FROM PAST TO FUTURE DESIGN DECISIONS: EXPLORING THE GARMENT AS INSTIGATOR OF CHANGE

Authors

Stefanie Malmgren de Oliveira, University of Borås, Sweden

Karin Landahl, University of Borås, Sweden

Corresponding Author: stefanie.malmgren_de_oliveira@hb.se

Keywords

Fashion Design, Garment-Based Learning, Post-Consumer Waste, Design Decisions, Artefact

Abstract

The research project presented in this article investigated the role of the garment as an instigator of change through a series of practice-based experiments. Twenty-five knit garments, which had been discarded due to their being unsellable post-consumer waste materials, were collected and used to explore the potential of past design decisions. The group of garments was considered to be a single design material to work with and reflect upon. A data analysis was conducted on the material with regard to fibre composition, colour, production country, structure, and shapes, before a series of experiments was conducted. Rather than being used to create a permanent artefact or a fixed form, the garments remained loose, plastic pieces throughout the research process, in order to be redefined through new actions to lead to the generation of new artefacts. Each experiment in the series ‘Expressions of discarded design decisions’ was documented and numbered, before the next was generated. Past design decisions that have been defined in the garments, present a set of design variables and properties that are then fundamental ground for defining future design decisions. The programmatic examples raise questions, generate knowledge, and stimulate new thoughts in relation to the changing role of the designer and the process of searching for and adapting to new areas. The reflective framework suggested in this article posits the garment as an instigator of change, and has the potential to catalyse new ideas and methods for design practice and pedagogy.

The result is a shift in perspective; from the notion ‘discarded garments’ to the notion ‘discarded design decisions’, which points to the responsibility of the designer and opens up for new possibilities of how to rethink habitual modes and procedures/for new visions, ideas, theories and practices.

Introduction

When reflecting on how the role of the designer will change in the transition to more sustainable futures, it is unavoidable to reflect on the change of the artefact. The artefact in design research visualises and communicates explorations and developments of design theory and practice, whilst holding a generative role. It evokes questions, visualises reasoning, and informs the development of the thought process. The artefact is an outcome which results from doing something after a process of searching and finding (Hallnäs, 2017). In the context of changes in and challenges to the environment, the need to adapt design processes with these in mind is inevitable.

The artefact holds a pivotal role in artistic research and design practice, and while it has been discussed in great detail in relation to its status as a receptacle of knowledge and being a result in design research, there is space for further reflection and investigation when it comes to looking on the artefact as a tool for thinking and seeing. Nimkulrat discusses two important roles for the artefact in practice-led research: “input in knowledge production” and “output for knowledge communication” (Nimkulrat, 2013). While the artefact as input could trigger new ways of seeing, initiate ideation, stimulate ideas for further explorations, raise new questions, and open up unknown pathways of thought, the artefact as output suggests viewing the artefact as a manifestation of knowledge that has been made visible through a practice-led process that aims to exemplify a theory (ibid.). Nimkulrat’s thoughts reflected in this project translates the artifact into the garment, meaning to look upon the garment as input, and to look upon the garment as output in the design process.

Acts of creation that use physical materials to reveal context, content, form, and time have been discussed in relation to the concept of ‘materialness’ (Nimkulrat, 2009), which asserts that the gradual transformation from material into artefact through physical acts is of importance for the meaning that the artefact carries and the knowledge it brings to the field. Wensveen and Matthews (2015) discuss the prototype, which can function as a means to test a hypothesis, as a created situation in order to draw out data, questions, and reflections, and as a way of suggesting the potential of conceptual arguments, showcasing new perspectives.

