

Fur and sustainability

- a design perspective

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Fur and Sustainability – a design perspective

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Introduction

What is research at Design School Kolding?

This research project is part of a three-year collaborative programme between Design School Kolding and the world's leading auction house for skins, Copenhagen Fur. The project has evolved in a rolling process, based on the interplay between the involved researchers, stakeholders and employees of the company, as well as experiences from other activities in the programme; a fur workshop for students at Design School Kolding as well as an artistic development project conducted by the unit *Laboratory for Design and Sustainability*. The focus area of the project was initiated by the board of Copenhagen Fur who saw it as an opportunity to gain new knowledge about sustainability in the fur sector. As such, the overall framework of the project has been to contribute with research-based knowledge, to focus on design related areas and the synergy between Copenhagen Fur and Design School Kolding and also to investigate fur and sustainability as a wide-ranging concept seen through multiple research approaches.

Design School Kolding is one out of three artistic design institutions in Denmark. The school educates bachelors, Masters and PhD students at university level in the areas of industrial design, fashion, textile, communication design, and accessories. Research at Design School Kolding is an integral part of the development and the consolidation of the design professional practice as well as the design education. Design research is a young field of research which incorporates substantial diversity and cross-disciplinarity – both nationally and internationally.

The research approach at Design School Kolding is characterised by a high degree of integration of design professionalism and knowledge from design. The starting point is research *into* and *with* design, with a constant portfolio of researchers and PhD students with a background in design. To ensure cross-disciplinarity other professions and theoretical approaches are incorporated from the humanities and from the technical sciences.

The educational programme of the school rests on three pillars; knowledge through practice and teaching, artistic development and scientific research. Based on these, the three overall strategic areas of the school are 'Sustainability', 'Welfare and Well-being', and 'Play and

Design'. This project is based on the strategic area of 'Sustainability', resting on the holistic and user-centred perspective on challenges in the garment sector that has been developed at the school's research department over the last approx. 10 years. Thus, the involved researchers are employed in the school's departments for fashion, textile and accessories. The project was conducted partly at the premises of Copenhagen Fur in Copenhagen and Glostrup, and partly at the research department at Design School Kolding.

Scope, content and output of project

Due to the limited timeframe – approx. half a year's work per person conducted between August 2014 and December 2015 – each sub-project has been developed on the basis of prior research conducted at the PhD level. As such, the four projects continue strands of interest and knowledge development in the PhD dissertations of the respective persons involved, which have then been linked together with particular challenges and potentials in relation to the actual project. The four sub-projects cover the full life-cycle of fur after it has left the auction house in Glostrup; this means that even if the project touches upon challenges of farming, sorting and other related issues that have to do with animal welfare or environmental impacts in the fur industry, the project is conducted from a design point of view with a critical mindset based on existing research and reports on these matters.

The overall research question of the project is:

- *How might a strategic design perspective point towards best practices in the fur sector that align with challenges within the garment sector at large?*

In order to answer this question each of the four sub-projects formed its own, individual research questions:

Cultural history perspective

Based on her PhD dissertation in the area of cultural history in which she investigated the correlation between personal and shared memory and innovation within design processes (Tanderup 2014), Sisse Tanderup, PhD, has conducted her sub-project based on the question:

- *How might (shared) memory of fur promote sustainability at the product – as well as the strategic level?*

Material processes

Based on her PhD dissertation in the area of textile engineering in which she investigated the correlation between the technical and emotional aspects of materials (Hasling 2015), Karen Marie Hasling, PhD, has conducted her sub-project based on the question:

- *How might it be possible to support best practice examples of material processing within the fur sector?*

Design processes

Based on her PhD dissertation in the area of method-oriented design research in which she explored the work and design methods of fashion designers (Ræbild 2015), Assistant Professor Ulla Ræbild, PhD, has conducted her sub-project based on the question:

- *How might general design practices in the area of garment design inform and support the development of sustainable strategies in fur design processes?*

Use of fur

Based on her PhD dissertation in the area of user-centred design research in which she worked with ways of creating value in the garment sector through knowledge of user experience (Skjold 2014), Assistant Professor Else Skjold, PhD, has conducted her sub-project based on the question:

- *How might understandings of user experiences of fur inspire more sustainable practices within the fur industry?*

The full project thus works across various phases of the life cycle of fur – more precisely, phases 2-6 of the model below (fig. 1). During the project, knowledge was accumulated and shared with Copenhagen Fur employees through four comprehensive workshops managed by Head of Research, Irene Alma Lønne, who is responsible for the overall partnership agreement between Design School Kolding and Copenhagen Fur. Besides the report, the output of the project is 1-2 academic, peer-reviewed papers per sub-project which have been published or are currently in the process of being published, or are in the planning phase. Furthermore, the contents of the project will form the basis of the remaining, collaborative programme between Copenhagen Fur and Design School Kolding.

It is important to emphasise that this project has been conducted with the aim of developing new knowledge, not fixed solutions. Therefore the conclusions and suggestions of the report should be seen as a general questioning and evaluation of current practices, pointing towards recommendations for future ones.

