATION

Ilka Schaumberg, Faseeh Saleem, Vidmina Stasiulyte



# Research Exhibition

## Multi-platform event

The multi-platform event DRAFTS invited researchers and designers to discuss the role of artefacts in research and design activities within disciplines such as fashion, textile, and interaction design. What is an artefact? The term can be understood and explored in varied ways. In alignment with scholarly voices, artefacts could be regarded as ‘intermediary knowledge’, as ‘bridging concept’ (Dalsgaard and Dindler, 2014), or ‘strong concepts’ (Höök and Öwgren, 2012), which ‘can serve as inputs into knowledge production and as outputs for knowledge communication’ (Nimkulrat, 2013). The multi-platform event DRAFTS explored in its different venues these conceptions of what research artefacts in design processes can be.

In an international collaboration between Berlin University of the Arts and University of Borås – The Swedish School of Textiles, artistic and research-based works were presented as part of an exhibition and an online symposium at designtransfer.

Anna Lidström • Clemens Thornquist • Delia Dumitrescu • Erin Lewis • Esther Zahn • Faseeh Saleem • Friederike Fröbel • Georgina Koschke • Giorgia Petri • Sophie Skach - Melissa Wedekind - Hanna Landin • Hannah Friederike Fischer • Helga Lára Halldórsdóttir • Holly McQuillan • Kathryn Walters • Karin Peterson • Jan Tepe • Karin Hedlund • Majli af Ekenstam • Karin Landahl • Stefanie Malmgren de Oliveira • Karin Peterson • Kathryn Walters • Linnea Bågander • Marjan Kooroshnia • Matilda Forssblad • Pauline Vierne • Erika Körner • Rahel Flechtner • Katharina Lorenz • Svenja Keune • Ulrik Martin Larsen • Vidmina Stasiulyte • Luisa von Radziewsky • Paul Biessmann • Marta Heidarsdóttir • Daniela Wittmann • Patricia Wagner • Katja Jahn • Pauline Stockmann • Simone Syrhe • Erika Blomgren • Ricarda Bigolin • Luna Gil















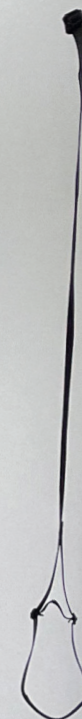








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# Material Inventories and Garment Ontologies #1

## Exhibited Artefact

This artefact is a result of an ongoing collaborative artistic research project that originated in the spring of 2019. The research group consists of Ricarda Bigolin, RMIT University School of Fashion and Textiles Melbourne, Erika Blomgren, Anna Lidström and Stefanie Malmgren de Oliveira, Swedish School of Textile, University of Borås.

This prototype is a part of an extensive practice-based exploration into material value, qualities and potential that are crucial in up-cycling practices. Waste materials across fashion and home textile categories are used to create an assemblage, by being layered and stuffed when placed inside one another. This variation of expressions and functions in combination with cutting is a way to explore the enhanced form, volume and size of materials together – how their properties might relate. The cutting also enhances fibre properties and construction.

## Role of Artefacts in this Research Project

The artefact is of great importance in order to develop novel theoretical foundations. And these examples were developed through the acquisition, sorting and selection of a large sample of second-hand, consumer waste materials across fashion and textiles sectors. Practice-based experiments and the use of different forms of photo documentation examined and explored distinct ways to creatively understand waste material properties, conditions and potential. Fashion and material studies frameworks of object biographies, wardrobe studies, waste, second-hand material economies and art practice approaches of reclaimed materials expanded and refined the approaches.

In exploring ways to advance design methods for up-cycling, we address wardrobe methods and approaches from the sustainability and slow fashion scholars Kate Fletcher and Ingun Klepp and also Klepp and Bjerck. This includes both theoretical fashion study frameworks and practice-based research investigating and interrogating personally acquired or pre-owned garments as a 'wardrobe'. Reclaiming and finding existing materials is an established part of contemporary art practice, offering an insightful approach to up-cycling methods. Using salvaged and scavenged materials explores everyday life, consumption and value.

Appadurai, A. (2018) "The Social Life of Things: Commodities in Cultural Perspective." Cambridge University Press: Cambridge, UK, Google Scholar.

Fletcher, K.; Klepp, I.G. (2017) "Opening Up the Wardrobe: A Methods Book". Nouvus Press: Oslo, Norway.

Klepp I.G. & Bjerck, M. (2014) A Methodological Approach to the Materiality of Clothing: Wardrobe Studies. In International Journal of Social Research Methodology. 17 (4), pp. 373-386.

Kopytoff, I. (1986) "The Cultural Biography of Things: Commoditization as Process". In The Social Life of Things: Commodities in Cultural Perspective; Appadurai, A., Ed.; Cambridge University Press: Cambridge, UK, pp. 64-92.



# Material Inventories and Garment Ontologies #2

## Exhibited Artefact

These photos are a result of an ongoing collaborative research project that originated in the spring of 2019. The research group consists of Ricarda Bigolin, RMIT University School of Fashion and Textiles Melbourne, Erika Blomgren, Anna Lidström and Stefanie Malmgren de Oliveira, Swedish School of Textile, University of Borås. They explore into material value, qualities and potential that are crucial to up-cycling practices.

They are a part of an extensive practice-based exploration into material value, qualities and potential; features that are crucial to up-cycling practices. With a focus on the exploration of wearable forms without destructing or disassembling the materials, and without the restriction of using a mannequin, this method facilitates the understanding of three-dimensional sketching to create compositions to scale. It is also a study of waste materials re-purposed outside their original usefulness.

## Role of Artefacts in this Research Project

The artefacts are of great importance in order to develop novel theoretical foundations, the development of basic notions that build the foundation of/for design practice. Practice-based methods, built upon our own artistic training are highly relevant and provide much needed specificity contributing a deeper understanding of the field of design.



# Organizing Wilderness

## Exhibited Artefact

The work is an observation of human existence in relation to wilderness. The installation describes and explores the contrasting approaches of modern living in both leisurely approaching and formally organizing the ways of living wilderness. The work explores and demonstrate through physical expressive abstractions ordinary requirements for seeking happiness in the wild, based on fundamental components needed to attain sustained pleasure therein.

## Role of Artefacts in this Research Project

The theoretical content propositional and established through a repetition of cases different in degree that produce an identity (Deleuze 2004). The theoretical analysis and theory development is built through self-referential visual/material systems where each case is both exercise and outcome of an inquiry (Wood et al. 2011). For this reason, the proposed method may also be related to the photographic structure of Joseph Albers (2010) and Hilla and Bernd Becher due to its normative and self-instituting epistemological structure (Lange, 2006). The method also may be described as clustering (Stimson 2004) or as drawing on methodologically, this concerns the ways in which abstractions and concrete expressions relate to each other in the artistic research process. This is where aesthetics become research methodology – the systematic classification of design expressions that provide a solid foundation and frame of reference for future design work in terms of the potentiality of methods and techniques.

Albers, J. (2010) Interaction of Color: New Complete Edition. New Haven: Yale Univ. Press

Deleuze, G. (2004). Difference and Repetition. London: Continuum.

Frayling C., 1993/94. Research in Art and Design, Royal College of Art Research Papers, 1(1):1-5.

Lange, S. et al. (2006) Bernd and Hilla Becher: life and work. Cambridge: MIT Press

Gronert, S. (2009) Düsseldorf School of Photography. London: Thames & Hudson

Wood, J, Kamps, T., & Harrison, P. (2011). John Wood and Paul Harrison: Answers to Questions. Houston: Contemporary Art Museum.

Stimson, B. (2004). The Photographic Compartment of Bernd and Hilla Becher .

[http://www.tate.org.uk/research/tateresearch/tatepapers/04spring/stimson\\_paper.htm](http://www.tate.org.uk/research/tateresearch/tatepapers/04spring/stimson_paper.htm) [2012-01-20]



# Textile Digital Crafting

## Exhibited Artefact

Digital modelling and material fabrication in textile design processes are commonly linked to conventional methods to create structural designs in weaving or knitting. 'Textile digital crafting' sample collection presents an exploration of hybrid methods to create structural textiles which combines a fused methodology between additive 3D printing technology and industrial knitting. Combining 3D printing with textile technology is a step forward to democratize the textile fabrication processes which generally use advanced industrial machines to create intricate textile design. Here 3D printing is a substitute for conventional textile fabrication technology. As result, the hybrid material library generated in this project illustrates some of the variety of the emergent expressions which are situated at the intersection of these technologies and design processes. Enhanced textural expressions in knit result from the self-folding and -forming of the surfaces which can relate in scale to the body, objects or spaces – by that exceeding the constraints of knitting. Likewise, soft textile qualities combined with the bending properties of the 3D printed textures allow the integration of changeable materials, generating delicate textures and achieving rich colour combinations when two design spaces meet in the textile design process.

## Role of Artefacts in this Research Project

I am conducting experimental research in design. In my research, I like to generate a series of examples to illustrate the variation which can be achieved using a certain method. The collection of samples evolves around two research intentions: experimental and illustrative. The experimental path is freer and more explorative since it aims to establish a new method by understanding the value of basic variables which are intertwining and emerging in this process. Mistakes are allowed here since they might guide towards unknown directions of expressivity in textile design. The illustrative path is a transformative process and selection is made to exemplify how concrete expressions emerge by forming with the variables and methods extracted from the experimental path. More than that I use the collection to speculate on possible textile futures as a way to suggest a change in the materiality that surround us and our ways to engage with it, most of the time.



# Thresholds

## Exhibited Artefact

Thresholds is an interactive textile installation that allows participants to explore the boundaries of their own body's capacitance in relation to a textile surface. A voluminous textile panel (70cm x 50cm) is mounted on the wall at the height of the upper body region. The knitted copper textile behaves as a high-sensitivity capacitive surface. Body movements performed in front of the textile generate a range of sound qualities that are expressed through an amplified sound system. The textural and tonal qualities of the sound change in relation to the degree of capacitance change, as the participant explores the textile surface. The textile can be seen as an electromagnetic mirror, and a new way of exploring the boundaries and thresholds of our radiogenic bodies. Thresholds is part of doctoral research into artistic expressions of electromagnetic textiles.

The work uses OpenTheremin, Arduino, and MiniMogueVA. If permitted, sound is enriched using a free version of Ableton. In addition, a laptop, stereo amplifier and loud-speakers would be used in the installation setting. The knitted textile antenna is knitted in a plain knit structure with copper yarn and is reproducible using hand-knitting machines.

## Role of Artefacts in this Research Project

Textile samples simultaneously question and exemplify new possibilities in textile design, within the frame of the research program. They have been produced through experimental work with local aims in mind, such as exploring structural and material variations in knitted textiles. Reflecting on these samples provides insight into the ways in which electromagnetic phenomena are expressed through textile materials at the yarn level, throughout the textile structure, and across the surface. Further, placing these textiles in an interaction context has led to revised material and structural designs that more closely join the space between phenomenon and textile expression. With intangible and non-visual material, there is an implied need for sensing. As there is no singular way to sense electromagnetic phenomenon across all of its domains, the act of sensing becomes an aesthetic consideration that suggests the expression of phenomenon-as-material (e.g. as sound, as visualization, as kinetic behaviour), and also the aesthetics of the interaction. Sound was used as an expressive output of electromagnetic fields due to the high resolution and close correspondence of electromagnetic frequencies when transposed onto sound waves. Further, electronic circuits could be used in interactive and performative ways when coupled with a textile antenna, thereby opening to artistic explorations of the design space by incorporating the body, the environment, and electromagnetic space. The sensing method, therefore, creates an aesthetic frame within which to work artistically with electromagnetic textiles.



# UXFTT The Jacket

## Exhibited Artefact

THE JACKET is individually designed for a musician.

And it's a wearable MIDI controller. The exclusive feature: textile capacitive sensors invisibly integrated into the jacket fabric react to touch. Rhythms and melodies can be controlled via the software interface and sent as light impulses to other garments. The jacket communicates wirelessly with the Ableton music software.

The plugin makes it possible to have different stage outfits communicate with each other – the interaction is magical for the viewer. An innovative kind of stage costumes opens completely new ways of performance and interaction for musicians, performers and stage shows. A costume with which virtually everything can be controlled live.

## Role of Artefacts in this Research Project

For me, it's about bringing music and fashion together even more than they already are. Through technology, music is directly coupled with the body and the textile and interacts with each other.



# Spherical Tube

From spheres and knitted tube series 1

## Exhibited Artefact

The sculptural form titled: Spherical Tube – from ‘spheres and knitted tube series 1’ is a research artefact. This exploration examines alternative notions of the body in fashion design processes to explore and open up alternative possible bodily expressions. The form is developed based on the nine head proportion method of sketching in the material by using nine spheres as an alternative of body parts. The nine spheres draped in the knitted tubular structure interrogate alternative forms and bodily expression. The exploration opens up dialogue on the scale and proportion of visualizing a body in material sketching. The outcome reflects on the pliability because of the use of material, that needs to be considered to develop alternative silhouettes along with the body and dress interactions.

## Role of Artefacts in this Research Project

The research artefact, ‘serves as input into knowledge production and as output for knowledge communication’. As inputs artefacts give the insight to start a research project, inspire new explorations in analysing outcomes which further help to formulate a research question. As outputs artefacts highlight whether the research inquiry needs reformulation; demonstrate experimental knowledge of the creative process along with strengthening the findings to articulate in written outputs (Nimkulrat, 2013).