The artefact in design can also be the outcome of design practice—that which is the conclusion or result of a design process, and which has taken on a tangible meaning in and of itself and so is no longer connected to acts or thoughts of designing, for example, a garment. In an everyday context we thus look upon artefacts not as artefacts, but merely as ‘stuff’ that surrounds us. Although all this ‘stuff’ can be argued to have its origin in design processes and the role that the artefact has in design research, this is not always thought about in relation to daily activities. This relates to an ongoing discussion that highlights the increase in the amount of goods consumed globally and the need for large-scale, systemic change of habits in terms of the consumption of goods:

> Products keep changing and so pile up around us [….] before they wear out precisely because designers note some imperfection, some interaction point, some other way

> of accessing efficiency or productivity, or convenience or comfort, or just passing sensorial pleasure. (Tonkinwise, 2019, p. 86).

Prominent scholars have researched the role of the designer with regard to more sustainable futures, and suggested new ways in which designers can rethink their practices in order to bring about this change: identifying de-growth (Rissanen, 2021), positing sustainable practices instead of sustainable products (Fletcher & Tham, 2019), arguing for a heightened awareness of and engagement with equality and social justice (von Busch, 2022). The emerging and pressing need to rethink habitual modes of design is profoundly elaborated on in the field of transition design; 'The Transition Design Framework' is a foundation for teaching the concept of 'transition' to design students, educators, and practitioners, and is an open framework to support new methodologies within the transition to more sustainable futures. The framework maps the following four interdependent areas of knowledge, action, and self-reflection; 'Vision for Transition', 'Theories of Change', 'Posture & Mindset', and 'New Ways of Designing' (Kossoff et al., 2020).

The multi-platform event DRAFTS (Design Research Artefacts) recently contributed to the discourse regarding the artefact. Researchers and practitioners reflected on the role and potential of the artefact through design practice via exhibition platforms and symposia. Three exhibitions and events have been conducted so far and the events showcased the variety of roles that the artefact can take in design research, and facilitated open discussion around the artefact and how it can be understood and used in the context of artistic practice.

In the context of changes in and challenges to the environment, the need to adapt design processes with these in mind is inevitable. The research project presented in this article investigated the role of the artefact as an instigator of such motions of change and adaptation through a series of experiments. It also built on Hallnäs' process of searching and finding, which identifies the possibility of the design example in exploratory experimental design research as a basic result that "…gives a *concrete direct expression of design possibilities*" (Hallnäs, 2017, p. 16; italics in original). The research project was situated in the field of design, and focused on the development of fashion design practices and pedagogy.

In garment-based learning (Landahl & Malmgren de Oliveira, 2022) garments are considered to be sources of knowledge with the potential to be used as methodological tools to learn from and through. Discarded garments can be used in pedagogical settings to draw out technical and artistic data, which is useful in order to understand skills and trigger ideation. The process to discover and derive technological principles is systematically performed within reverse engineering practices. Reverse engineering is a common procedure/process/practice that is widely used in the fashion industry and education. While the procedure in its original sense does not involve change or replication of the system/item in focus, but aims to create representations of it through analysis and identification of the components and their interrelationships (Chikofsky, and Cross, 1990), the interpretation of the practice in a fashion context varies from mere replication of a selected item/garment, to an elaborate deduction and development of fundamental principles (O'Neill, 2021). Looking upon reverse engineering as an act of (analysis and) examination (Chikofsky, and Cross, 1990) opens up for possibilities

within garment-based learning. As learning objects, discarded garments hold knowledge about thought processes behind the genesis of the garment and contain a wide range of information, or left out information, about global issues such as production, labour conditions, fibre choices and so on. This associative lore suggests a potential for generative thought practices for change, and for better practices and outcomes in the future. 'A resourcification manifesto' (Hultman et al., 2021) posits that goods that are unwanted in one situation can be important and useful in another, and considers this to be a social process rather than a technical matter. This aligns with the idea of discarded garments having a thought-generative role used in the research presented in this article.