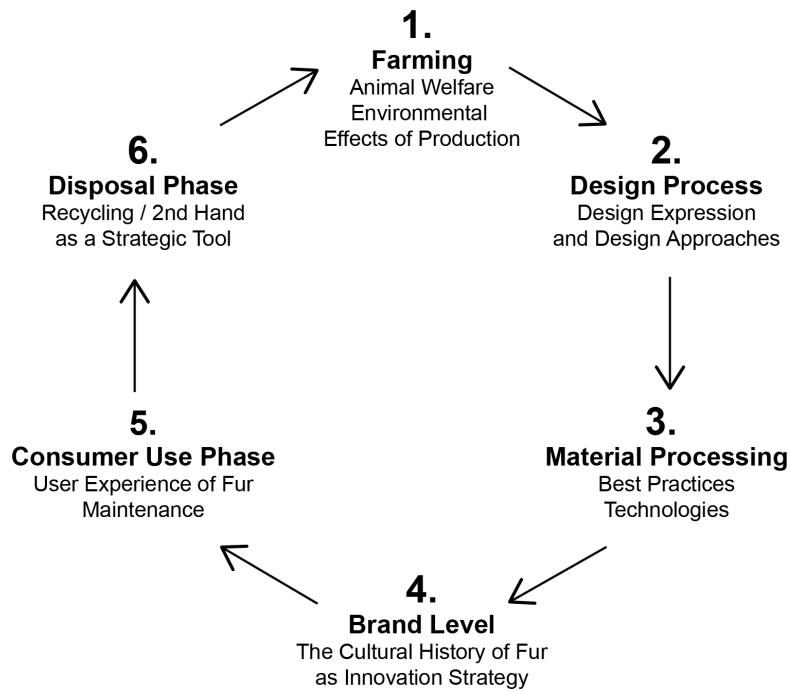


Fig. 1. The research project covers phase 2-6 in the life cycle of fur skin.

Understanding and use of sustainability

Research into fashion and textiles at Design School Kolding aims to raise the level of sustainability within the garment and textile sector. The goal is to contribute with new knowledge rooted in design processes that will tie together more closely the production and consumption of garments and textiles, thus reducing the waste of resources.

The definition of sustainability in the project must be seen as related to Design School Kolding's research umbrella: *Sustainable Futures* – the term we have chosen in order to unite the scientific research areas represented at the school such as textile design, fashion design, design methods, textile engineering, cultural studies, business and organizational studies, art history and design anthropology.

Design has always been preoccupied with the future. It is embedded in the way designers work and think. The design process offers tools and ways through which the designer can understand, analyse and create future objects or services. Creating futures is thus a core element of design and central to understanding the scope of design and the way design is used and understood. As such it is also a core element of design research. Through research we strive to contribute to creating futures that enable sustainable approaches. The idea of sustainability traditionally refers mainly to ecology and economics: issues of consumption and products focusing on production, materials, re-cycling, etc. At Design School Kolding we like to define sustainability as also involving politics and culture – issues of welfare and social wellbeing – forming a direct link to our research themes and strategic areas.

Sustainable Futures frames what we are aiming at, namely a close relationship between the deeper sense and nature of design, i.e. understanding and shaping the future and a sustainable society.

At Design School Kolding, research on sustainability within the field of fashion and textiles has its main focus on resources, products and processes in combination with use experience. This scope is formed by the idea that the existing fast fashion system, which is based on principles of mass production and standardisation, is not a viable model in the future, as it has led to considerable waste of resources, environmental problems and consumer distress due to overconsumption. Of particular interest is therefore the emotional and sensory aspect of garment and textile design, forming a bridge between material knowledge, design processes and user experience. Building on this platform, the strategy of the school has been to initiate collaborative projects with industry partners such as Copenhagen Fur with the aim of investigating potential new business models that cover – but also challenge – the whole value chain and the existing fashion and textile production system. This implies an opening up and questioning of existing paradigms of fashion and textiles and a building up of new alternative understandings and practices within industry, user experience, design education and research.

Fur and sustainability

Based on this view and scholarly approach(es), the project critically investigates pitfalls and potentials related to issues around fur and sustainability. It is obvious that the fur sector has been a late developer within the area, at times falling back a bit on the perception that fur as a long-lasting and potentially naturally degradable fibre is a more sustainable material per se compared to other types of materials (IFTF 2012). However, with e.g. the WelFur programme (<http://www.efba.eu/welfur/>), as well as the initiatives of a sustainable roadmap for the European fur sector conducted by the organization Fur Europe (www.fureurope.eu), it is obvious that issues of fur and sustainability have come to be more important within the fur sector during the 2010s. Considering the way markets and consumers are corresponding to the sustainable agenda, this is not surprising. Since the emergence of anti-fur movements in Europe in the 1980s, the fur sector has experienced a major setback on the European market (Olson & Goodnight 1994). The profession of furriers decreased massively during the 1980s and 1990s, and sales followed the same development (Skov 2005). With the rise of a well-educated middle class in China, currently the largest market for fur in the world, anti-fur movements and general ethical and environmental concerns are now once more on the rise (Ngai and Cho 2012). The fur sector needs to act on these concerns to stay in business and to prove that fur as a material has a relevant – and perhaps even positive – role to play in the 21st century.

From the perspective of this report, the fur sector faces the same dilemma as the remaining garment sector on these issues: acting on sustainability is complex and cannot be solved through particular phase strategies e.g. merely focusing on production. Being currently one of the most polluting industries in the world, the garment sector at large is experiencing severe criticism from consumers, NGOs and politicians, while at the same time suppliers and brands

often find it challenging to identify, separate and act on the challenges they face (Kozłowski et al. 2012). However, fur is not the only type of material subjected to criticism. Looking at other types of materials used in the garment sector, such as cotton, there is evidence of environmental downsides with many of them (Fletcher & Grose 2012). Each type of material must be isolated in order to identify pitfalls and potentials and ways to move forward. Hence, it is not in the interest of this project to compare one type of material to the other, e.g. to compare fur to cotton, in order to promote one rather than the other, as this is not seen as productive. That said, it has been perceived as fruitful to draw on debates about sustainability within the garment sector at large, since a considerable shared knowledge pool has been building up over the last few decades within research environments, industry and amongst consumers, NGOs and politicians.