# AI Hoody

A Smart Hoody for DIY Machine Learning

## Exhibited Artefact

Artificial Intelligence need data. Without data it can't learn anything. The human consists of an infinity amount of data and is producing these within movement, such as gestures and facial expressions, heartbeat, speech, temperature, and many more. How does the artificial intelligence develop an application out of it? What happens with that data? Within the AI Hoody we are opening the black box AI and combining these with female craft techniques.

## Role of Artefacts in this Research Project

The AI Hoody enables users to use the machine learning as a part of artificial intelligence. The hardware is based on a toolkit in order make your own smart clothes. Within a digital platform, the movement sensors and actuators will be trained. In this way we grant access to the black box of artificial intelligence. Within the AI Hoody we connect female craft techniques with informatics. We would like to grant access to education in artificial intelligence. The AI Hoody is a closed system with no direct access from the outside, which ensures the data protection.





# Operator Jacket

## Exhibited Artefact

The use case of the Operator Jacket supports people who are surrounded by large groups of people. The operator her-/himself is defined as type of steward, warden or caretaker e.g. at a festival. Through several sensors and actuators, the Operator Jacket reacts to body movements and the environment. The creators tagged their project with terms such as, 'emergency', 'high-visibility', 'light', 'motion', and 'safety'. This tagging with predetermined labels helped the participants to clarify their use case and as a further step towards selecting the matching input and output elements for the garment. The participants created the entire wearable project from scratch. The Operator Jacket is made of weatherproofed impregnated cotton and decorated with holographic soap bubble elements made of transfer foil. To improve better visibility of the 'Operator', especially in the dark, the patched pockets and the centre front are piped with reflector strips.

At the back, the lettering 'Operator' is also applied with reflective foil. The textile touch sensors and the different LEDs are integrated into the design of holographic soap bubbles. All components except the textile touch are placed on the inside of the jacket. For the LEDs, small holes were punched in the fabric, which are covered with the transfer foil on the outside. The same procedure is used for the light sensor. If the sensor is covered, i.e. it's getting dark, green LEDs turn on. The inside of the jacket is protected by a removable lining. By making the lining removable, it is easier to acquire access to the electrical circuit on the inside. In addition, this ensures washability for the lining. This is advantageous because the lining lies close to the body of the 'Operator' and thus exposed to its body perspirations. The microcontroller is attached to the circuit system on the inside of the jacket with four snap buttons. These snap buttons can also be seen in the upper back centre on the outside of the jacket. The finished prototype of the operator jacket impresses with a unique design. Through the light soap bubble elements, the strict grace of the 'Operator' is interpreted anew.

## Role of Artefacts in this Research Project

The Operator Jacket resulted from the exploration of a Do-it-yourself (DIY) tool-kit for textile wearable technologies. The tool-kit is composed of a web-based software platform and custom-made, along with commercial hardware components. The system guides users from a first idea to the finished wearable and helps with positioning the electronic components. It offers a dynamic manual and an easy to grasp visual programming environment. For the exploration, we conducted a practical field test. The participants were recruited via an open call announcement on social media. Because of Covid-19 restrictions, we could only select one of the six projects from the field tests project's pitch to be implemented into practice.

Foto: Detlev Schneider, Model: Katharina Bellinger



# Piega Kn

## Exhibited Artefact

The interactive costume we are presenting was designed as a case study to test folded textile sensors developed with the knitting machine. The aim of the project is to make an interactive costume that detects body movements and turns them into sound without using a tight fitting. Thanks to the folds, it is possible to design a costume that does not adhere to the performer's body and at the same time use the folds as a sensor to detect body movements. The interactive costume was used in an audio performance, worn by an opera singer who was able to make her voice interact with digital electronic sounds produced by the movement of her body using electronic textile sensors.

This costume design was made possible thanks to the collaboration between Giorgia Petri (Interaction Designer), Sophie Skach (Fashion Designer) and Melissa Wedekind (Opera Singer).

## Role of Artefacts in this Research Project

The focus of the research is the use of folded textile sensors to detect the movement of a performer's body. The fold then becomes the sensor that captures the movements of the body, but at the same time allows us to design a garment that goes beyond the standardised human body. Thanks to the folds, we can create a three-dimensional structure that does not necessarily have to be tight to the body, thus emphasising its shapes. As part of this research, folded textile sensors were developed using the knitting technique.

The artefact presented here is an interactive costume, tailor-made for a performer. The costume is a case study to evaluate the sensor reliability and the performance of the interactive machine learning system. After an initial study conducted on the individual sensors and the different areas of interest on the body, the prototype allowed us to evaluate the combination of sensors chosen, observing the performance of the sensors both in terms of the values obtained and the positions. The development of the costume and the performance gave us the opportunity to observe the textile sensors and the interactive machine learning system in a real user case.



# Textiles as a Functional and Performative Material

## Exhibited Artefact

The explorations done within this project is a try-out to understand the material of textiles and the like, mainly from an interaction design perspective. What is that material. Not only as a highly visual and tactile expressive material that can define a garment or an interior object though patterns, texture, shape and connotations. Not only as a highly functional material being able to give shelter, for instance, as a tent fabric. Rather, simply as a basic performative material with an agency also in itself. For instance, it seems to be a material that by dividing, through colouring light or by being a surface for sound defines space in a highly flexible, changeable and relative way. In the end, what can that mean for a design process?

## Role of Artefacts in this Research Project

The artefact is the way to explore, to understand, to see. Searching for an understanding. It is the tool to test, open up, narrow down. Before the thing is out there it is just an idea, curiosity, an assumption. When materialized, it can be approached, dealt with, examined. The process of materializing is a negotiation process of decisions and adaptation to limitations and possibilities. Some things can be compromises, exchangeable variables, others not. To find and set the absolute things builds the foundation for findings. The learnings, or knowledge if using that word, might not reside in the artefacts themselves. Instead, the learnings might lie in the discoveries of how you or I relate to the artefacts when they are in use or motion. It lies in the meeting point of our already existing ideas of something and that thing we now have in front of us, defined through its expressions and our perception. That meeting might feed the thought and add to our experiences. The way we relate and interact to a thing reveals something about our ideas. It can reflect our thoughts and preconceptions of things so that we can view them easier from a distance. The learnings can be articulated through words, or manifested in design decisions of other things.



# HeadSense

## Exhibited Artefact

HeadSense is a co-designed smart mask to enable the daily face garments with cardio-respiratory health monitoring functions, through scientifically established results. HeadSense can be used in various scenarios where both protection against harmful elements and continuous health status monitoring can benefit the user. The design approach thoroughly considers the textile and garment integration to combine smart sensing technologies inside a face mask while keeping its traditional air filtering functions. The design incorporates sensing electronics with layered textile and 3D printed structures inside the face garment to find the equilibrium among sensing functions, wearer comfort, usability and social acceptance.

## Role of Artefacts in this Research Project

Within the material interactions theme at DFKI/Design Research Lab, we develop and analyse novel interactive interfaces based on electronic textiles and textile production techniques. Applying practice-led research approaches, principles and knowledge from fashion and textile design are utilised to develop a textile-specific vocabulary for interaction modes. The aim is to create soft Wearable Technology that promotes autonomy, inclusion and diversity in application areas such as Creative Industries, Health and Wellbeing, Industry 4.0, and Smart Home.

Foto: Detlev Schneider, Model: Katharina Bellinger



# Pet – Care, Comb, Connect

## Exhibited Artefact

PET

Care

Comb

Connect

Pet explores and analyses the behaviour and action that an object can generate in relation to the body and the individual. Therefore the material focus for Pet is on the behaviour rather than the product or object itself. The project also looks into how we care for everyday objects and how this emotional bond can be enhanced and used to increase the emotional value of a product with a speculative approach.

Within the medium of video we can freely explore the framework of this behaviour that the various designed artefacts illicit in relation to the body in that particular instance. We therefore see these videos as sketches and a way to explore. Furthermore the videos act as a proposed instruction manual for the viewer and guide a new way of interacting with everyday objects through its materiality.

## Role of Artefacts in this Research Project

In Pets research practice, the artefact is both an important sketching tool as well as a designed result. Pet strives to explore and push further the core relationship we as individuals have with objects in our everyday life. The project has a fixed main material, Icelandic lamb fur, which gives us certain freedom to explore the notion and shape of the object itself.

Sometimes the object is a known product while other times it is a completely unknown entity that has a fixed behavioural purpose through its materiality.

'The shortest answer is doing the thing', therefore we try to put our objects to the test before they are fully formed. We always test out core properties of the material in a behavioural setting before finalising the purpose of the product. This frame of exploration is the true artefact of the Pet project, where we explore and analyse the behaviour the material or object generates outside the boundaries of its form. This element of emotional care towards an innate object is Pet's main research focus.

Pet is by Helga Lára Halldórsdóttir and Marta Heiðarsdóttir

Cinematography and editing: Sigurður Unnar Birgisson



# Critical Textile Topology

## Exhibited Artefact

The emergent textile-forms series unite the research of 3 (then) PhD students, McQuillan, Peterson and Walters. They originate with Peterson's 'reversed crafting' form defining process, questioning garment space and invariant properties. Form III is 3D scanned, and through McQuillan's zero-waste textile-form process, 'flattened' into a layered 2D textile design in CLO3D. The flattened design is combined with weave structures that enable the 2D fabric, once woven on a jacquard loom, to be cut and expanded into a 3D textile-form not requiring any further assembly methods. This process uses heat reactive yarns, originating in Walters's self-forming woven textile design research, which enable greater control over the resulting form. The series illustrates a number of emergent stages, from the way the surface of Form III is transformed as the clay model is massively enlarged, to the interaction of Form and surface as the textile form is shrunk.

## Role of Artefacts in this Research Project

In our collaborative work, the artefact exposes the intersection of our research practices, while broadening the scope beyond what we can achieve individually. The artefact itself is a synergistic combination of processes, materials and media.