Method

The method used for the explorations was practice-based experimentation. A data analysis of the design material was conducted, and four experiments were carried out by the two researchers. The aim of these was to explore the roles and possibilities of the artefact using post-consumer garments as design materials. For this purpose, 25 knitted sweaters, donated to the project by the sorting facility of a local non-profit organisation, were used; no additional selection process took place, and the jumpers were considered to be a single design material to be worked with and reflected on. The overarching approach across all of the experiments related to the framework posited by Ingold (2009): "Rather than reading creativity 'backwards', from a finished object to an initial intention in the mind of an agent, this entails reading it forwards, in an ongoing generative movement that is at once itinerant, improvisatory and rhythmic."

A data analysis of the jumpers was conducted to identify and document the fibre composition, origin, stitch structure, weight, size, and colour of each garment. This data was then summarised, and the jumpers were used as design material for a series of experiments: 'Expressions of Discarded Design Decisions 1–4.' The experiments were set up according to key actions, which were intended to give direction to the making process: layering, wearing, building, and compressing. Each experiment in the series involved repeatedly performing a sequence of 25 to 50 actions, which were documented photographically. It was important to record the making of the artefacts in relation to the actions that were performed, as well as to explore the possibilities of form and material arrangements and combinations. The sequence of actions to be used was undertaken, photographically documented, and then discussed. Smartphone cameras were used in the initially phases to test the setup of the experiments; later, a Sony ILCE-7RM3 camera was used to document the explorations. The camera, as a tool for speculation and examination (Bigolin et al., 2021), was crucial in the process of making, and was later used as a foundation for reflection and reasoning.

The intention was to use the design material in its original, unmanipulated state. In 'Expressions of Discarded Design Decisions 1– 4', the garments were used in a 'loose' way, rather than creating permanent artefacts or fixed forms. The pieces remained plastic throughout the research process, in order to be redefined through new actions that led to the generation of new artefacts.

All of the actions that led to the creation of an artefact, were systematically performed and documented. The design material was continually redefined throughout the research process and each new action generated an alteration to the artefact.

Experiments

A data analysis of the design material was undertaken before the four experiments were conducted. Each jumper was numbered and analysed in terms of fibre composition, production country, stitch structure, weight, size, and colour. A partial summary of this data is presented below (Table 1).

Analysis of the design material: 25 jumpers

Garment	Fibre composition	Production country	Stitch structure	Weight	Size	Colour
1	68% acrylic 17% polyamide 12% polyester 3% elastane	China	Plain knit	533 g	4XL	Grey
2	75% acrylic 22% polyester 3% elastane	Bangladesh	Plain knit	379 g	XS	Orange
3	78% acrylic 20% polyester 2% elastane	Turkey	Rib structure	354 g	S	Beige
4	70% acrylic 30% wool	Italy	Half cardigan	618 g	38	Black
5	50% acrylic 50% wool	Unknown	Cable knit	687 g	M	White
6	75% acrylic 22% polyester 3% spandex	China	Plain knit	267 g	S	Pink
7	85% acrylic 15% polyamide	Bangladesh	Rib structure Transfer Pointelle	481 g	XS	Beige
8	100% acrylic	Turkey	Half cardigan	414 g	XS	Black
9	81% acrylic 10% wool 6% polyester 3% metallised fibres	Cambodia	Rib knit	246 g	S	Silver gray
10	70% acrylic 30% wool	Bangladesh	Cable knit	570 g	L	Beige

Table 1. A partial summary of the data analysis of the design material (10/25 jumpers).