General debates about fur and sustainability often focus on the welfare of the animals. Working from a design research perspective with no specific knowledge of this area, we leave it to specialists in this field to debate further. However, we can conclude that there seems to be a general change taking place in this debate. On one hand, a more positive perception of fur from the Greenlandic seal has promoted a dawning view of fur as a more sustainable choice, as seals live in their natural environment and the sale of seal skins supports the local community in Greenland (e.g. inuitsila.org/Garde 2013). At the same time, we perceive the activities of Copenhagen Fur as representative of the general fur industry which is operating at two strategic aims to promote the use of fur; 1) to develop a controlled labelling of fur skin ensuring good animal welfare and lessened environmental downsides of fur farming and 2) to push fur into the fashion market through design strategies, thus making fur an attractive look for the fashion consumer. Such initiatives seem to have opened up for an increasingly positive attitude towards fur amongst brands, retailers and consumers.

On the other hand, the attitude towards fur reflects a rising concern amongst consumers, NGOs and politicians – and even in the garment sector itself – about the negative impacts of the way we currently produce and consume garments, as well as other products. It has even been claimed that the fourth wave of industrialism might be highly affected by the overall sustainable agenda, leaving brands such as Copenhagen Fur – and the fur sector in general – no choice but to respond to these concerns in order to appeal to consumers (Gardien et al. 2014). In relation to issues concerning fur and sustainability, this is evident e.g. in the consistency and rise of well-established anti-fur movements, supported by ideas of so-called *zoocentrism*, the philosophy behind a growing movement that promotes a total stop to using animal products including fur, leather, meat, food and beverage derived from animals who do not live in their natural habitat and/or are killed by humans for food or garments (Planthorn 2015).

Positioning of the project through the lens of design

Based on the above positions and reflections on issues of fur and sustainability, the four sub-projects together form a view that departs from a strategic design perspective. As the model illustrates (see fig. 2), this positioning is based on the argument that in order to develop a

more sustainable garment sector (including the material of fur), it is necessary to start acting on the lack of interconnection between production and consumption taking place today. To illustrate this, we present a three-phase development model showing how Copenhagen Fur is engaged or not engaged with various positional strategies to sustainability. They follow the remaining garment sector in the sense that the main focus is on production of raw materials – the mink skins – and the possible negative environmental or ethical effects this production might have. There is a high awareness of how to better ensure good animal welfare that can be measured and labelled, how to make sure there is high waste efficiency (by processing mink carcasses into e.g. biodiesel, bone meal or fuel for heat and power plants), or how to minimize damaging emission from farming. Among these types of what we call “Phase 1” activities, Copenhagen Fur is engaged in their own laboratory in Glostrup as well as in the research centre in Skejby.

With regard to what we call "Phase 2" activities that focus on so-called post-retail services, take-back policies etc., Copenhagen Fur has currently no programmes. These activities centre on re-collection and re-use of materials, which are on the rise in particularly the fast fashion sector (such as e.g. H&M's 'Garment Collecting' programme or Bestseller/Jack&Jones' take-back scheme). Activities such as these seem to aim at two strategic positionings of the respective brands in combination:

1) It is a good marketing strategy to lessen the environmental impact of fast fashion through re-cycling material instead of contributing to the vast challenge of waste management within the sector. This type of activity is increasingly developed and supported, also at the governmental level (e.g. WRAP 2012). Even if Copenhagen Fur has had single, promotional projects on second-hand fur, there is very little development within this area. This is based largely on the assumption that promoting second-hand fur would decrease consumers' need for new fur, although it might altogether create a positive impact on the way consumers perceive fur in general.

2) Take-back programmes foresee a future where there might be a lack of 'virgin' resources such as cotton due to the expansion of the sector; as the middle class of the BRIC countries (Brazil, Russia, India, China) develops, some experts foresee that the planet is simply not big enough to provide the market. Hence, companies that have the volume and the muscle are in the forefront by creating systems and logistics for re-use of fibres.

Together, "Phase 1" and "Phase 2" activities do address the main concerns within the sustainable agenda in relation to CSR (Corporate Social Responsibility) and the environment. However, it is largely agreed that in order to move forward to minimize the negative impact of current industry practices, consumers must engage in sustainability, which they currently do not do. Therefore, "Phase 3" activities address ways to engage consumers by working strategically with design processes, sales platforms and business models which take actual user experience of garments into consideration. It is important to notice how these types of activities break with the dominant position of fashion within the garment sector. Following

the idea that the juxtaposition of fashion and sustainability is fundamentally a paradox like oil and water (Black 2013) we at Design School Kolding have been working with ways of addressing alternative understandings and design strategies that go against fashion's inherent focus on novelty, youthfulness, standardization and rapid turnover. Hence, it is suggested that there might be a good reason to develop a more diversified approach that more precisely connects with consumer needs in order to slow down the pace and create a more positive environmental footprint for the entire sector. As the model shows, Kopenhagen Fur has not engaged with such type of activities, since their main design strategy particularly during the last decade has been to move into the area of fashion (see fig. 3).