Foto: Amanda Johansson & Ulli Strehl, Model: Erika Wall



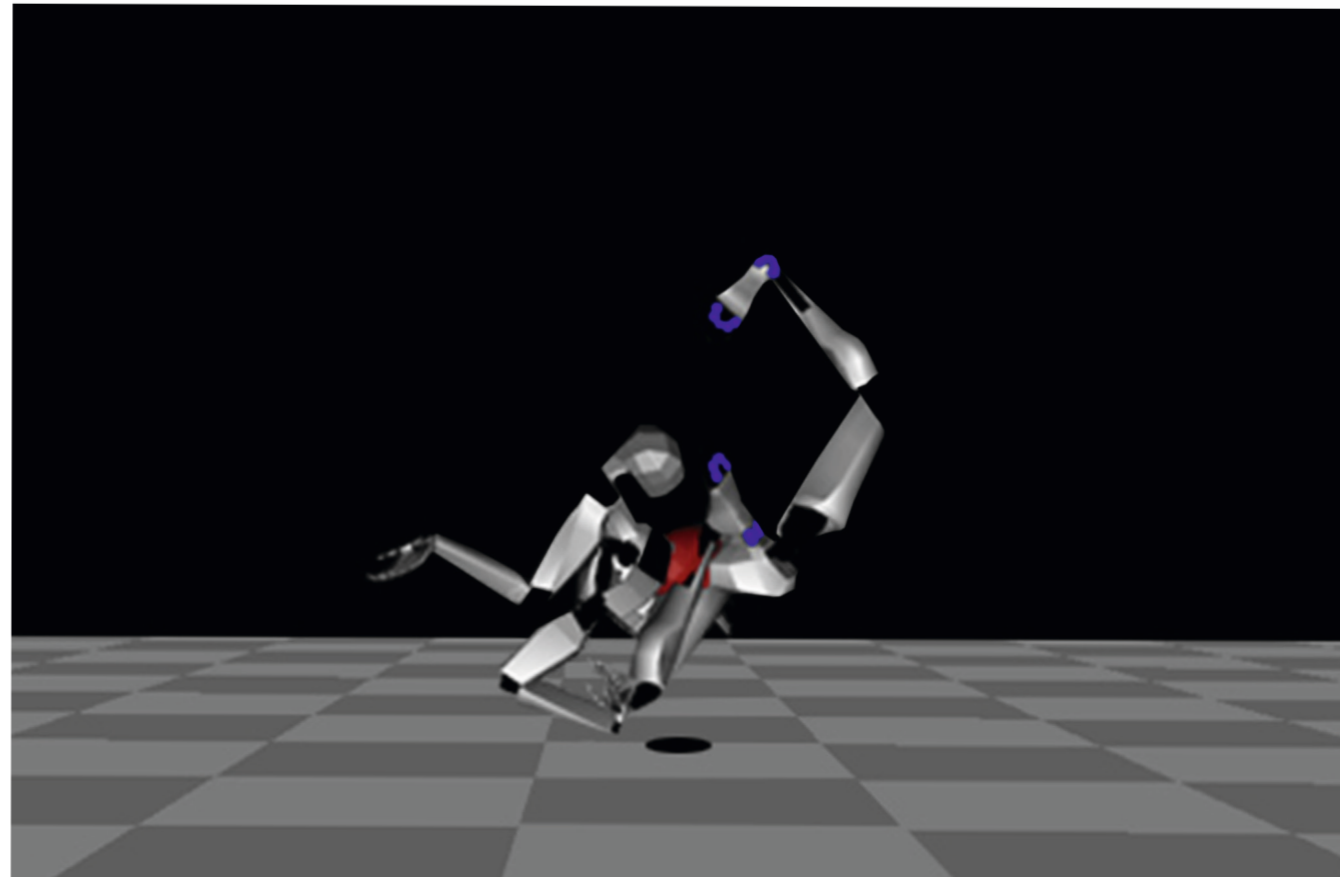
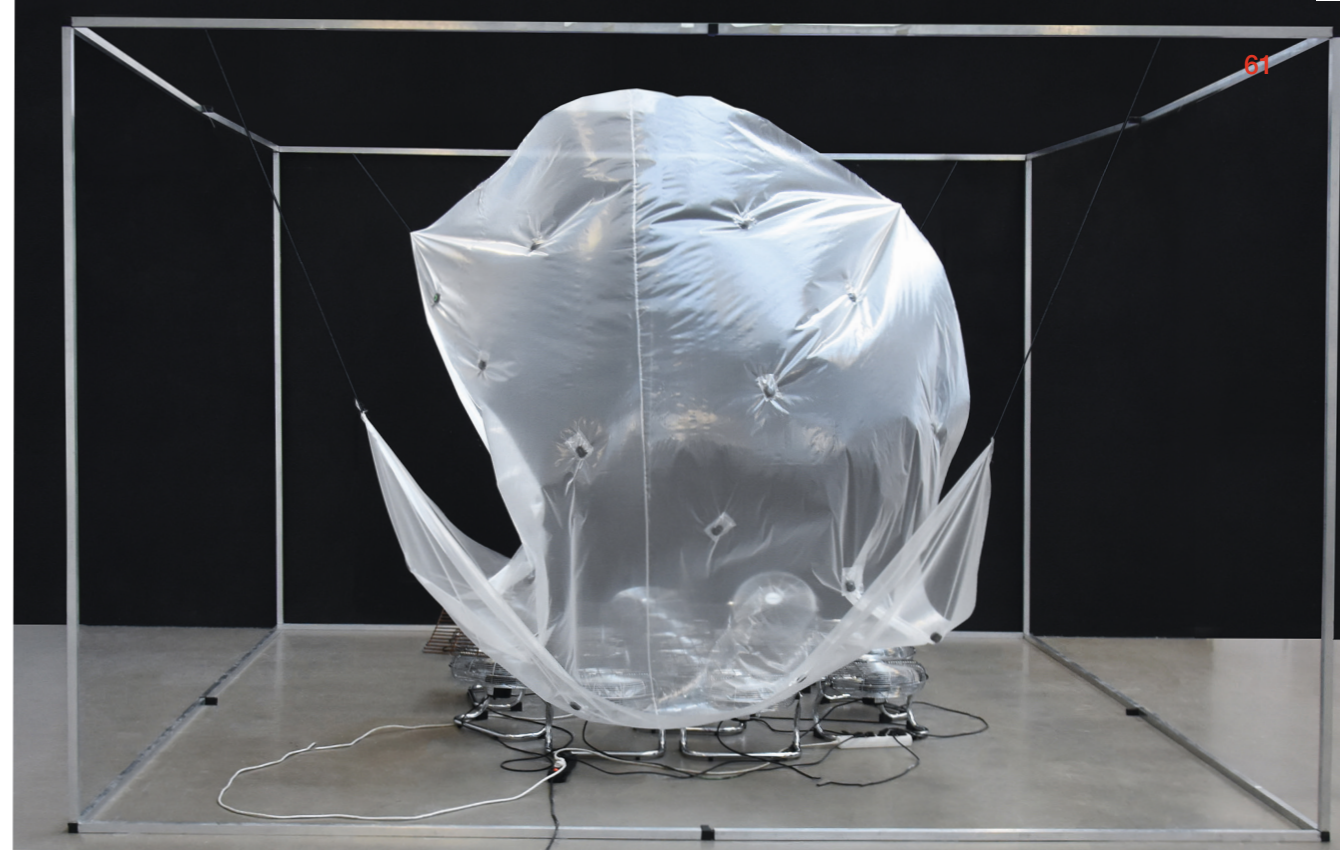
# Textile Movement Translated as Digital Body Movement

## Exhibited Artefact

A mixed-reality installation was developed as a design tool and used as a sketching method to translate textile movement in physical space into human-body movement in digital space. Alternative body-textile expressions were recorded and analysed based on sketching methods. What emerged suggested that the resulting physical and digital bodily forms created possibilities for designing alternative types of dress, beyond jackets, shirts, and trouser. The observations may contribute to the fashion design field in both academia and industry by suggesting alternative body-textile expressions as the starting points and criteria for designing dress from a different perspective than is commonly practiced.

## Role of Artefacts in this Research Project

The role of the artefact in our research practice is guided by Nithikul Nimkulrat's definition of artefacts in artistic-based research practices (Nimkulrat, 2013). Artefacts as inputs serve as a potential starting point from which research questions are formulated or serve as the means to provide data for analysis from which knowledge is constructed. As outputs, artefacts serve to indicate whether identified research problems require reformulation or drifting, as well as strengthen findings articulated in the written output. Thus, artefacts are regarded as an elemental part of knowledge construction and communication by reflecting on them during and after their production.



# Woven Light

## Exhibited Artefact

1. Fiber optic weave connected to video of digital textile. Colour and light shifts and moves in relation to the moving image creating a responsive textile.

2. Fiber optic weave with translucent additive manufacturing. Added properties to two-dimensional weave – lighting can be emphasized and extended on the Z-Axis through the addition of light diffusing PLA.

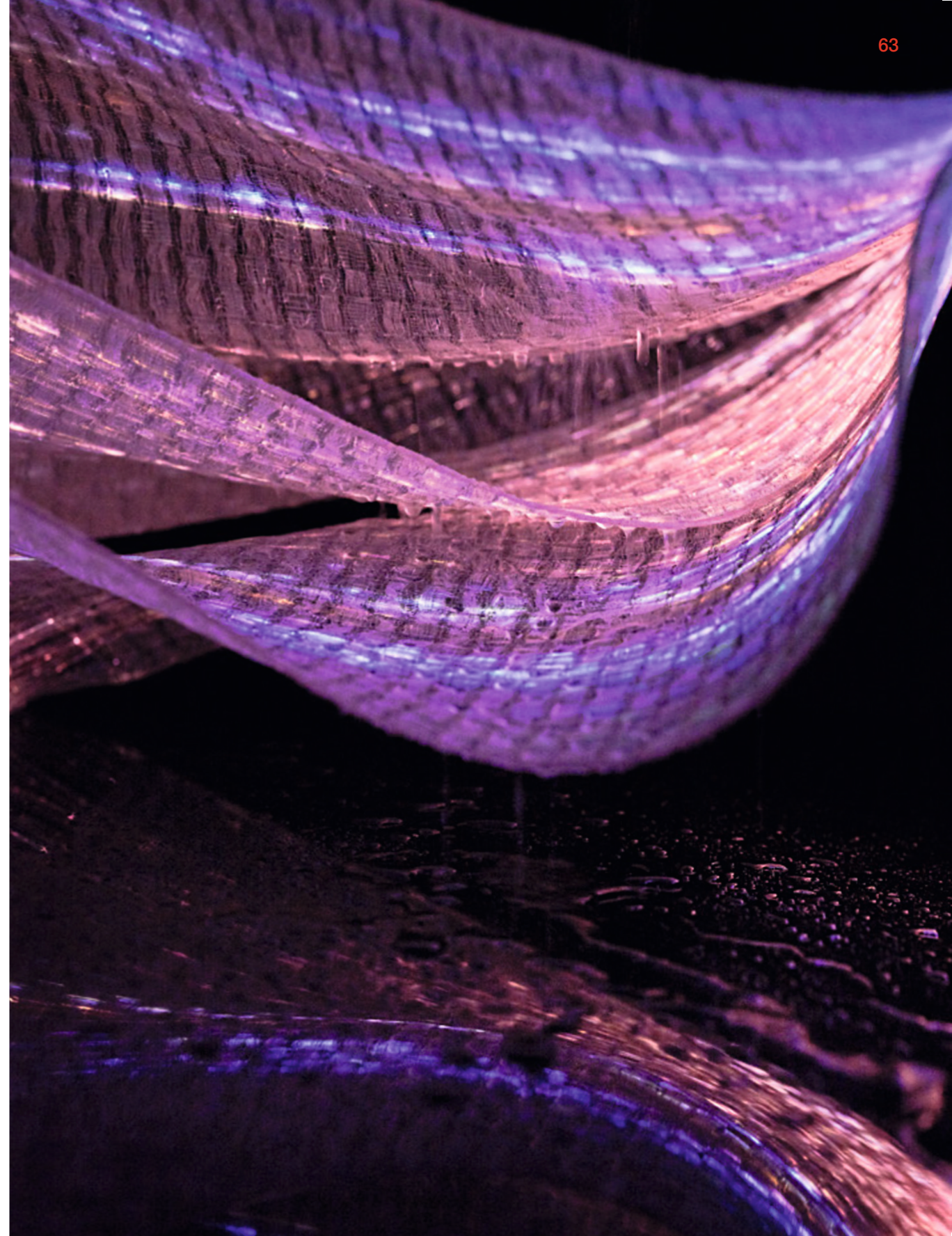
3. Orange fuzz. Form the series Digital Textiles – tactile expressions on a virtual environment (af Ekenstam, 2021). The work builds on an immaterial materiality, with an emphasis on the divergence of aesthetic expressions. It explores the crossing between traditional craft and complex computer-generated structures.

The work consists of a collection of seven digital artefacts generated from CGI artwork of classical tartan patterns.

## Role of Artefacts in this Research Project

The research is driven by prototype production (research by design). Technical and visual findings are explored and expanded on in parallel in physical and digital space. Interactive and responding textiles are paired with digital textile artefacts or extended into physical space through sensor or 3d printing.

Foto: Patrick Roos





# Expressions of Discarded Design Decisions #1

## Exhibited Artefact

Carefully placed on top of each other, the discarded sweaters, devalued and unsellable, pile up into layers of knit, shapes, structures, textures and colours – a mille-feuille of discarded design decisions. In the act of layering, new expressions arise, inviting one in seeing new possibilities, potentials, ideas, and fantasy to dive into, and to explore. The artefact consists of 50 discarded knitwear garments, sorted and donated by the non-profit organisation Björkåfrihet. Knitwear is among the most difficult of garment categories to resell due to its changing properties. The garments are used in their given state without any further sorting or manipulation.

## Role of Artefacts in this Research Project

The role of the artefact in our research practice is to visualize and communicate explorations and developments of design theory and practice. The physical examples hold a generative role, to evoke questions, visualize reasoning and inform the development of the thought process towards abstracted concepts and theory building. Hence the artefact embodies concepts and knowledge made available only through its existence. The physical example in our work generates and communicates knowledge and thoughts. It is both question and answer, both exploration and theory. The artefact serves to develop the theory in the process, the resulting artefact is the theory in concrete means. 'Such a discovery can be founded on a very sudden, or more gradual, insight. It is a matter of "seeing", in this case seeing that there is a certain substance/element with certain remarkable properties.' (Hallnäs, 2018)



# Form III

## Exhibited Artefact

Form III concerns the speculation of form-defining systems for textile-form, in this instance, as dress. Inherently different to the currently dominant system of cut and assemble, Form III seeks other imaginaries for processes of textile-form. Form giving and surface crafting as inter-dependent actions have guided the work, in a search for other realities of textile-form, as dress and beyond. Through Form III, other materialities as sole entities or as an amalgam of many can come to replace the material body as the initial point of departure, resulting in less linear processes of dress. Consequently, that which accumulates in the structured topologies of Form, in the process of becoming Form, gets transposed to the textile-forms where information nesting within gets deposited differently depending on the textile formulation of the given example. Instances can be mapped and listed, clarifying aspects of their origin as well as expressive qualities. Thus, Form is the hylonoetic or hylomorphic interpretation and juxtaposition of textile-form, of material body of human, of material body other than that of human, and of known garments actively worn.

## Role of Artefacts in this Research Project

Within this research work, the craft skill of the practitioner is utmost pivotal in the engagement of forming and informing the 'what' that is to become the 'thing' of material or immaterial significance (Gänshirt 2007, Schatzki, Knorr Cetina & von Savigny 2001). Such a thing can come to exist within an experimental system and contain, emit and define information and knowledge. These things are previously discussed as figures of thoughts (Peterson 2019, 2020) or as suggested by McLeod (2006) and Hallnäs (2018) as 'figures to think through' and by T.E Jones as 'objects of attention' (2005; 228). The figure of thought is proposed as to enable both the gathering, generating and articulating of knowledge, mechanical as well as material, the how, but also the knowledge of questioning, the what, as in what is it and what can it become. As such, a figure of thought is similar, and perhaps a slight simplification of the epistemic object. Brought to attention by Rheinberger as 'material entities or processes that constitute the objects of enquiry' (p. 28) and articulated by Ewenstein and Whyte as an 'object of inquiry and pursuit' (2009; 5) epistemic objects are described as to 'embody what one does not yet know.' In this way, they are significant in their vagueness as both proposing and answering questions that ought to be considered in the construction of artefacts as well as theory. In this search, I have looked towards transpositions as chains of actions and as phenomena in order to articulate and further the understanding of what processes can be considered to accumulate the information needed in order to define, unveil and create these occurrences through the oscillating movements of the experimental system. Transposition is described by Braidotti as a 'theory that stresses the experience of creative insight and engendering other, alternative ways of knowing', and suggested by Rheinberger as 'the creation of an experimental context in which epistemic things can be explored for the sake of gaining knowledge about them' (p.215). As such, the positioning of the craftsperson, or experimenter is emphasised as being within the action, tinkering, manipulating, gazing, trying and finding out, all within the technical arrangements and assemblages of an experimental system.