Summary of the design material (25 jumpers)

Fibre composition:

Acrylic:	45%
Wool:	19.52%
Cashmere:	8.4%
Cotton:	7.4%
Polyester:	7.32%
Polyamide:	4.84%
Nylon:	3.48%
Mohair:	1.4%
Silk:	0.8%
Viscose:	0.68%
Spandex:	0.52%
Elastane:	0.32%
Alpaca wool:	0.2%
Metallised fibre:	0.12%

Production country:

China:	32%
Bangladesh:	28%
Unknown:	16%
Turkey:	12%
Croatia:	4%
Cambodia:	4%
Italy:	4%

Weight: 9116 grammes

Practical Explorations: Expressions of Discarded Design Decisions 1–4

The four experiments aimed to explore possibilities of the design material, that is the 25 jumpers. Each jumpers represents a set of past design decisions, decisions, that have been taken when designing the item. The past design decisions are in this research/here understood and worked as a source and potential for understanding and perform future design decisions. The experiments all had the same setup, aiming to explore the 25 jumpers as one design material to be worked with and reflected on. A key action that would give direction to the exploration was decided for each experiment, and these were documented photographically.

The intention was to use all 25 discarded sweaters in each experiment. The number of actions to be performed per experiment could vary, dependent on whether the actions were looped as well as various design possibilities. In ‘Discarded Design Decisions 1–3’ the actions looped, from making the artefact to unmaking the artefact. In ‘Expressions of Discarded Design Decisions 4’, the making process ended with the resulting artefact, and so there was no loop.

Expressions of Discarded Design Decisions 1: Layering

Figure 1. Expressions of Discarded Design Decisions 1 – Layering.

Expressions of Discarded Design Decisions 1: Layering consisted of 50 actions. The 25 jumpers were gradually layered on top of one another: one jumper was laid out flat, with the front side facing upwards, and the next jumper was placed on top in the same manner, and so on until all 25 were piled up. No adjustments were made to previous layers. After the final jumper had been placed each was removed one by one, until none remained. Fifty actions of layering were performed: 25 of adding layers and 25 of removing layers. Through these actions 25 jumpers were in constant interaction, being piled up on top of one another to create layers of knit. Each action was photographed and the photographs were edited together to create a stop-motion film. The sequence of 25 adding actions and 25 removing actions has a run-time of 1 minute and 38 seconds, and was edited into an infinite loop, exhibited at Berlin Design Week 2022.

Expressions of Discarded Design Decisions 2: Wearing

Figure 2. Expressions of Discarded Design Decisions 2 – Wearing.

Expressions of Discarded Design Decisions 2: Wearing consisted of 40 actions. Although the experiment set out to use all 25 jumpers as a design material and conduct 50 actions, this was not possible due to safety concerns relating to the wellbeing of the model. Instead, 20 jumpers were used. The model was dressed in these in their intended position (front facing forward, arms in the sleeves, head through the neckline, hemline pulled down) one after another. In this experiment, adjustments were made to previous layers. The 20 jumpers were placed on the model with the help of another person when this was necessary. After the 20 jumpers had all been placed on the model, they were taken off one by one. Twenty actions of dressing and 20 of undressing were performed. In the actions of dressing and undressing, material differences and similarities interacted with and transformed the body and its posture and movement.

Expressions of Discarded Design Decisions 3: Knotting

Figure 3. Expressions of Discarded Design Decisions 3 – Knotting.

Expressions of Discarded Design Decisions 3: Knotting consisted of 50 actions. The 25 jumpers were knotted together one after another, until all of the jumpers were knotted together to form one large knot. They were then unknotted one after another. The order in which the jumpers were added was intuitive; the researchers took turns selecting jumpers and knotting them together to create the emerging artefact. After the 25 jumpers had been joined with one knot each, the jumpers were unknotted one by one in an intuitive sequence, until the last jumper was removed and nothing remained. During the actions of knotting and unknotting, shifts in the position of the artefact occurred; for example, it was rotated and turned upside-down. In this experiment, 25 actions of knotting and 25 of unknotting were performed.

Expressions of Discarded Design Decisions 4: Compressing

Figure 4. Expressions of Discarded Design Decisions 4 – Compressing.