In this project, through the perspective of the four subprojects, we elaborate on how companies might approach these types of activities, with Kopenhagen Fur as an exemplary case.

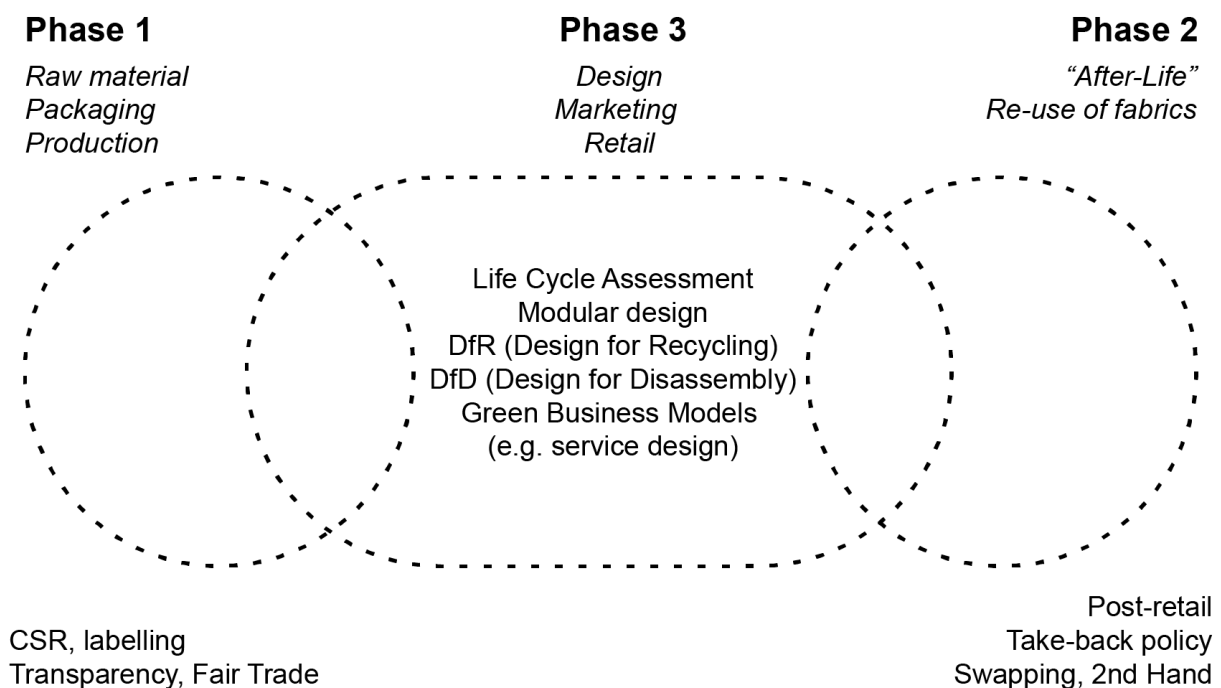


Fig. 2. Positioning the project in relation to sustainability which is based on the research strategy of Design School Kolding.

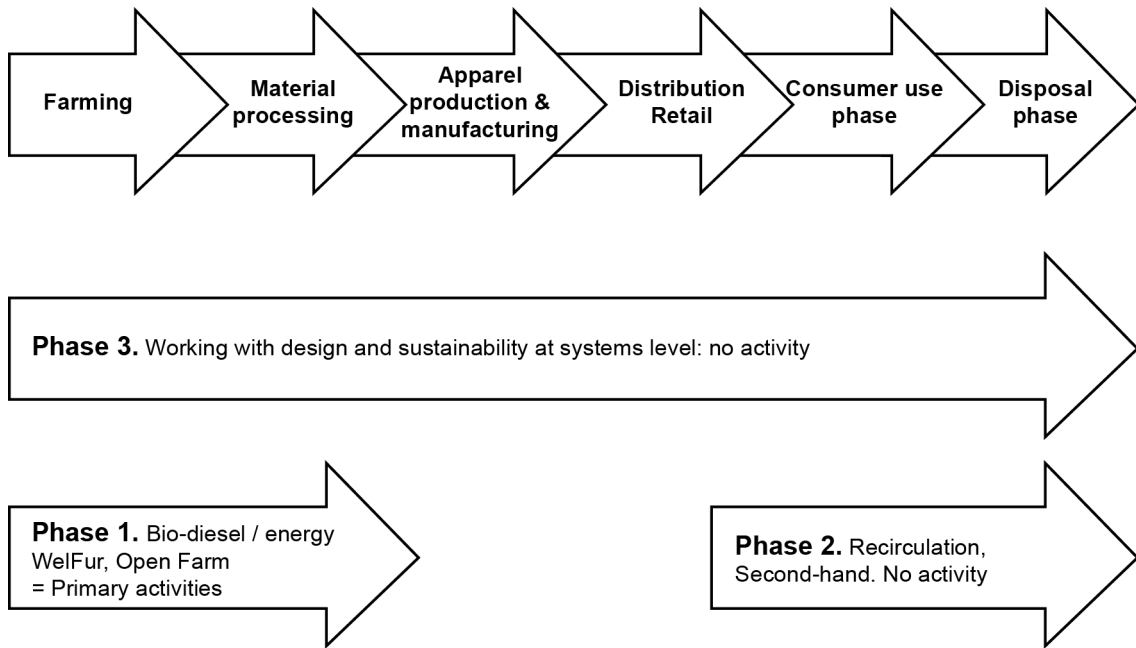


Fig. 3. How Copenhagen Fur works at present with the proposed three phase strategies for sustainability.