# Penguin + Twistbox

## Exhibited Artefact

Penguin and the Twist-box are examples of an exploration of technique. However, they originate from opposing design processes. The form of the Penguin textile artefact arises from an experiment exploring a three-layer weave-and-cut pleat structure (developed by Holly McQuillan: McQuillan, 2020), but transposing it to a closed volume incorporating stiff and shrinking yarns. The woven geometry is a simple one, and it is the interaction of the material and structure that gives rise to complex three-dimensional form. The Twist-box was designed to develop and showcase the suture structure at its fold-lines. This weave structure enables two woven layers to unfold and refold flat. The design process leading to this artefact included tests exploring variations of the suture structure, before a paper model of the box was produced, and a number of woven iterations were produced. Each iteration was examined for flaws, and thus informed the next iteration, which crept closer to the ideal of the paper model. Thus the design process for the Twistbox was a hylomorphic one (Ingold, 2010). Its complex weave structures lead to a simple geometric form, and each development was a narrowing of possibility. In contrast, Penguin arises from a 'form-finding' design process (Baerlecken & Wright, 2014): one that allows space for the natural tendencies of the materials within a structure to produce three-dimensional form. While both artefacts serve as exemplars for different form-enabling woven structures, they also illustrate the contrasting design processes embodied in their textile-forms.

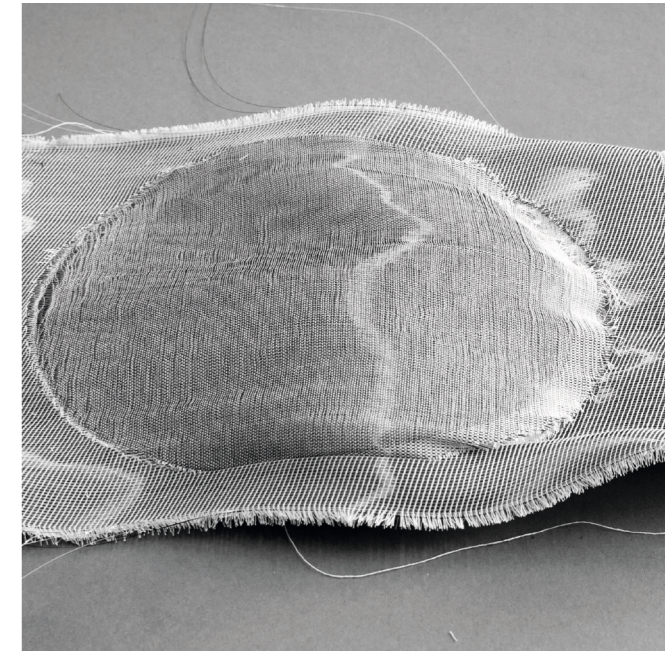
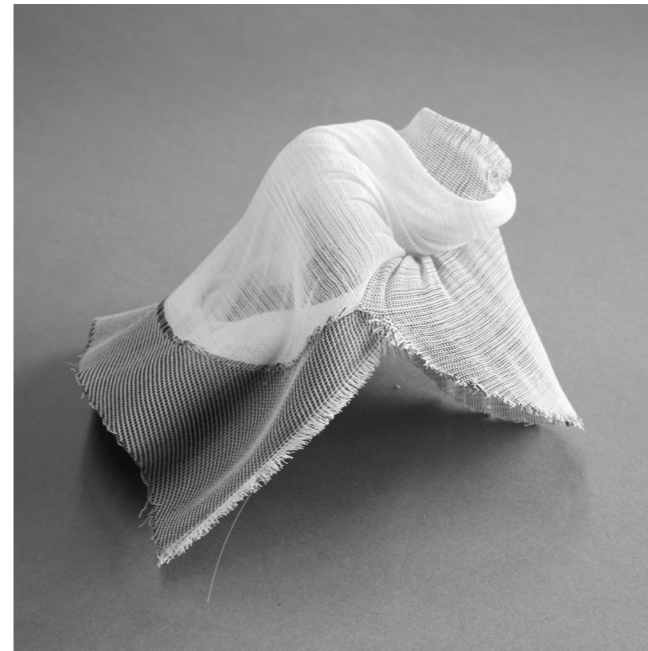
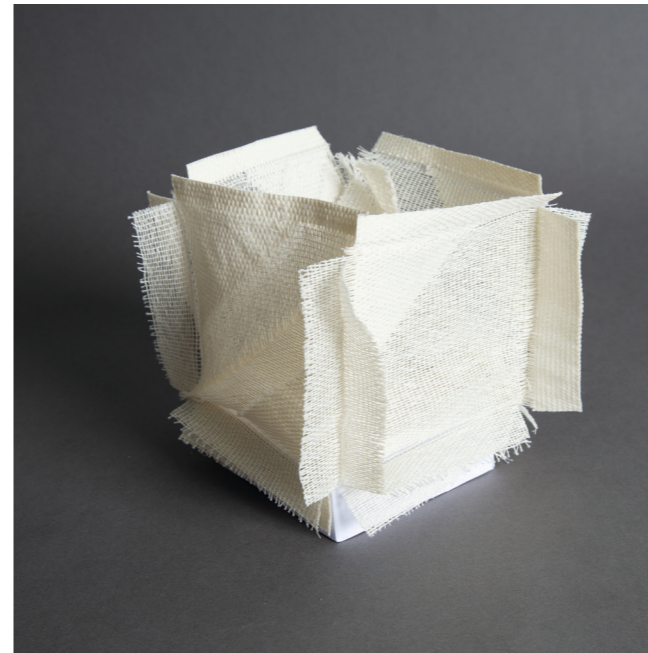
Baerlecken, D. and Wright, K. (2014) 'Nominalized matter: Agency of material', *International Journal of Architectural Computing*, 12(3), pp. 339–356. doi: 10.1260/1478-0771.12.3.339.

Ingold, T. (2010) 'The textility of making', *Cambridge Journal of Economics*, 34, pp. 91–102. doi: 10.1093/cje/bep042.

McQuillan, H. (2020) *Zero waste systems thinking: Multimorphic textile forms*, PhD thesis, University of Borås, Sweden.

## Role of Artefacts in this Research Project

The primary role of the research artefact in my practice is as an experiment, testing some combination of material and structure and the way these interact to create form. In this respect, it is often an answer to a 'what if?' question. These explorative artefacts seek a deeper understanding of the interaction of material and structure: at first discovering new behaviour and new forms, and then understanding how the design elements can be manipulated to direct the outcome. They are pieces of provisional knowledge, embodying a set of principles yet to be understood. Secondly, the research artefact may act as an exemplar, illustrating some method or principle. It is at this transition from experiment to exemplar that knowledge and theory are articulated. My research process proceeds through the accumulation of artefacts, each informing and directing the next round of experimentation.



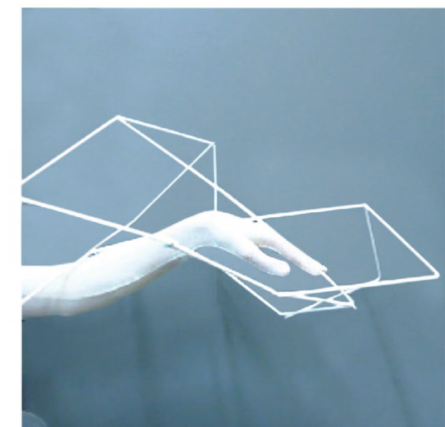
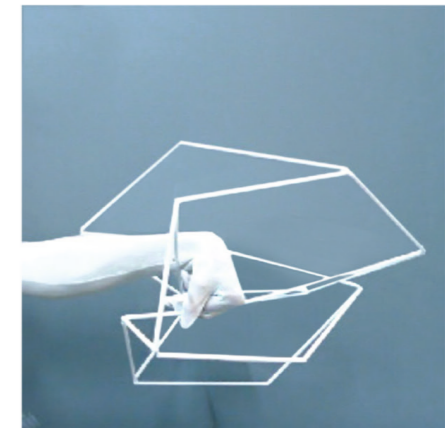
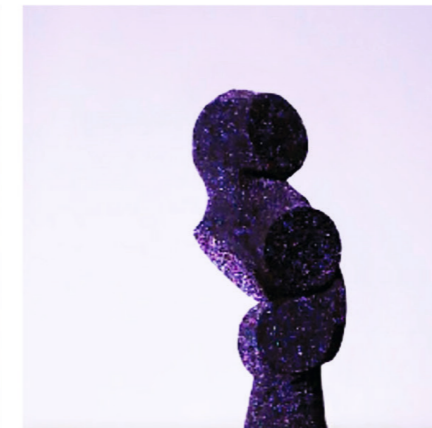
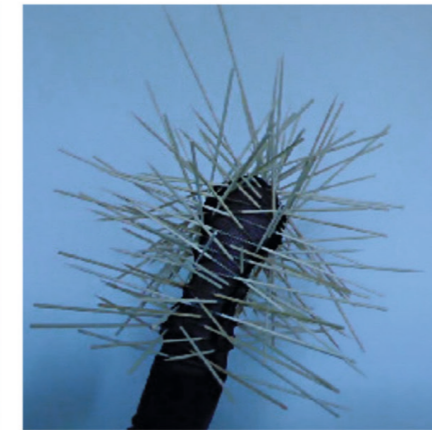
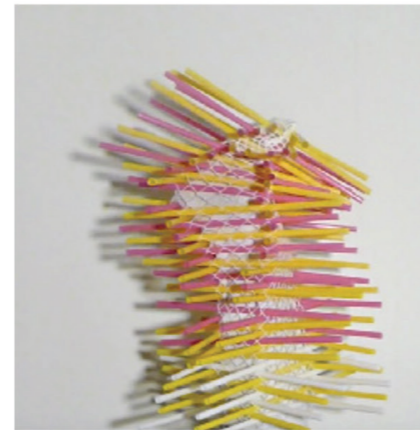
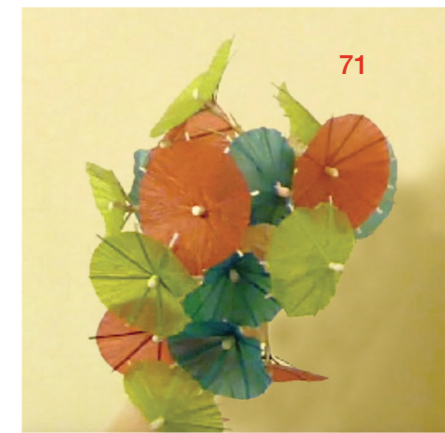
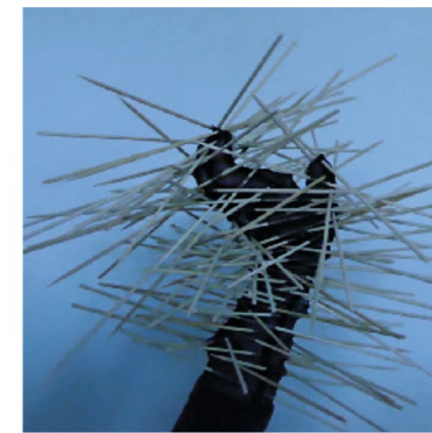
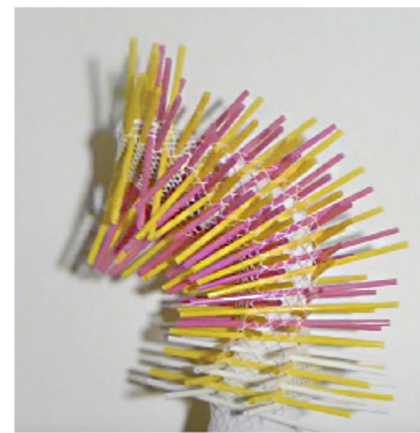
# Fragmented

## Exhibited Artefact

This work deals with the process of relating a material to the body. It has to do with materiality, the complexity it suggests in itself, and how to apply it into a method for construction. The study is based on 30 sketches of hand movements performed between the 1 November and 31 November, 2018. The hand was chosen due to the variation of movement it can perform: twisting, rotation, and folding its various limbs. The sketches act as figures of thought as defined by Karin Peterson 'physical representations of thinking' that generate knowledge. In the film, a selection of the experiments is discussed by placing the examples together two and two or three and three with the purpose to define, problematize, or motivate a particular finding. The main analysis is based on video recordings and stills from the recordings, from this, the categories are grouped and relationships between them are identified.

## Role of Artefacts in this Research Project

The research artefact is the core of my research practice as it is what introduce new understandings. As a result, it is non-verbal, the research artefact instead suggests things that we can grasp on an aesthetic and fundamental level and that can trigger new 'understandings'. All aspects of an artistic research artefact is far more complex than what can be verbally understood, here verbalizations act as an abstraction and aid a process of understandings simultaneously as it hinders the full richness of aesthetic artefacts.



# Coloured Light Explorations in Different Realities

## Exhibited Artefact

The selected artefacts were part of an experimental exploration, aimed to investigate coloured light as a material for design in relation to physical and immersive virtual reality spaces. The analysis of the design artefacts, which were made by undergraduate design students as part of the explorations, guided the development of a design method for fashion and textile design in the following step that could lead to a re-learning of coloured light as a material for design for developing novel artistic expressions. The first series of explorations focused on addressing the following questions in both physical and virtual reality: How do coloured surfaces and coloured light interact? How do interactions between coloured surfaces and coloured light influence the process of designing surface patterns? In order to critically examine the results of this research, textile and fashion design undergraduate students participated in a five-day workshop during which they experimented with, and reflected upon different types of interaction between coloured surfaces and coloured light in both physical and virtual reality.