Expressions of Discarded Design Decisions 4: Compressing consisted of 28 actions. A semi-transparent plastic bag with a volume of 240 litres was placed flat on the ground, and the 25 jumpers were put into the bag one after another. The sequence of jumpers was intuitive; the positioning of the jumpers in the bag was unplanned. No adjustments or arrangements were made after each garment had been placed in the bag. Through the addition of the jumpers, the total mass was pushed towards the welded part of the bag, which was gradually filled with the material until all 25 jumpers had been added. Most of the air in the bag was then removed by body weight, resulting in a compression of the material. The form was then shaped manually into a sphere. In this experiment actions of adding were undertaken, but these gradually became actions of pushing as the number of jumpers in the bag increased. As compared to previous experiments, no reversed loop of actions was conducted.

The compression was fixed by tying a knot in the bag. In this experiment 28 actions were conducted: 25 actions of adding, one of compressing, one of knotting, and one of shaping.

Reflections upon the experiments 1-4

Expressions of Discarded Design Decisions 1: Layering

As a result of the action of layering, new expressions arose, leading to new possibilities and ideas to explore and reflect on. Different forms, structures, colours, and textures arose through the action of layering (adding and taking away jumpers in an endless loop) highlighted the concepts of need, use, and options.

Expressions of Discarded Design Decisions 2: Wearing

During the actions of dressing the body was gradually transformed; the wearer's movement became increasingly restricted and the body was forced into specific postures. Weight and pressure were felt to build up on the body, especially the shoulders and arms. The many garments compressed the body, and uncomfortable feelings of heat and heaviness were described by the model. Due to increasing discomfort and awkwardness, not all of the jumpers were placed on the model. Limitations relating to what was possible and safety arose, and so when 20 of the jumpers had been placed on the model's body, they needed to cope with the increasing discomfort, weight, tightness, and immobility, and required help to be undressed. As a result, this was felt to be the maximum number of jumpers that could be worn at once. The actions of wearing, through continual dressing and undressing, highlighted the concepts of awkwardness, burden, and limitations.

Expressions of Discarded Design Decisions 3: Knotting

The action of knotting the garments created one large knot. The garments became indistinct, and the order of addition was not possible to trace in the interconnected pile. Each garment's individual properties and functions were obscured and illegible. In the interaction between the 25 jumpers, a conglomeration of the material evolved. The actions of continuous knotting and unknotting highlighted the concepts of materiality, entanglement, and affordance.

Expressions of Discarded Design Decisions 4: Compressing

As a result of the actions of adding, pushing, compressing, and tying and the increasing amount of material in the plastic bag, the 25 jumpers blended to create the impression of one material. Differences in size, form, material, structure, and texture were blurred as a result of the jumpers being randomly pushed into the plastic bag. The actions of adding and compressing highlighted the concepts of resources, pressure, and waste.

Data analyses

The summary of the fibre composition of the garments shows the distribution of fibre types for all of the design material. The most common material is acrylic, an oil-based fibre, and most of the garments had fibre blends, which may complicate recycling processes. The choice of fibre and yarn compositions can lead to problems later in the life cycle of the garment, as well as to what extent non-renewable natural resources are used. The majority (64 per cent) of the garments were produced on a different continent than where they were donated. Although production was stated on the labels of almost all garments, there was little or no transparency with regard to transparency around production steps, details, and labour conditions are rarely given.

Discussion and Conclusions

A Shift in perspective

This research suggests a shift in perspective through a shift in terminology from the notion of the artifact as a homogenous result to the notion of a set of design decisions represented as expression of discarded design decisions.

Design Decisions

In a design process, the designer takes decisions to define an artifact or item into the desired form/outcome. Each design decision that is taken in a design development process, effects an action or a chain of actions that gradually shape and define the item. In that context, the item, or here the garment can be regarded as a set of design decisions that have been conducted. The design decisions are cornerstones in regard to aesthetic, functional and technical values on form and material level. As a set they build interrelations between design variables and represent design qualities. From a garment-based learning context, the set of discarded design decisions opens up for new thoughts for example in relation to reverse engineering processes. The discarded garment can be examined (Chikofsky, and Cross, 1990) in regard to design decisions and actions that define it. An assessment of decision and actions can form ground for reflection and development. While single decisions might be successful, the interrelations between several might affect a devaluation and vice versa.