Sub-project I: Cultural History Perspective

By: Sisse Tanderup

Introduction

The purpose of this sub-project is to investigate the relationship between personal memory and cultural memory and design from the point of view of Copenhagen Fur.

This sub-project builds on research showing that the ability to remember personal events is at the heart of what defines an individual as a person with obligations, roles and commitments in a given society. It enables us to draw lessons from our past and plan our personal future. It helps us to orientate and participate in complex social communities. Autobiographical memories are therefore crucial for a sense of identity, continuity and a direction in life. This has been the subject of many neuro-psychological and brain-imaging studies, showing how the construction of personal memories recruits different sub-systems of the brain. Studies of autobiographical memory have thus informed our understanding of how neural activity relates to conscious experience (Berntsen & Rubin 2012). In this sub-project, this basic idea has been used as a lens to understand how past memory – at a shared as well as at a personal level – might provide insights into new perspectives on fur and sustainability.

In the antiquity it was important to carefully sew the garment for the dead in order to make it last in the afterlife after burial. Knowledge was passed on orally and was thus inherited from one generation to the next. It was not written down. It was not until the early years of the industrialization that sustainability became an issue when people such as William Morris (1834-1896) advocated for a sustainable way of thinking many years before the concept of sustainability was created. He saw all the problems that the industrialization had resulted in, such as pollution and bad working conditions in factories. He was the first to take corporate social responsibility seriously in his own company where he treated his workers well (Morris 1994 [1887]). Another important figure at that time was John Ruskin who wrote *The Seven Lamps of Architecture* in 1880. In the chapter "The Lamp of Memory" he described how architecture has the ability to connect forgotten and subsequent ages with one another, thus

constituting an identity as it concentrates the sympathy of all nations (Ruskin 1989). In that way we should rediscover our ability to remember through architecture and design. This way of thinking came from a concern that industrialization had the consequence that everything went too fast. Therefore, he advocated for memory as a way of slowing down and sensing the world once again.

The design historian Victor Papanek wanted designers to have a more responsible attitude towards their own profession as a reaction to the consumer boom in the 1960s. He stated that design was a luxury enjoyed by a small group of people. It was important to him that designers should focus instead on neglected populations such as minorities e.g. Indians and troubled children (Papanek 2010). Even though Papanek did not specifically address the connection between memory and sustainability, he advocated for a social awareness, which designers try to rediscover today. Well-established research into the interrelationship between user experiences of garments and sustainability argues that the ability of design to form social bonds carry with it a potential for long-lasting use and heightened focus on maintenance, as stated by e.g. Raunio (2007). As Stuart Walker writes in *Sustainability by Design*, the word ‘sustainability’ evokes ideas of longevity, continuity and endurance. ‘Outer beauty’, on the other hand, is perishable and transient. It exists only for a short period, but fades with time (Walker 2007).

This is an interesting concept in relation to fur as a material due to its potentially long life cycle in use. In an interview conducted for this project, Berntsen elaborates further on how a memory-based structure can be carried on to future generations¹. For example, if your grandmother gets a mink fur coat as a present from her loved one in connection with an important event such as her wedding, this fur coat gains a special memory potential as it is connected to an important ritual in a significant life event.

Project Description

In order to explore these questions, the overall focus point of this sub-project has been to understand how fur design might better support future strategies for sustainability, in the activities of Copenhagen Fur, as well as within the fur sector at large.

During this project it was realized that there is a very important part of the memory of fur that seemed to be missing in the storytelling of Copenhagen Fur, not only concerning communication activities, but particularly in the activities around design taking place at KiCK. The viewpoint of this sub-project is that the farmers are key to understanding the DNA of Copenhagen Fur, as the company functions as a cooperative, owned by app. 1600 farmers (1578 as of November 1st 2015). The reasoning behind this is that a deeper understanding of the farmers' values and emotions related to farming practices and the animals might form new

¹ Interview with Dorthe Berntsen, 9/02/2015

understandings of fur that go back to a shared memory of the relationship between humans and animals in our past history.

These basic ideas led to this overall research question:

- *How might (shared) memory of fur promote sustainability at the product as well as the strategic level?*

This question is followed by these sub-questions:

- *What are personal-cultural memories?*
- *What memories are important in relation to Copenhagen Fur?*
- *What are sustainable memories?*
- *How might Copenhagen Fur operationalize sustainable memories?*

Process and Method

This postdoc project involved 15 qualitative interviews with key people from Copenhagen Fur's management, designers, mink farmers and researchers, structured on the basis of the research questions.

The interviews, developed during this project as memories of garments in general and mink fur in particular, were seen to involve mixed emotions: some descriptions are full of pride and pleasure, while others describe feelings of shame and inferiority. This was especially relevant in interviews with Anne Lisbeth Schmidt², researcher and museum conservator at The National Museum of Denmark, responsible for the exhibition "Life and Death" in 2014-15, and Ditte Hejberg Sorknæs³, now former Head of Marketing at Copenhagen fur.

Findings

At the overall level, the four main research questions led to the following findings:

- Personal and cultural memories are intertwined.
- Both personal and cultural memories are important for the self-understanding of Copenhagen Fur.
- Memories are sustainable, which makes it important to pass on stories about fur to the next generation.
- Memories have a sustainable potential for the future. It is important to look at both our positive and negative memories about fur.