## Role of Artefacts in this Research Project

Research through design involves a researcher who is also a professional designer generating a theoretical contribution for advancing knowledge of the design field (Hallnäs & Redström, 2006, p. 133), to be of use for other researchers and practitioners in the field. This form of research has been discussed and developed during the last two decades (Durling et al., 2002; Frayling, 1993) and is today known as 'practice-' or 'experimental-based' design research (Frayling, 1997). In this sort of experimental research, design is usually referred to as the creation of an artefact (Hatchuel & Weil, 2009) through a process of exploration and discovery (Jones, 1992, p. ix). It demonstrates the development of design processes in terms of what decisions have been made and, crucially, how; thus, they become tools for interpretation and constructing theory.



# VIEW-MASTER

## An Analogue Method for Evaluating Artistic Work

### Exhibited Artefact

The View-Master wheel consists of 7 duplicated images placed in a circle. Through its inherent form it therefore projects some kind of narrative, a loop of 7 images presented one after another much like a GIF. The duplicated frames enable a parallel view on a course of events or a sequence and is here used as an analogue method for evaluating and presenting artistic work. Photographical documentation of performed work and experimentation is reviewed and selected, after which it is scaled down to fit the frames of the View-Master wheel, then printed on plastic and cut and glued to the wheel.

Applying the View-Master format when evaluating experiments in artistic research provides a change of perspective since the process assumes the acts of collecting, seeing, selecting, positioning and scaling. The View-Master allows an intimate yet distant view. We are close and at the same time cut off from what we see. These parallel views enable distance between the practitioner and her work which becomes necessary when going from the performing body of the work to the evaluating and analysing one.

### Role of Artefacts in this Research Project

Our understanding of the world and the objects in it is shaped by the language we use to describe it (Whorf 1956). But our understanding of the world has dramatically changed with the advancement of technology. Through time photography, microscopes, radio, x-rays, computers and internet have altered our relationships not only to our surroundings and to time but to our own bodies. So we are, maybe more so, shaped by the mediums in which the language is spoken through (McLuhan 1967). Design is not only a linguistic language but a sensory and bodily language with tactile and visual traits very much shaped in response to our surroundings. The artefacts are manifestations of thoughts and reflections made on certain aspects of fashion and life and function as vessels for design to be discussed through. They are tangible dots in a map-making process attempting to pollinate fashion in an interdisciplinary way. The artefacts produced become objects for curatorial grips as collecting, selecting, organizing, storing and putting them on display which are methods for producing knowledge (Obrist 2014). Therefore the role of the artefacts are means to advance the language in which fashion is expressed and thus expanding the understanding of fashion landscapes and the ever changing world we are a part of. A world where design shapes us as much as we shape design.

McLuhan, Marshall, Fiore, Quentin. & Agel, Jerome. (2008[1967]). The medium is the message. London: Penguin

Obrist, Hans-Ulrich & Raza, Asad (2014). Ways of curating. London: Penguin Books

Whorf, Benjamin Lee, Carroll, John B (2020 [1956]). Language, Thought, and Reality: Selected Writings of Benjamin Lee Whorf [Electronic book]. Barakaldo Books



# Sound Folds

## Exhibited Artefact

In paper and textile materials, a fold is evidence that action has taken place, a recorded memory of interaction. The goal of the Sound Folds research project was to develop interactive garments for three musicians, playing the trumpet, cello and vibraphone based on their individual gestural patterns. The rhythmic and trained movements of the three musicians were materialized as folds in paper garments, which were used as a basis to design textile garments with embedded folded sensors. The result is a combination of acoustic instruments playing with interactive and responsive electronic music elements intended for blended performance settings. Sound Folds benefitted from the work of an interdisciplinary team of artists and engineers, spanning expertise in e-textiles, fashion design, motion capture, and interactive music systems involving machine learning for gesture recognition.

## Role of Artefacts in this Research Project

Within the Folding Electronic Textiles research project led by Prof. Dr. Berit Greinke, a multidisciplinary team studied dynamic old patterns, 3D textile electronics and interactive machine learning. Pattern design meets textiles, engineering and music composition for artistic research involving state of the art processes to create a new materiality. Our work brings the new technologies of interaction towards complex textile shapes, informed by mastered traditional crafts practices, such as pleating. Prototypes are artefacts as working steps, passing on through our different expertises, evaluations and feedbacks.



# PowerGrasp

## Exhibited Artefact

Within the research project PowerGrasp a wearable soft robotic system for arm, shoulder and hand support was developed. Despite the modernisation of work processes and the use of new technologies, a large number of musculoskeletal disorders can be traced back to occupational activities. The aim of the project was to reduce the physical strain of assembly workers by means of force assistance, thus preventing possible consequential damage and preserve the workers' health. Learning for gesture recognition.

## Role of Artefacts in this Research Project

Prototyping played a key role in our design process: Within the design process, several participatory workshops were conducted with potential users and experts, to learn about their thoughts, needs and visions regarding a possible assistive system. For that purpose, a toolkit was designed to help the participants to visualize their ideas and suggestions prototypically on their own bodies with.

The analysis of the workshops led to a concise collection of requirements for a body worn support system in the fields of use, design and construction, interaction and feedback. Based on these findings, we started to build first low-cost prototypes and experimented with different techniques and materials to move different parts of the body. These early prototypes helped us to understand concepts and functionalities, to transfer them to new situations and to identify problems early in the process. Later in the project and in cooperation with the involved partners, a working demonstrator of the assistive soft-robotic system was build.



GEFÖRDERT VOM



Bundesministerium  
für Bildung  
und Forschung



# Weavings for Others

## Exhibited Artefact

My textile hybrids explore relationships of different kinds. Relationships on a level of materials and textile construction are explored by e.g., weaving with nettle stalks. Relationships in between all the materials that have been used e.g., cotton threads, wool fibres, hollow stalks, and clay pebbles are investigated by the process of engaging in textile techniques. Relationships in between material/textile hybrid and space/environment are investigated on different levels. The wool fibres are felted by wind and rain, a caterpillar inspects the nettle stalks of a hybrid textile; a human neighbour feels the tactile differences of a flexible, soft and permeable weave and a rigid and hard biomaterial pattern, and I observe a spider running over a hybrid textile landscape in my living space. An artefact doesn't only remind me of an idea, or helps me to think it through and further, it is also a testing site. This allows me to situate it in a real-life scenario where I can observe its agency on a regular basis.

## Role of Artefacts in this Research Project

I understand the design practice as a way of being-with and staying-with, rather than as a solution-driven practice (Keune, 2021). Artefacts in my research practice explore, represent, and communicate relationships between all the different materials, techniques, conditions, influences, and persons directly or indirectly involved, affected, or entangled in their becoming. An artefact doesn't only remind me of an idea, or helps me to think it through and further, it is also a testing site and allows me to situate it in a real-life scenario where I can observe its agency on a regular basis. Hence, it turns into what Jönsson would call a 'design event' (2014) and become a platform to become aware, to observe, and to learn. Sometimes living with an artefact turns into 'staying with the trouble' (Haraway, 2014) if certain expectations are not fulfilled or if some troubling development occurs, e.g. the experiment is eaten by a mouse or temporal home of hibernating lacewings (Keune, 2019). The hybrid textile artefacts serve as metaphors for understanding and expressing philosophy beyond a purely human focus and serve as embodied questions that are supposed to remain open even when parts of them can temporarily be answered. This means that artefacts are not necessarily presented as knowledge about concrete things but propose alternatives to already existing methods or situations in design (Cross, 2007, p.43) in order to advance the practice itself (Jones 1992, p. 6) by inviting and expressing different forms of thought.

Cross, N., 2006. *Designerly ways of knowing*. Springer.

Dunne, A. (2008) 'Hertzian tales: Electronic products, aesthetic experience, and critical design'. Available at: <http://www.citeulike.org/group/7111/article/3508492> (Accessed: 6 January 2017)

Haraway, D. 2016. *Staying with the Trouble: Making Kin in the Chthulucene*. Durham: Duke University Press

Jönsson, L. 2014. *Design Events: On explorations of a nonanthropocentric framework in design*

Jones, J. C., 1992. *Design Methods*. John Wiley & Sons

Keune, S. 2019. 'On Textile Farming: Living Indoors'. Borås: The Swedish School of Textiles

Keune, Svenja. 2021. "Designing and Living with Organisms Weaving Entangled Worlds as Doing

Multispecies Philosophy." *Journal of Textile Design Research and Practice*  
<https://doi.org/10.1080/20511787.2021.1912897>



# Covered Objects (Plant) (Bouquet) (Orchid)

## Exhibited Artefact

In this series of objects, the relationship between object and image is explored through transposing, separating, and redefining intrinsic properties of the object. Essential parts have been removed and replaced/redressed with draped images of what was there or what could have been there. By adding a new physical layer, the object attains a new narrative and challenges its own meaning or perception, in some cases commenting on its 'morality' while hiding or revealing itself. Transient objects obtain permanence. Choosing objects such as 'Plants and flowers' is also a direct reference of 'classical still life paintings' where objects traditionally are imbued with symbolic meaning. In their artistic practice PUTPUT (Stephan Friedli, CH and Ulrik Martin Larsen, DK) explore our immediate surroundings and the objects we use, abuse, admire and interact with in everyday life. Often entering a negotiation or interrogation with specific objects to fully examine what they are and what they may become. Ideas are exhausted distilled and refined to accomplish works that are self-explanatory, ambiguous and profoundly superficial.

## Role of Artefacts in this Research Project

Artefacts are a constant, essential and necessary physical manifestation of thoughts and ideas throughout my practise.



# Sound to Wear

## Exhibited Artefact

Experimental artefacts are central to my research as they are intended to generate ideas and design methods, which were developed within embodied sound practices. In my research, the artefact suggests the direction of a proposed programme and methods for de-signing sonic expressions. The knowledge of sonic form and expression is explored and developed through the research artefacts. The research artefacts inspired thought processes and resulted in an alternative theoretical approach. The artefacts are considered not as design products themselves, but as 'research archetypes' (Wensveen and Matthews, 2015, p. 8) and 'evocative objects' (Su and Liang, 2013, p. 612; Turkle, 2007, p. 71). The research artefacts, such as the sound-tools (Sound to Wear) are the intermediary knowledge, the 'bridging concepts' (Dalsgaard and Dindler, 2014, p. 1635) that connect the embodied sound practices and theory. They exist 'midway' between instances and theories, intermediate knowledge that captures and materializes thinking.

## Role of Artefacts in this Research Project

Fashion is primarily a visual ontology consisting of definitions, theory, and methods that are based on visual language. My research revises fashion by approaching it from a different-sonic-perspective wherein sound is considered not as a negative aspect but as a potential source of a new theory and method. Sound is presented not as a secondary quality of designed objects, but as the main idea-generator. An investigation into sonic expressions is seen as a disruptive fashion practice and could be described as a process of unlearning – encouraging one to leave behind pre-existing knowledge of fashion expressions by focusing on something else when defining and designing. The research addressed a gap in knowledge through the Sonic Fashion Ontology, which constitutes new, foundational knowledge of sonic expression. The research findings challenge existing theory with new terms, definitions, methods, and tools, and show the importance of understanding fashion as a platform for new knowledge production and critical thinking, along with unlearning and rethinking preconceptions of what dress is and could be.

Sound to Wear is an analogue toolkit that was developed during the research practice. It consists of 33 sound-tools for two body-object interactions-listening and sounding.

Foto: Lars-Åke Green



# DRAFTS – Symposium

The DRAFTS Symposium was an online event which brought together researchers and designers across institutions to unpack the varying roles artefacts can play in design research.

Two keynotes by Professors Sarah Kettley (Material and Design Innovation, Edinburgh College of Art, The University of Edinburgh, UK) and Daniëlle Bruggeman (Fashion, ArtEZ University of the Arts, the Netherlands) introduced different perspectives on this discourse in relation to their research. The audience was invited to participate in a panel discussion after the talks.

Following this, researchers and designers, who presented their work in the main DRAFTS exhibition at designtransfer gallery, further broadened the conversation by sharing insights into the relationship between artefact and process within their projects.

Prof. Berit Greinke and Naima Gilani guided keynotes, exhibitors and visitors through the symposium, kick-starting a multidisciplinary conversation around the role of artefacts in design and practice-based research.

# 3 Symposium

Anna Lidström • Clemens Thornquist • Delia Dumitrescu • Erin Lewis • Esther Zahn • Faseeh Saleem • Friederike Fröbel • Georgina Koschke • Giorgia Petri • Sophie Skach - Melissa Wedekind - Hanna Landin • Hannah Friederike Fischer • Helga Lára Halldórsdóttir • Holly McQuillan • Kathryn Walters • Karin Peterson • Jan Tepe • Karin Hedlund • Majli af Ekenstam • Karin Landahl • Stefanie MdO • Karin Peterson • Kathryn Walters • Linnea Bågander • Marjan Kooroshnia • Matilda Forssblad • Pauline Vierne • Erika Körner • Rahel Flechtner • Katharina Lorenz • Svenja Keune • Ulrik Martin Larsen • Vidmina Stasiulyte • Luisa von Radziewsky • Paul Biessmann • Marta Heidarsdóttir • Daniela Wittmann • Patricia Wagner • Katja Jahn • Pauline Stockmann • Simone Syrhe • Erika Blomgren • Ricarda Bigolin • Luna Gil • Daniëlle Bruggeman • Sarah Kettley • Berit Greinke • Naima Gilani

## Moderators

**Berit Greinke** is a junior professor in Wearable Computing at Berlin University of the Arts and Einstein Center Digital Future (ECDF). Her research focuses on engineering design methods and fabrication techniques for electronic textiles and smart materials, combining crafts with novel manufacturing technologies. Her work is multidisciplinary, informed by research and practice within design, art, physics, material science and electronic engineering.