Discarded Design Decisions

When regarding garments as sets of design decisions, discarded garments represent a set of discarded design decisions. While the term ‘discarded garments’ suggests a consumer responsibility of devaluing garments and as a consequence discarding them, the notion of discarded design decisions points towards a designer responsibility. This shift in perspective through a shift in terminology opens up for substantially rethinking habitual structures of designing. The actions that are represented in past design decisions may thus be rethought in future design decisions in line with, for example, value and longevity.

Expressions of Discarded Design Decisions

The result of a design process is represented in an artefact, an item or in the garment. It is a set of design decisions that represents the aesthetic, technical and functional qualities that have been defined by the designer throughout the decision process. When looking upon the artefact, that has been composed with discarded materials, as expressions of discarded design decisions, rather than a homogeneous result/whole, the focus shifts upon the decision-making process with the chain of actions that have been performed on form and material level such as concerning yarn qualities, stitch structures, colours, cuts, fits and so on. Each decision, that effects an action, alters the artefact in the development phase. In the experiments in this research, key actions such as layering or wearing are defined and performed in repetition until all design material has been used (with exception of experiment 2 due to ethical concerns). The result is a suggestion for an expression of discarded design decisions. With this shift in perspective upon the artifact as an expression of design decisions, the focus is set upon the acts of decisions and consequential actions that make up the artifact.

When relating such perspective back to the artifact as input and output (Nimkulrat, 2013), the artefact analysis and processing can focus upon selected decisions and actions while bracketing others. In the context of ideation and stimulation through the artefact, this means that selected data of the decision process can be derived and further developed, altered or changed. In the context of knowledge transmission, specific aspects can be selected and highlighted. This facilitates a fluidity in the manifestation of data and opens up for critical analysis and questioning of the set of design decisions in focus.

Garment as instigator of change

The understanding of the garment as a set of design decisions and actions facilitates the possibility of reflection upon layers of the design process. The emphasis on discarded design decisions as represented in the discarded garments invites to reflect upon questions of aesthetic values, longevity, quality, and so on that have been defined. In the questioning and critical reviewing of discarded design decision or past design decisions lies the possibility for change when working with future design decisions and in this context, the garment becomes the instigator of change.

From past design decisions to future design decisions

In the experimentation in this research discarded design decisions are entering a new decision-making process that in repetition of relevant actions aims to compose new expressional values based on discarded design decisions. As fluid artefact manifestations, they invite reflections at every instance and layer of the process. Future design decisions can be navigated in this fluidity towards different directions. When viewing past design decisions, for example in garments, they can be assessed in regard to their value and relevance. We can learn from them or question them. Discarded design decisions express a problematic of validity/value in relation to time. The assessment and reflection upon past design decisions is crucial for change towards more

sustainable approaches. Future design decisions need thus to address and engage with past design decisions, their problematics or potentials.

Acknowledgements

We thank the participant of experiment Expressions of Discarded Design Decisions #2 for the patience and contribution, the non-profit organization Björkåfrihet for providing of the jumpers, and the conference reviewers for their highly appreciated comments for this paper.

References

Bigolin, Blomgren, E., Lidström, A., de Oliveira, S. M., & Thornquist, C. (2022) 'Material Inventories and Garment Ontologies: Advancing Upcycling Methods in Fashion Practice', *Sustainability (Basel, Switzerland)*, *14*(5), 2906–. https://doi.org/10.3390/su14052906

Chikofsky, E. J., & Cross, J. H. (1990) 'Reverse engineering and design recovery: a taxonomy,' in IEEE Software, vol. 7, no. 1, pp. 13–17. https://doi.org/10.1109/52.43044

Dalsgaard, & Dindler, C. (2014) 'Between theory and practice: bridging concepts in HCI research', *Conference on Human Factors in Computing Systems - Proceedings*, 1635–1644. https://doi.org/10.1145/2556288.2557342

Fletcher, K. & Tham, M. (2019) *Earth Logic Fashion Action Research Plan*. London: The J J Charitable Trust.