² Interview in Copenhagen 17 Dec. 2015

³ Interview at Copenhagen Fur 17 Dec. 2015

Personal-cultural memories

Interviews showed how personal memories from our childhood are important for our memories in the future. We are mirrored by the way our shared culture looks at fur. This is the reason why we should find inspiration in the history of fur design which is long, since fur was the first garment worn by humans.

During our childhood we are mirrored by our parents' view of fur. For that reason our parents' negative or positive view of fur will influence our future view of fur. Ditte Sorknæs gave an example of this. She told me that she had a very negative experience with fur as a child when her father gave her mother a mole fur coat. Her mother was very fond of that beautifully designed fur coat that was short and light and not long and heavy as typical mink fur coats designed at that time in the 1970s. But when her mother told a rich friend that it was mole and not mink she was ashamed that she was unable to equal the status and standards of her friend.

What memories are important in relation to Copenhagen Fur?

Historically, fur has been the object of philosophical discussions about morality, which is not to the same extent the case with e.g. textiles and jewellery. This attitude is somewhat surprising since back in the antiquity, people were buried in fur and jewellery according to Anne Lisbeth Schmidt from The National Museum of Denmark. In her experience, fur is still seen by researchers as a material connected with negative memories about animals that are exploited and degraded of body and status. She personally has mixed memories about working with fur. As a conservator, she has been working with fur since 1983 and vividly remembers working with fur that was treated with DTP and other preservatives. At that time she was pregnant. Because of that, she has a memory of fur as something dirty. On the other hand, she loves to work with fur from the antiquity when people had this magical relationship to the animals they killed.

What are sustainable memories?

Fur has a potential for sustainability, but it is important to look at nearly forgotten cultures as for example the Inuit culture. Inuit women formed their identity through the animals which their husbands killed. Beautiful fur garments created by an Inuit woman showed that her husband was a great hunter. In that way, what one might call sustainable memories are connected to aesthetics. The Inuit culture is dying and therefore the Inuit craftsmanship is disappearing. Such a tradition based on cultural memory disappears due to many factors. First, it takes time to make sustainable design, Anne Lisbeth Schmidt told me. When you can easily buy a cheap polyester coat in a shopping mall instead of using all parts of an animal, like the bones of a seal, the sustainable tradition disappears. It becomes much easier and convenient and timesaving to be a part of a fast fashion cycle than a slow fashion cycle. If, for example, your parents have not taught you to sew with thorns as they did in the antiquity, because it is time consuming, you forget how to do that as time passes. At that time, sewing with thorns meant that you could sew with great precision and make fur coats that were

beautifully constructed. These fur coats could last for generations. This implies that you forget to pass on a valuable tradition.



Fig. 4. This picture shows a woman's fur coat called an amaata. It has a large hood the function of which is to carry a little child. The picture was taken by Roberto Fortunata in 2011.

How might Copenhagen Fur operationalize sustainable memories?

It has been a basic observation that shared memory of design aesthetics colour the attitude towards fur. For the past century much fur design has been focusing on the idea of fashion and celebrity culture and, not least, Western ideas about femininity. In fact, there are those who claim that fur design has in some sense come to epitomize virtues and practices of 20th century industrialism (Skov 2009). These virtues are highly criticised and up for debate around fashion and sustainability such as up-speeded turnovers leading to overproduction and overconsumption, again leading to exploitation of the work force and the environment (Cooper 2005). So when e.g. the Asian market and the dominant runways engage with the aesthetics of 20th century celebrity culture and fashion⁴ this type of design ‘language’ carries with it values that are actually not very compatible with 21st century ideas about sustainability, balance, and respect for nature. Conversely, the design ‘language’ inherent in the fur design of indigenous cultures such as the Inuit bears the potential for showing a new pathway for shared memories around fur that are more relevant for the future.

Other findings that came up during the project

⁴ According to chairman of Copenhagen Fur, mink farmer Tage Pedersen who was interviewed on 22.Aug. 2015.

Sustainable memories have to do with "thinking with the hand." Mink farmers have often plied their trade for many generations. As one of the mink farmers told me, "It is because I grew up on a mink farm. Mink farming "came with the breast milk." The sons help their fathers with mink breeding, and the fathers teach their sons to measure mink hair, so that they are able to quickly assess the quality of mink fur by hand. Thus it is only the best mink that will be bred⁵. Sustainable memories are also memories that go beyond the classic idea of the high society lady wearing a fine fur coat on a special occasion, as observed in the interview with Søren Skriver, Head of Competence Development and Fur Academy/HR Department at Copenhagen Fur, who describes an early memory of fur from the Disney cartoon with Donald Duck riding a sledge with the kids⁶.



Fig. 5. This photo shows Tage Pedersen, chairman of Copenhagen Fur and a mink farmer holding some mink pups.

⁵ Interview with Bent Bisballe Østergaard, a mink farmer in Denmark, 27.July 2015.

⁶ Interview with Søren Skriver 23 April 2015.

Recommendations

If Copenhagen Fur wishes to move away from the negative memories of fur and operationalize fur as more sustainable, a radical change in their mindset about fur is required. One way to do this could be to tell new stories about the meaning of fur through personal memories of mink farmers and the company management. It could also be fruitful to revitalize the connection between fur and nearly forgotten cultures such as the Inuit culture, and the way these cultures saw fur as deeply connected with nature, something that tied together the community and the family, and something that was made by hand, making use of every bit of the material. Examples such as these go beyond fur as associated only with conspicuous consumption of the celebrity culture and upper classes of the 20th century, symbolic of the practices around early and mid-industrialism, which has actually caused the current environmental challenges.