**Naima Gilani** is a marketing consultant, storyteller and business analyst. She currently works with startups and established brands, and specializes in crafting authentic brand narratives and translating them into engaging and intent-oriented content on digital media. She has been actively involved at the Daachi Arts and Crafts Exhibition, Lahore. In 2021, she also moderated the first DRAFTS symposium.

## Keynote Speakers

**Sarah Kettley** is a professor in Material and Design Innovation at Edinburgh College of Art, University of Edinburgh, United Kingdom. She is a Chair of Material and Design Innovation, with a remit to develop new cross-disciplinary teaching and research initiatives at the intersections of making traditions, new technologies, and the humanities. Sarah chairs the RAFT Research Group, whose members investigate innovative interdisciplinary research practice through making and discussion. Her doctoral research combined a background in jewellery and silversmithing with the emerging field of wearable computing to ask what a craft methodology for wearables might look like.

**Daniëlle Bruggeman** is a cultural theorist and professor in Fashion at ArtEZ, University of the Arts in Arnhem, the Netherlands. She teaches at the MA critical fashion practices and leads the Centre of Expertise Future Makers. Bruggeman holds a Ph.D. in cultural studies and has published on topics like the fluid, performative and embodied dimensions of identity, and fashion as a new materialist aesthetics. Her current research focuses on alternative systemic approaches, an emerging practice-based critical fashion discourse, and thinking through the issues of human agency and material agency from a post-anthropocentric perspective.

# Program

<p><b>Opening</b> <span style="float: right;"><b>18:00</b></span></p> <p>Jan Tepe<sup>1</sup>, Faseeh Saleem<sup>1</sup>, Vidmina Stasiulyte<sup>2</sup>  <sup>1</sup>Doctoral Candidates in Fashion Design at University of Borås  <sup>2</sup>Post-doc Researcher and Senior Lecturer in Fashion Design at University of Borås</p>	<p><b>Session A</b> <span style="float: right;"><b>19:20</b></span></p> <p>Georgina Koschke - Operator Jacket            Researcher in Textile Electronics at German Research Center for Artificial Intelligence</p> <p>Helga Lára Halldórsdóttir - Pet: Care, Comb, Connect            Doctoral Candidate in Fashion Design at University of Borås</p> <p>Kathryn Walters - Penguin   Twistbox            Doctoral Candidate in Textile Design at University of Borås</p> <p>Esther Zahn - UX.FTT Jacket            Researcher in Textile Electronics at German Research Center for Artificial Intelligence</p> <p>Karin Peterson - Form III   Emergent Textile-Form II            Doctoral Candidate in Fashion Design at University of Borås</p> <p>Vidmina Stasiulyte - Sound to Wear            Post-doc Researcher and Senior Lecturer in Fashion Design at University of Borås</p> <p>Hanna Landin - Textiles as a Functional and Performative Material            Post-doc Researcher and Senior Lecturer in Interaction Design at University of Borås</p> <p>Svenja Keune - Weavings for Others            Post-doc Researcher in Textile Design at University of Borås</p> <p>Clemens Thornquist - Organizing Wilderness            Professor in Fashion Design at University of Borås</p>	<p><b>Session B 1</b> <span style="float: right;"><b>9:45</b></span></p> <p>Hannah Friederike Fischer - HeadSense   Thera Trousers/Space Explorers            Researcher in Smart Clothing at German Research Center for Artificial Intelligence</p> <p>Stefanie Malmgren de Oliveira &amp; Karin Landahl - Expressions of Discarded Design Decisions #1            Post-doc Researchers and Senior Lecturers in Fashion Design at University of Borås</p> <p>Anna Lidström - Material Inventories and Garment Ontologies #1 &amp; 2            Doctoral Candidate in Fashion Design at University of Borås</p> <p>Linnéa Bågander - Fragmented            Post-doc Researcher and Senior Lecturer in Fashion Design at University of Borås</p> <p>Faseeh Saleem - Spherical Tube - From Spheres and Knitted Tube Series            Doctoral Candidate in Fashion Design at University of Borås</p> <p>Matilda Forssblad - View Master: An Analogue Method for Evaluating Artistic Work            Doctoral Candidate in Fashion Design at University of Borås</p> <p>Rahel Flechtner - PowerGrasp            Researcher in Smart Clothing at German Research Center for Artificial Intelligence</p> <p>Ulrik Martin Larsen - Covered Objects (Plant/Bouquet/Orchid)            Post-doc Researcher and Senior Lecturer in Fashion Design at University of Borås</p>	<p><b>Session C</b> <span style="float: right;"><b>20:10</b></span></p> <p>Friederike Fröbel - AI Hoody: A Smart Hoody for DIY Machine Learning            Researcher in Smart Clothing at German Research Center for Artificial Intelligence</p> <p>Erin Lewis - Thresholds            Doctoral Candidate in Interaction Design at University of Borås</p> <p>Karin Hedlund - Woven Light            Doctoral Candidate in Interaction Design at University of Borås</p> <p>Jan Tepe &amp; Faseeh Saleem - Translating Textile Movement into Digital Body Movement            Doctoral Candidates in Fashion Design at University of Borås</p> <p>Marjan Kooroshnia<sup>1</sup> &amp; Jan Tepe<sup>2</sup> - Coloured Light Explorations in Different Realities  <sup>1</sup>Associate Professor in Textile Design at University of Borås  <sup>2</sup>Doctoral Candidate in Fashion Design at University of Borås</p> <p>Giorgia Petri<sup>1</sup> &amp; Sophie Skach<sup>2</sup> - Piega Kn  <sup>1</sup>Doctoral Candidate in Wearable Computing at Berlin University of the Arts and Einstein Center Digital Future  <sup>2</sup>Researcher in Soft Robotics at Queen Mary University of London</p> <p>Pauline Vierende &amp; Erika Körner - Sound Folds: Wearable for Trumpet / Vibraphone / Cello            Researchers in Electronic Textiles and Wearable Technology at Berlin University of the Arts and Einstein Center Digital Future</p> <p>Delia Dumitrescu - Textile Digital Crafting            Professor in Textile Design at University of Borås</p>	
<p><b>Keynote Speakers / hosted by Berit Greinke</b> <span style="float: right;"><b>18:10</b></span></p> <p>Sarah Kettley            Professor in Material and Design Innovation at Edinburgh College of Art, The University of Edinburgh, Scotland, United Kingdom</p> <p>Daniëlle Bruggeman            Professor in Fashion at ArtEZ University of the Arts, the Netherlands</p>	<p><b>5 Minutes break</b></p>	<p><b>Research Presentations / hosted by Naima Gilani</b> <span style="float: right;"><b>19:15</b></span></p>	<p><b>5 Minutes break</b></p>	<p><b>Open Discussion / hosted by Naima Gilani</b> <span style="float: right;"><b>20:40</b></span></p> <p><b>End of Symposium</b> <span style="float: right;"><b>21:00</b></span></p>

# Keynote Presentation #1

In this talk, Sarah Kettley presented the Electric Corset project as an example of doing design anthropology through making. Kjaersgaard et al (2016:5) describe design anthropology as an exploration of the possible, generating speculative and co-produced knowledge. Electric Corset was concerned with the exploration of possible forms of future wearable technologies, and the shape of possible design and craft practices involved. In this way, it was a project of speculative praxis, which asked how wearables might become.

The project title was inspired by a Victorian advertisement for one of Dr. Scott's electric corsets from 1883 (Art and Picture Collection 2014), designed using 'medical and scientific principles' and powered electromagnetically to enhance the health and well-being of the wearer. It is the enthusiasm of manufacturers to integrate new technology with fashion that makes the electric corset, a wearable device from the past, such an appropriate metaphor for future design speculation.



Established by Sarah Kettley and Katherine Townsend in 2014, this creative inquiry was initiated in collaboration with the Lace, Costume and Textiles Collection, held by Nottingham City Museums and Galleries for the exhibition *Crafting Anatomies* (Bonington Gallery 2015).



The persistent imaginaries of modernism and fast fashion are in part to blame for 'wearables' lack of penetration in the 'everyday' market. Issues resulting from this include

- functionality, wash-ability and maintenance
- layering and detailing for class and identity (modularity)
- loosely defined conceptual spaces between clothing and the body
- adornment as a site for creative product development

The aim of the project was therefore to demonstrate the wealth of archival references available to designers of wearables by considering historical dress as a catalyst for future technology platforms.

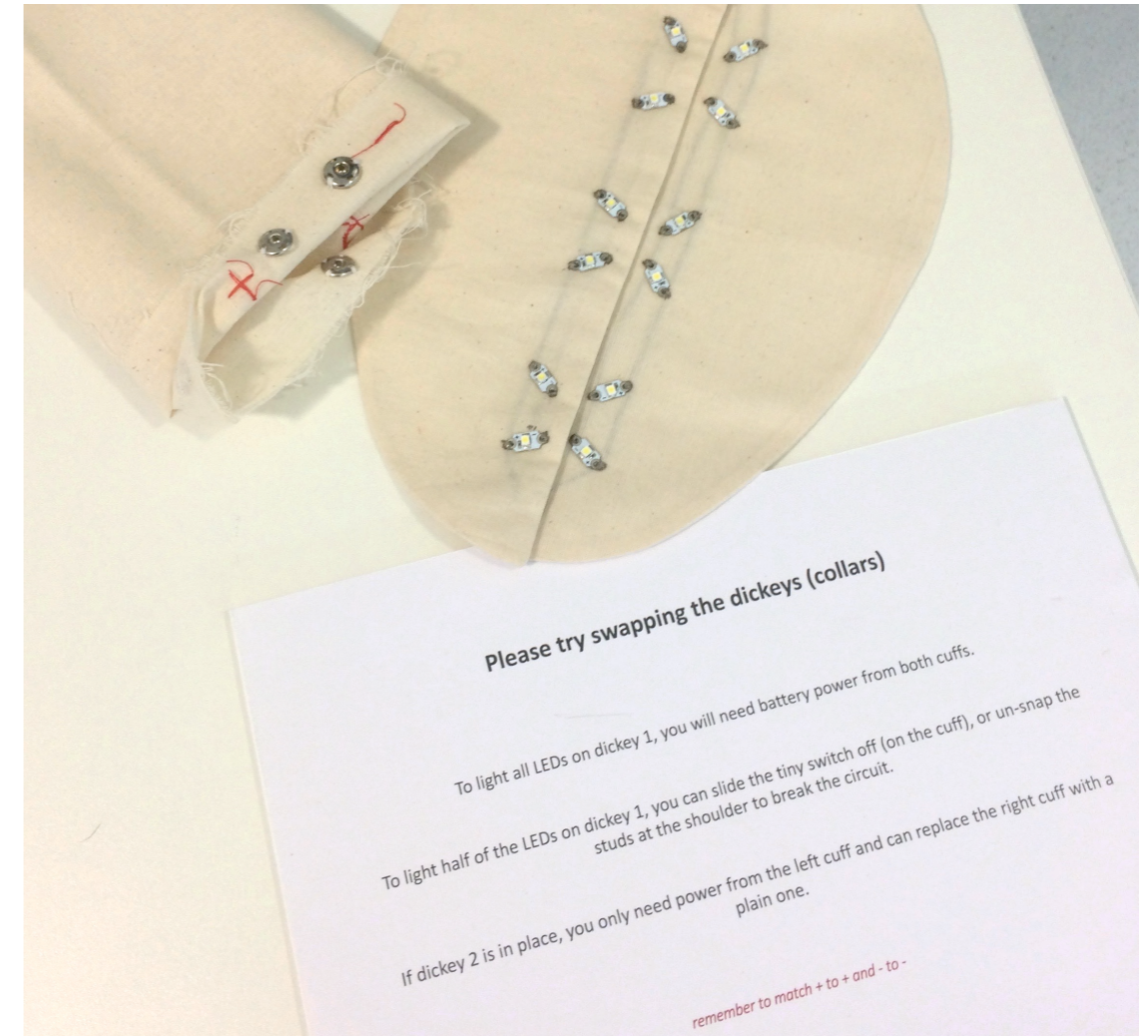


As a result, the circuit remained formally (as well as ontologically) flexible on the textile base through the application of a silver/bamboo fabric cut into strips to create visible conductive wires with an aesthetic reference to the military inspired livery garments we had seen in the LCTC at Newstead and deconstructed fashion, where the making of the garment is visually referenced.

If this is an attempt to open up our own understanding of the wearable as an assemblage of entangled fragments, then we also have the ambition to offer the wearer a space for creativity in the dynamic manipulation of their wardrobe, and its potential functionalities. In the 'Electric Corset' the opportunity for wearer interaction and intervention is facilitated by making experimental garment prototypes in the form of playful 'tools' to elicit spontaneous and embodied responses from participants. This draws directly on actor-network-theory, particularly the uncertainty and agency of objects within the social space. We therefore hope that through playful dress-acts and performative, phenomenological wearing practices, wearers are also able to engage with the relationships and ontologies of their worlds.

We do not so much aim to design one wearable concept, but hope to demonstrate the potential of a deconstructed garment system as a way of conceptualizing a platform for the development of multiple future wearable designs and products. We also envisage the relationship between garments and their individual components as a way of posing questions about the configuration of the ontology of wearables as one category of an entangled network or 'constellation' that comprises an IoT.