Hallnäs, L. (2017) Outline of a general artistic design research program. Available at: http://www.researchoutlet.se (Accessed: 07 December 2021).

Hultman, Corvellec, H., Jerneck, A., Arvidsson, S., Ekroos, J., Gustafsson, C., Lundh Nilsson, F., & Wahlberg, N. (2021).' A resourcification manifesto: Understanding the social process of resources becoming resources', *Research Policy*, *50*(9), 104297. https://doi.org/10.1016/j.respol.2021.104297

Höök, K. & Löwgren, J. (2012) 'Strong Concepts: Intermediate-Level Knowledge in Interaction Design Research', ACM Transactions on Computer-Human Interaction 19(3):23, pp. 1–23.

Ingold, T. (2007) 'Materials against materiality', *Archaeological Dialogues*, *14*(1), pp. 1–16. https://doi.org/10.1017/S1380203807002127

Ingold, T. (2009) 'The textility of making', *Cambridge Journal of Economics*, *34*(1), pp. 91–102. https://doi.org/10.1093/cje/bep042

Irwin, T., Tonkinwise, C., & Kossoff, G. (2020) 'Transition Design: An Educational Framework for Advancing the Study and Design of Sustainable', *Cuadernos Del Centro de Estudios En Diseño y Comunicación. Ensayos*, *105*, pp. 31–65.

Landahl, K. & Malmgren de Oliveira, S. (2022) RE-DESIGN FOR PRE-DESIGN: Discarded garments as a tool for garment-based learning in fashion knitwear design education. *Högskolan i Borås, Akademin för textil, teknik och ekonomi.*

Nimkulrat, N. (2013) 'Situating Creative Artifacts in Art and Design Research', *FORMakademisk*, *6*(2), Article 4. https://doi.org/10.7577/formakademisk.657.

Nimkulrat, N. (2009) 'Creation of Artifacts as a Vehicle for Design Research', in *Proceedings of Nordes 2009 Conference.* Oslo, Norway: The Oslo School of Architecture and Design.

O'Neill, A. (2021) *Exploring Fashion: Making, Unmaking and Remaking*. Belgium: Lane Publishers.

Rissanen, T. (2021) Free Fashion? Responsible Fashion Series. University of Antwerp October 14-15, October 21-22, 2021

Tonkinwise, C. (2019) 'Design's (Dis)orders: Mediating Systems-Level Transition Design', *Cuadernos Del Centro de Estudios En Diseño y Comunicación. Ensayos*, *73*, 85–96.

von Busch, O. (2022) '"What is to be sustained?": Perpetuating systemic injustices through sustainable fashion', *Sustainability: Science, Practice, & Policy*, *18*(1), pp. 400–409. https://doi.org/10.1080/15487733.2022.2069996

Wensveen, S., & Matthews, B. (2015) 'Prototypes and prototyping in design research', in *The Routledge Companion to Design Research* (1st ed., pp. 262–276). Routledge. https://doi.org/10.4324/9781315758466-25

DRAFTS: Design Research Artifacts as an Intermediary Knowledge. Published in July 2021 at PIFD, Pakistan Institute of Fashion and Design, www.pifd.edu.pk, 51-J/3, Johar Town, Lahore, Pakistan.

DRAFTS: Design Research Artifacts in the Context of Exhibition as a part of UFNA. Published in February 2022 at Lithuanian Artists' Union, www.ldsajunga.lt, Vokiečių g. 4, LT-01130, Vilnius, Lithuania