Conclusion

This sub-project has shown that memories of fur can be seen as sustainable. The notion of memory design is related to an involvement of all your senses in the memory process. The sense of touch is especially important to Copenhagen Fur. When people came to KiCK they always touched the fur styles and samples exhibited in the house. Anne Lisbeth Schmidt explained that women of the Inuit culture formed their identity through the animals that their husbands killed. Beautiful fur garments created by an Inuit woman showed that her husband was a great hunter. In that way, sustainable memories are connected to aesthetics. Both examples show that sustainability is connected to how people establish emotional relationships to fur and thus indirectly to other humans in the past and in the present.

Sub-project II: Materials and Resource Flows

By: Karen Marie Hasling

Introduction

The emphasis of this sub-project is on how fur is produced and provides a transparent overview of the consumption of resources and generation of waste in the production, processing, design, use and disposal of fur (and similar materials).

The output is an illustrative overview of the product life cycle of fur. It highlights already implemented and best practice examples of processes and technologies as well as potential processes and technologies that are beneficial for the environmental impact of the Danish fur industry. The overview and the examples can supplement the existing material collection of fur skin, techniques and design and also function independently as a way to communicate the life cycle among employees at Kopenhagen Fur with collaborating companies and for educational purposes.

Project description

A dominant part of mapping the life cycle focuses on processing, an area that is outside the usual scope of Kopenhagen Fur but with a large impact on how present and future users relate to fur as a material. The documentation can help enhance the level of transparency; create a better understanding, and point towards processes and production methods that critically consider those that potentially damage the environment and human beings.

The mapping applies a MECO-analytical approach, a simplified and predominantly qualitative life cycle assessment that emphasizes raw materials (M), energy and water (E), chemicals (C) and other (O) (McAloone and Bey 2009). The mapping is part of an illustrative overview of the product life cycle point at selected part processes such as tanning and dyeing.

Kopenhagen Fur sells skins from a variety of different animals such as mink, seal, chinchilla and fox among others that have different life cycles. Their main product, however, is Danish mink skins (~70% compared to ~20% for non-Danish fur skins in sales value) and Danish mink farmers own the organization (Dansk Pelsdyravlerforening / Kopenhagen Fur 2014). Consequently, this analysis is restricted to considering mink bred in Denmark, i.e. when the term 'fur' is used, it refers to mink fur.

Furthermore it requires much work to get into all the details and track data or information from all resource flows in the life cycle, and navigating quickly becomes complex. Therefore this overview has emphasized simplicity and usability, meaning that the levels of data and information have been restricted to the main level of the life cycle and foreground data and processes (Klöppfer 2014).

Process and method

A life cycle assessment is a commonly used approach to assess the impact of a material or a product and evaluates the impacts of the inputs and outputs in a full product life cycle comprising the stages: raw material extraction or production, processing and refining, product use and disposal as well as intermediate steps such as transportation and storage.

Assessments of fur have been conducted by (Bijleveld et al. 2011; IFTF 2012) and the aim of these analysis have been to make fur production more transparent and elucidate some of its critical aspects as well as highlighting potentially beneficial initiatives.

Three basic levels of LCA's exist (Hochschorner and Finnveden 2003; Wenzel 1998):

- A qualitative or semi-quantitative matrix LCA
- A screening LCA that quantitatively uses readily available data
- A full quantitative LCA including new data inventory

The life cycle assessments conducted on the fur industry are combinations of screening assessments and full quantitative assessments. For both kinds of assessments the challenge is that a subsequent amount of data or information is necessary in order to provide unambiguous results. In the mink fur industry data collection is complicated, because the auction houses have very little control over the skins that have left the premises of Kopenhagen Fur, which makes it difficult to make a total assessment. Consequently, in the conducted assessments multiple parts of the processes are left out, even though these are generally of the highest concern; providing displaced assessments is not saying much about the real situation.

During the project multiple discussions with students and peers have helped to frame an alternative approach to the conventional use of life cycle assessments. In the discussions it was experienced that people in general had very little knowledge of the fur industry as a whole and that some of the very positive initiatives taken by the industry were unknown to

people. This further led to miscommunication and misunderstandings. Consequently the analytical approach adopted here is based on a qualitative overview of a product life cycle for fur with illustrations based on a circular system rather than descriptions based on a linear system. In the overview positive and negative impacts are indicated to make the process transparent and describe the resource flows.

The included processes and technologies have been compiled based on literature studies on previously conducted life cycle assessments of fur and on more specific studies of traditional and prospect processes and technologies and are also based on dialogue with employees at Copenhagen Fur, specifically employees involved in production and intersorting.

Findings

One of the main issues is that the life cycle for fur production is very diverse and involves sectors and industries with different traditions. Mink farmers are responsible for the breeding and agricultural part of the life cycle that is subject to veterinarian control similar to conventional agriculture in Denmark. Due to this, and to the knowledge sharing imbedded in the cooperative structure of Copenhagen Fur, Danish farmers are constantly improving standards that make them produce good quality skin. However, when the skin have been auctioned and shipped further processing is up to the individual buyers.