The bibs (or 'dickies') most successfully visualized the potential for engagement with varying levels of LED display (ostentation) and functionality, while interchangeable pockets manifested different interaction behaviours through diverse electronic switch mechanisms (for example, magnetic switches in combination with cuffs). Such two-part switches also offer the potential for circuit completion (and therefore display and functionality) between bodies and environments, not just within one garment.



The Electric Corset team:  
 Katherine Townsend, Nottingham Trent University  
 Sarah Walker, Nottingham Trent University  
 Martha Glazzard, University of Dundee  
 Karen Harrigan, independent  
 Judith Edgar, Nottingham City Museums and Galleries

Townsend, K., Kettley, S., and Walker, S. (2022). The Electric Corset and other Future Histories. In Townsend, K., Briggs-Goode, A. & Solomon, R. (Eds.). *Crafting Anatomies*. London: Bloomsbury.



# Keynote Presentation #2

In this contribution I reflect on the role of artefacts in design research from a fashion perspective. I do so by building on my recent research projects and work on ‘solidarity’, exploring how research practices and artefacts can affirm other ways of making, wearing and relating to fashion – and specifically exploring how artefacts can help to practice solidarity. In addition, based on a recent article<sup>1</sup> on alternative, critical fashion practices that create more agency for makers, wearers and matter, I will share some thoughts on the potential role of artefacts in relation to creating agency – both material agency and (post)human agency.

## Drafting Solidarity | Solidary Drafts<sup>2</sup>

In our recent research projects ‘Solidarity in Fashion’ and ‘Practicing Solidarity’, we started from the claim and observation that the current fashion industry operates in a non-solidary way. The current fashion industry is based on strategies of disconnection, dehumanization, exploitation, alienation and non-transparency. The Covid-19 pandemic shed light on the limitations and untenability of the industry’s operations, but has also – once again – shown the urgency of practicing more care, for human beings, other living beings and for materials and matter. It has shown the need for more solidary practices of making, wearing and relating to fashion.

In current sustainability debates, solidarity is often used in terms of being solidary with the next generations (which presupposes a distance in time) or in terms of being solidary with garment workers (which presupposes a geographical distance). We can observe the need to practice more solidarity with and for human beings in precarious positions (socio-political fairness) and other living beings, like animals. In addition, there is an urgency to practice more solidarity with nature (clean soil, clean water, clean energy) and with nature’s matter – which is also the material dimension of fashion and clothing. In these research projects we started from the work of philosopher Iris Murdoch to think through what solidarity possibly means and entails. We have argued that solidarity presupposes (enacting) an ethical attitude. According to Iris Murdoch, an ethical attitude entails offering your undevoted attention to someone/ something else that did not receive enough attention, and can only be expressed by going through a process of ‘unselfing’:

unselfing is a transformative process characterised by a growing attunement to the surrounding world, and the interconnectedness of goal and process is emphasized. [...] the idea of unselfing stresses the need for a decreased egocentricity and for a greater sensitivity towards other beings and objects in the world.<sup>3</sup>

<sup>1</sup> Bruggeman, Daniëlle (2022) ‘Agency that matters: Participatory practices of making-with’, *International Journal of Fashion Studies*, 9 (1): 151-172.

<sup>2</sup> The insights on solidarity discussed in this paragraph were developed collectively with the research groups of the projects ‘Solidarity in Fashion’ (2021-2022, funded by SIA KIEM) and ‘Practicing Solidarity’ (2021-2022, funded by the Bank Giro Loterij Fonds / DOEN Foundation). These research projects were initiated by the Fashion Professorship at ArtEZ University of the Arts, The Netherlands. The theoretical insights were developed collectively with Aurélie Van de Peer, Freya Zaplata, Sanne Karsenberg and Femke de Vries.

<sup>3</sup> Olsson, Anna-Lova (2018) ‘A Moment of Letting Go: Iris Murdoch and the Morally Transformative Process of Unselfing’, *Journal of Philosophy of Education*, 52 (1): 163/165. Also see: Aurélie Van de Peer (2022) ‘From Is to Ought: What Fashion Gains When it Looses its Cool’. *Press & Fold: Notes on Making and Doing Fashion*, no. 2: 191-205.

While the current fashion industry (with its logic of speed, acceleration and focus on constructing the individual) leaves no time to connect nor to experience or acknowledge this interconnectedness, this understanding of ‘unselfing’ could be a precondition for developing an ethical attitude, which mirrors the need for qualitative change in how we relate to fashion. I would argue that the process of drafting artefacts through design research can help to practice this way of developing an ethical attitude as well as a greater sensitivity towards other human beings, living beings and towards materials and matter – thus offering more attention to what or whom did not receive enough attention.

The artists, designers and critical fashion practitioners who participated in these research projects explored these issues in their practice-based research. For example, Anouk Beckers and María Naidich explored – through fashion design research – how to practice solidarity with the local Tojolabal community in south-eastern Mexico and with women’s resistance to centuries of control over their clothing since colonial times. Another example is the collective Painted Series who explored how to practice solidarity through ‘opening’ garments by facilitating participatory design practices – exploring the exchange of loved garments, de-commodifying the garment, and offering more attention to practices of repair and processes of making collectively. Thirdly, the work of Femke de Vries is an interesting example as she has been exploring how to practice solidarity with animals and other non-human living beings that are present in garments.



Images from left to right: Anouk Beckers & María Naidich, ‘Booklook magazine’ (2022); Painted Series, ‘Opening Clothes’ (2022); Femke de Vries, ‘Which Animal is Present in your Garment?’ (2022), photo by Alice Alloggio.

In these research projects we have been using artistic research and design research to explore and practice – in the multiple sense of the word – how to offer more attention to, for example, matter, processes of making, unheard voices, nature, wearers, the body, or any thing or any one that/who needs more attention.

This leads to further questions, such as: how can drafting artefacts help to practice solidarity with...? How can we draft solidarity? And how can we draft in a solidary way? How can we create tangible expressions that help to re-imagine solidary ways of making and wearing clothes? How can artefacts help to create the conditions to practice solidarity, and to develop the tools to become a solidary wearer? Which expressions of solidarity can artefacts activate?

#### Agency that Matters<sup>4</sup>

When it comes to the role artefacts can play in activating alternative, more solidary ways of making, wearing and relating to fashion, it is also important to take into account how artefacts can have (material) agency or contribute to more (post)human agency. Since a critical fashion discourse has been developing over the last couple of decades, artefacts in design research have simultaneously operated as a critique (to interrogate the logic of the dominant industrial fashion system) and as a way of affirming alternatives (to help re-imagine non-industrial fashion systems). More and more critical fashion practitioners have used artistic and design-driven research to explore how fashion can become a more social, participatory and community-based practice with more agency for makers and wearers<sup>5</sup>. In doing so, these critical fashion practitioners and researchers also aim to re-engage with fashion's matter, materials and materiality.

This brings me to the theoretical discourse of 'new materialism', which gives special attention to matter and allows for the study of matter and meaning in their entanglement.<sup>6</sup> New materialist thinking approaches people and things not as separate entities, but rather thinks in terms of how people and things constitute each other in a process of becoming.<sup>7</sup> This opens up an understanding of things, nature, and matter as having agency: 'new materialists make a radical shift from [human intentionality] by attributing agency to non-human actors, like things, artefacts, technologies, animals and nature in general'.<sup>8</sup> In this sense, we can thus understand matter as well as artefacts not as passive and inert stuff, but as active actor in the world. This helps to reconsider how people engage with the material things of this world and the 'apparent capacity of things to act back' as well as the 'so-called "hybrid agencies" that are formed between persons and things'.<sup>9</sup> In *Staying with the Trouble* (2016) Donna Haraway reflects on the damaged earth and offers new ways to rethink our relations to the earth and all of its inhabitants. She proposes to think in terms of 'becoming-with', 'making-with', 'living-with' and even 'dying-with'. For Haraway, this 'becoming-with each other' always includes 'nonhumans', or what she refers to as 'companion species' like dogs or monkeys, but also bacteria, fungi, spiders, synthetic hormones or polymer fibres.<sup>12</sup>

<sup>4</sup> This paragraph is based on my recent article: Bruggeman, Daniëlle (2022) 'Agency that matters: Participatory practices of making-with', *International Journal of Fashion Studies*, 9 (1): 151-172.

<sup>5</sup> Warehouse (2021), 'Fashion against capitalism', *State of Fashion*, 21 January, <https://bit.ly/3M9kyST>. Accessed August 18, 2022.

<sup>6</sup> Dolphijn, Rick and Van der Tuin, Iris (2012) *New Materialism: Interviews and Cartographies*, Ann Arbor, MI: Open Humanities Press: 91.

<sup>7</sup> Smelik, Anneke (2018) 'New materialism: A theoretical framework for fashion in the age of technological innovation', *International Journal of Fashion Studies*, (5) 1: 39.

<sup>8</sup> Ibid: 45.

Today, there are more and more examples of artists and designers who research the act of practicing how to develop the response-ability (following Haraway) to take better care of actual things and matter that we live and die with. For example, the Feminist Needlework Party explores participatory approaches of repairing clothes by educating wearers about different repairing techniques – while practicing and trying to affirm and embody a more responsible and caring ability to treat clothes.



Images: Feminist Needlework Party (2021), video stills of different mending techniques

In doing so, they also want to highlight the body's agency and agentic capacities to do handwork, to care, to repair, and as part of our material and physical existence. This is a way of acknowledging the embodied dimension and agential matter of living bodies of makers and wearers who engage in an intimate, material relationship with the actual matter and materiality of clothes and textiles.

This again leads questions such as: how can artefacts help to practice this responsibility? How can the process of drafting artefacts help to create more agency for other inhabitants of the earth, for nature, for matter? And how can artefacts, perhaps, become micro-political ways of affirming and activating alternative ways of re-engaging with each other and with nature, moving beyond the logic of consumerism? How to rethink and redesign our relationship with the earth and all its (material) inhabitants, acknowledging and working-with the agency of nature's matter? How to design-with the agency of nature? What are the agentic qualities of the artefacts that you work-with and what do you want these artefacts to do? How do artefacts act back? How do artefacts become-with the maker, wearer, user or with the body?

<sup>9</sup> Ingold, Tim (2015), *The Life of Lines*, London: Routledge: 69.

<sup>10</sup> Haraway, Donna (2016), *Staying With the Trouble: Making Kin in the Chthulucene*, Durham, NC: Duke University Press: 2-5.

<sup>11</sup> Ibid. 2016: 60; Smelik, 2018: 39.

<sup>12</sup> These videos can be found on the Feminist Needlework Party's website: <https://feministischehandwerkpartij.org/mending-techniques/>

# DRAFTS – Student Exhibition

# 4

## Student Exhibition

More than 20 projects were shown during a public pop-up DRAFTS Student Exhibit on 13 May 2022, which brought together BA and MA students from five different universities and colleges. Sharing projects in varying stages of work-in-progress, the exhibit included textiles, costume and wearable prototypes.

The event was intended as an opportunity to reflect on interdisciplinary processes in making and learning. Exhibitors and visitors were invited to network and leave feedback in the *pop-up Observatory for Interdisciplinary Learning*.

With students and recent graduates from the Swedish School of Textiles – University of Borås, Universität der Künste Berlin, Weißensee Kunsthochschule Berlin, Hochschule für Technik und Wirtschaft Berlin, Hochschule für Schauspielkunst Ernst Busch, and Technische Universität Berlin.







# METAPOLIS TRANSIT - Music from In-Between

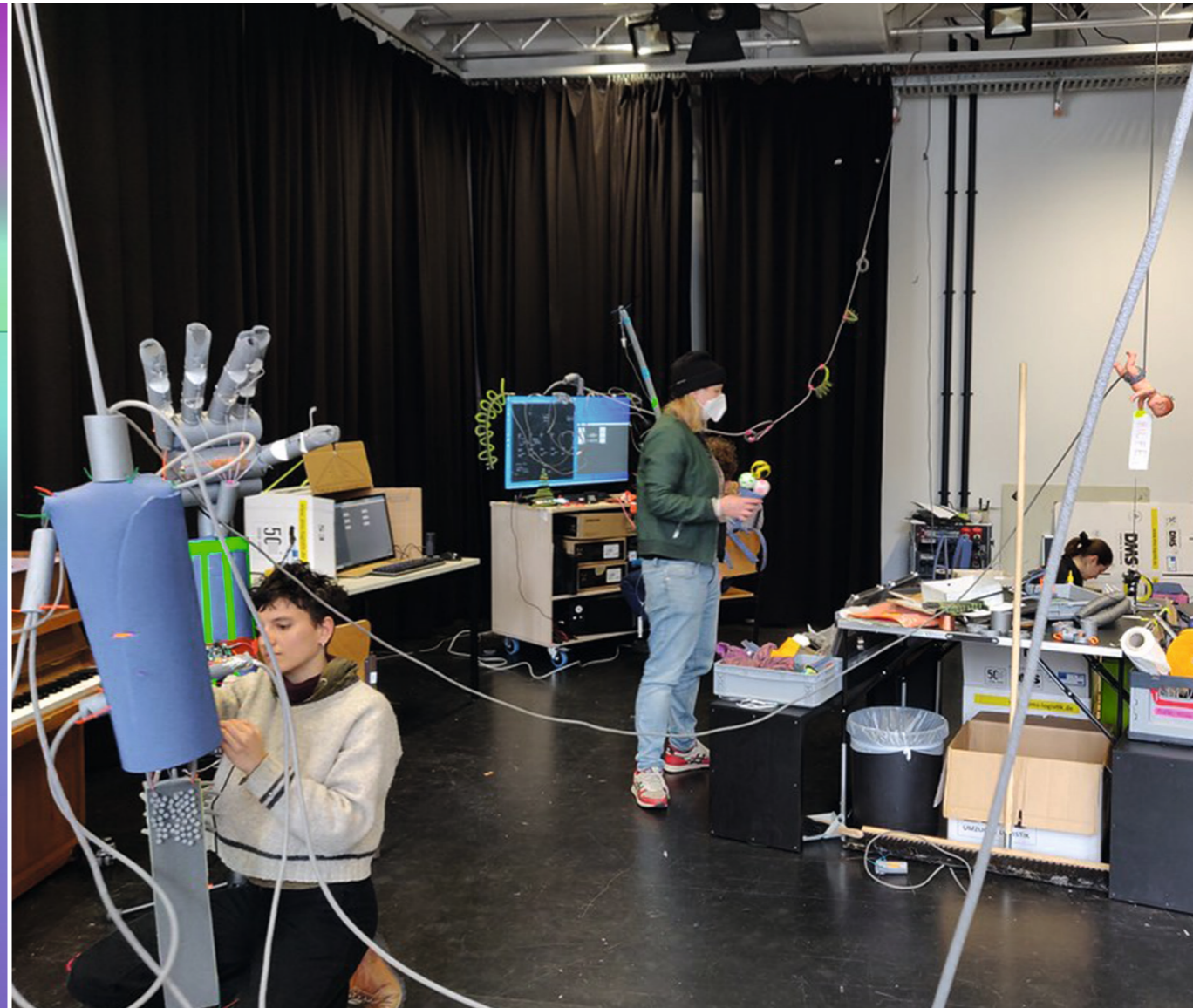
The Metapolis Transit project can be seen as an interactive music experience that combines chamber music (Kammermusik) with tangible game-related landscapes. The result is an experimental merging of digital and analogue worlds that visitors can explore autonomously in playful manner.

Konzept, Regie, Entwicklung und Videoproduktionen: Ella Estrella Tischa Raetzer  
Regieassistent, Entwicklung und Videoproduktionen: Ludwig Rensch  
Visuelles Konzept, Digital Stagedesign und Entwicklung: Christina Mäckelburg  
Bühnenbild Assistent: Anneke Frank  
Musiker\*innen: Franziska Hiller, Nasti Sokolova, Johannes Worms, Hannah Baumann



# Sensitive Puppets

The students playfully explored how sensory perception, electronics, and puppet making can come together in space, time and materiality. Sensors were integrated into textile and material-based puppets to trace their movements, which allowed for activating sound, light, and movement-based effects. The constructed puppets gave rise to the question of what these sensitive and sensory capable puppets want to tell with their new abilities.



# Communicating Bodies

This five day workshop brought together textile, costume and product design students from Weissensee University, and students from the MA program S&O of the Performing Arts University Berlin. Together we dressed up and played with textile sensors and recorded sounds, asking ourselves the question: with a new medium such as wearable technology, what new ways of communicating may emerge?



Mika Satomi  
Hannah Perner-Wilson

Weißensee Kunsthochschule Berlin  
Hochschule für Schauspielkunst Ernst Busch

Textile Design  
Spiel und Objekt

# Sound Shell

We live in a constant exchange of information. This exchange takes place not only via technical aids, books or news services, but already begins with the communication with each other. Not only language plays an important role. Much more decisive is our body language, which can be both covered and amplified by our clothing (so called the second skin).

The project is about the idea of shaping the second skin of the human being into a soft, voluminous shell and investigating possible ways of moving in the space and interactions between people. How can movements take place when one is isolated and shielded from the outside world, but can also generate protection from the new surface? In addition, by integrating soft interactive textile sensors in the handwoven fabrics (which respond to pressure), a synthetic sound is created that allows the person to communicate in a new and digital way.



Saskia Buch

Weißensee Kunsthochschule Berlin

BA Textile and Surface Design



# HAAR\_RE\_KONSTRUKTION / Growing Antennas

This project was about creating a sensor to detect the movement of water and wind. Therefore I made experiments with different materials to see how they move in wind or water and how they could be used in digital or analogue sensors with the help of e-textiles. The most sensitive sensor for air movement is a digital sensor that has a scale like shape cut from light weight fabric. I created a suit that is completely covered with scale sensors so they can work as an additional sense to the human body and can be experienced when it is worn. The triggered sensors send a signal to the laptop which translates the data into sound.



# Perceiving the Imperceivable

The project began with a topic that is as exciting as it is incredibly wide: human perception. It forms our access to the world, to everything external. Access through the senses enables us to get an impression of what exists outside of ourselves. This perception seems to be universal to us. And sometimes we find it difficult to understand that it is only a part of what actually surrounds us.

The goal of the project is to make it possible to experience a different approach, a different way of dealing with our environment. How would we live if we could actually perceive the whole spectrum of reality that surrounds us?



# COSMIC HORROR

Cosmic horror is a sub-genre of horror fiction and weird fiction that emphasizes the horror of the unknowable and incomprehensible. Using symbols known from H.P. Lovecraft or the biomechanic art-style the goal of the project is to create textures and garments that seem unfathomable, that move strangely, that seem to work like a machine or be alive. The data for creating this movement are being sensed from minuscule muscle movement on the forehead occurring while thinking. These then get fed into a synthesizer to create a dooming soundscape, as well as feeding the sounds into a fractal programme creating a video of an endless projection of space.



# PLIÈ

Folding is nature's most common way of making patterns. It can occur in all matters and materials. Folds are a direct result of movement which in return means that movement can be detected by 'reading' folds.

Origami techniques are used to pleat fabric to create three-dimensional wearable sculptures. Textile sensors, which respond to the fold's movement by reading a change in resistance are added to trigger selected sounds. This allows the wearer to experience their own body in an unusual way.

Does the wearer control the sound? Does the sound influence the wearer's motions? A combination of both?

The origami pleated sensor – in combination with selected sounds and the body's movement – creates very individual multi-sensory explorations of nonverbal, embodied communication.



## Unheimliche Mini-Motoren

The project shows the search of cheap and accessible motors for their use in the context of theatre. The result is a group of tiny robots, that can be activated with a piece of fresh meat. This performative gesture invites us to reflect about our own projections in opposite concepts: organic and artificial, cooked and raw, us and the others. Come to see a broken cat feeder, a misused dynamo-lamp and the rest of a CD-Player trying to perform organic dance-moves. It's sensitive scrap, so be nice please.

Foto: Kitti Zisga



## Spatial Composition

Exploring clothes in spatial compositions through deconstruction, to generate garment installations that challenge the perception and relationship of body, fashion and architecture.



## Balls From Knit

This project derives from exploring ways to elevate the textile's role within the interior context. The generation of form and support was led by the interaction between knit, filling, and human throughout the whole process. Resulting in a series of textile objects, this project explores the relationship between balls as a filling material and knit to design transformable objects that offer an alternative perspective on what anatomical support can be, based on bold interaction. The transformation within the objects is designed to be visible in form, colour, and surface to enhance the change. These objects should inspire the user to leave behind the predefined ideas of how furniture is used and experience it from a new perspective through playful body positions.



## Woven Forms

How can form be generated from a flat woven surface?  
Woven Forms pushes the craft of weaving into the third dimension. It shows the development of fully-woven sculptural textile-forms created on a Jacquard loom. These abstract objects were achieved by embedding form-giving mechanisms, such as using multi-layering techniques and adding heat-reactive shrinking yarn. Sewing was not needed to create these woven objects. Different expressions were developed focusing on colour and texture influencing the form outcomes. This work demonstrates an approach to creating form deriving entirely through weaving.



# WHO CHAIRS? (Don't worry I'll bring a ramp)

An exploration in how reforming garments for a seated body in active wheelchair use could express issues of ableism.



# Dating Garments

When speed and quality are considered more important than thorough thinking and reflected consumption, the fashion world stumbles over its hurdles at full speed while acting unacceptably unsustainable regarding human and material resources.

Throw-away culture and the re-establishment of emotional relationships with material objects need to be discussed within design.

This work is located at the border between fashion, performance, and critical design for speculative future scenarios.

Focusing on the interaction between humans and garments, 'Dating Garments' explores the hypothesis that humans potentially create a certain sense of value by spending time with a product in a series of experiments.



## Fabricated Symbiosis – A Collaboration Between Knit and Lichen

Lichens are everywhere around us but generally unseen by many people. Lichens are packed and fragile in their dry state. When they come into contact with water they soak up the water like a sponge, expand, and become flexible. The lichens adjust and react to the circumstances of its surrounding: humid or dry. The knit enhances the lichens' properties in its stretchable, textural, and colour possibilities. While activating the textiles through moisture, there is a change in haptic- and visual expression. This means that humidity can be indicated by the state of the textiles.



## Woven Change, Shifting Expressions

Woven hanging textiles, which upon activation by pulling, change expression. They can change in transparency, going from semi-transparent to opaque, and pattern, for example by changing from a circle to a wave pattern.



## Folded Optical Sensor

Prototype for a stretch sensor. By obscuring optical fibers within the folds of the pleated fabric they are embroidered on, the amount of ambient light captured is dependent on the stretch of the fabric. The further the folds are opened, the more light will be guided along the fibers to a photo-resistor from where it can be measured. If additional light guides are adhered to unobscured parts of the fabric, the sensor will be somewhat independent of the surrounding light intensity.

Further work will include experimentation with different light guide and fabric materials, as well as up-scaling of the sensor and testing in different environments.



## Medical Agency & Healing Body Assets

Our medical system is based on authority and history of institutionalized knowledge. Procedures, that we ourselves cannot fully understand or control, are being done to our body, data is being captured and analysed and potions are being injected into our organisms. This creates a bio-political power relation between doctor and patient.

In our project we tried to approach this medical authority question and create an individual therapeutic tool, that should allow the patient to heal own body through a somatic sound experience. With the help of repetitive movements and sounds, the patient enters another mode of body /mind reciprocity and regains agency over personal healing process.



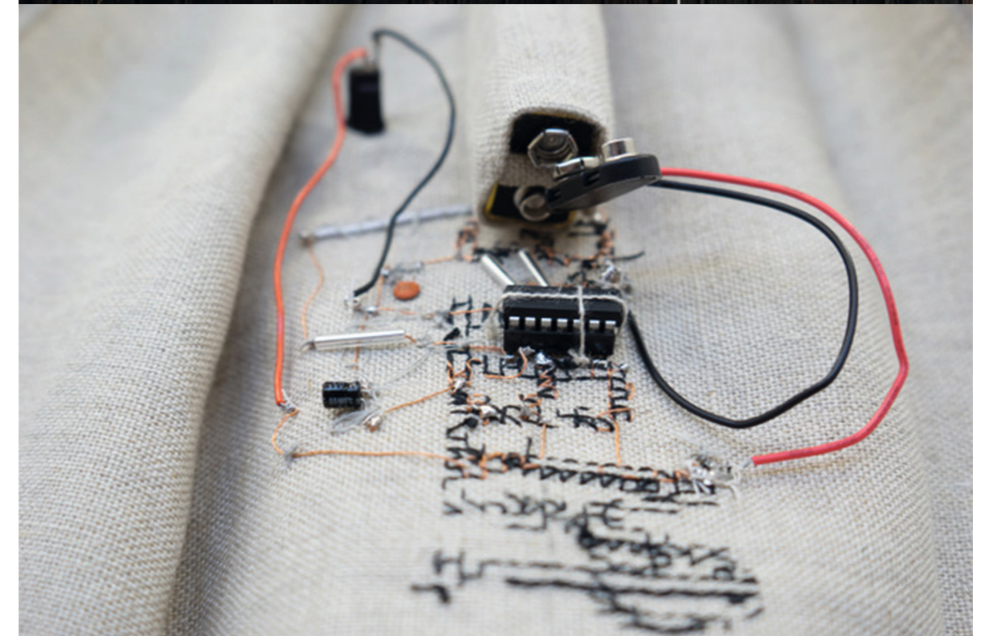
## Some Things Newly Rendered

Sometimes when you search for something, you find a totally other thing you didn't expect and you realize all the time you were actually looking for that thing and you didn't know it. Lately I've been 3D modelling. Training my brain to understand that some pixels on a screen are actually something that exists. So to convince myself I pulled them out of the screen. Finding the bridge they call it, or something of that nature. In a couple of years it won't take any convincing any more. You'll be part flesh, part garbage, part digital render, turn up the metallic and add a bump. So this project is really about human material uncertainty, about the impossibility of parsing matter into data and vice versa. That gap between what you think you know and what you get. About some things newly rendered.



## ELON DU ARSCHLOCH, BRING UNS ZUM MARS

'Elon du Arschloch, bring uns zum Mars' is inspired by old fashion German home-decor 'Spruchbände'. While bringing the traditional crafts of stitching and the technologies of sound sampling together, this piece speaks in languages post and during climate crisis. The emotions towards the worlds condition are divided in anger at one side and fear on the other.





# Landing on Body

Our project is about a speculative future body. We were thinking about how to connect the body, technology and different materials for a storytelling costume/performance. Together with an artificial intelligence we collaboratively wrote a story, that is talking about bodies in the future. We use five sensors to build five organs on this body. The person who is wearing the costume interacts with those sensors and can use them to tell the story of this future body.



# Impressum

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invited more than 80 designers, design researchers, and design students to discuss the role of artefacts in research and design activities within disciplines such as fashion, textile, and interaction design through the means of two exhibitions and one symposium.

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