Hereafter fur becomes a raw material in the global mass production industry under very different market conditions, which consequently affect the transparency of the processes the material undergoes. An indication of this is that a predominant part of the mink skins are sold to Chinese buyers that process and sell the mink skin in Asia, where standards for environmental and human aspects of responsible production are normally very different from standards in Denmark where the skins are produced. Specifically two aspects can be highlighted:

- Production sites are either inaccessible or recipes are secret or imprecise, because they are considered trade secrets in a strictly profit-oriented competition.
- Complex networks of sub-contractors make it difficult to monitor the actual production process, because many stakeholders are involved.

There are production facilities that provide more accessible and well-documented information, but these usually stand out and cannot be considered as the norm. However, being willing to be monitored also often means being open to criticism and potential improvements.

Another relevant issue to address is: To which large industry does fur processing belong? The fur industry is closely linked to the leather industry due to its similar raw material and processes. It can be further linked to the textile industry due to its cutting processes and end-use, but there are strong variations in the chemical production processes and in the need to

‘construct’ materials, such as when fibres are made to yarn and when yarn is woven or knitted into piece goods. In the fur industry individual furs are joined in the construction of garments, meaning that the refinement processes follow different tracks.

Finally, it is a challenge that the fur industry lacks a tradition for quality standards, as seen in for example the fashion and textiles industries, with labels such as the GOTS-label for organically grown and processed cotton products (www.gots.com), the Oekotex-label for textiles free of harmful substances (www.oekotex.com), the Woolmark-label and its sub-labels for wool products (www.woolmark.com) and the Fairtrade label for responsibly produced products (www.fairtrade.net). Not all of the above are labels related to sustainable or environmentally friendly products but they ensure quality. Labelling fur products could be taken even further by making the production process transparent and indicating where and how the different process steps have been taken. In that way the consumer would have the opportunity to select or deselect certain materials and processes. This is further elaborated in the recommendations. (For a comprehensive overview of eco-labels see the Ecolabel Index, www.ecolabelindex.com)

Output

Based on the above findings it was evident that a quantitative life cycle assessment would be inadequate, as essential data are lacking. Rather the output is a qualitative life cycle assessment overview with focus on materials (M), energy (E), chemicals (C) and other (O) issues and the inflow and outflow of resources of all kinds. The overview acts as a template with some examples which the organization can further build on in order to better communicate best practice examples or problematic issues.

The predominant part that lacks information is the one relating to tanning and dyeing processes. Here it is necessary to resort to generic information about refining processes and inspiration from similar industries. For tanning most literature is based on work on leather tanning (e.g. Aravindhan et al. 2007; Kanth et al. 2009) that shares many similarities with tanning of fur skin, but there are also differences. In general less harsh chemicals are used for processing fur skin, as it is essential that the hairs remain on the skin, and the fur refinement processes are therefore more sensitive to smaller variations in the tanning and dyeing recipes. Consequently suggestions for alternative processes found in adjacent industries may not be directly applicable.

Illustrative overview

The life cycle is assessed with a qualitative and illustrative overview comprising the five part processes:

- **Raw material production**, i.e. animal breeding
- **Refining / processing**, i.e. pelting, tanning and dyeing

- **Design**, i.e. sampling and prototyping
- **Sales and use**, i.e. distribution, logistics and consumption
- **Disposal / reuse**, i.e. incineration, dumping recycling or reuse

In figure 6 resource consumption and waste generation is indicated with pictographs for ‘energy’, ‘water’, ‘chemicals use’ and ‘waste’ respectively as well as for transportation being ‘train’, ‘truck’, ‘ship’ or ‘airplane’. The transportation devices consume different amounts of energy and thus have different carbon footprints. Here ‘train’ consumes less energy per unit than ‘truck’ on shorter distances on land, and ‘ship’ consumes less energy per unit than ‘airplane’ for longer distances.

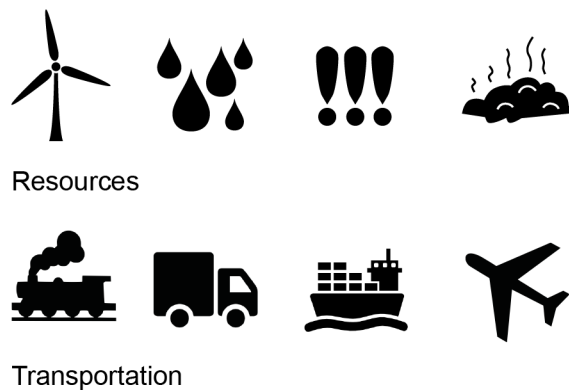


Fig. 6. Pictographs for four kinds of resources: energy, water, chemicals and waste and for four kinds of transportation: train, truck, ship and aircraft.

Information and method cards

The qualitative life cycle overview is assisted by a number of information and method cards (see fig. 7). The information and method cards offer and describe initiatives and approaches to sustainable use of fur that can help to communicate the resources and waste materials that are used and produced within the entire life cycle. Thus the information and method cards demonstrate how specific aspects in the life cycle already target sustainable issues or where potential sustainable issues can be improved.

The information cards predominantly focus on resource and resource flows based on processes and technologies, whereas the method cards put focus on the design and consumption phases with emphasis on craftsmanship and practices.

○ **Vacuum packing skins for shipping**
 Kopenhagen Fur, Langagervej 60, DK-2600 Glostrup

What?
 When the fur skins have been sold at the auction, they are vacuum packed and treated with CO₂ before being put into cardboard boxes ready to be shipped.

Why? / How?
 The vacuum treatment protects the fur skins from mites that otherwise can damage the skins while being shipped. The vacuum further decreases the volume of the skin, making shipping more efficient.

Limitations?
 -

Additional information?
www.kopenhagenfur.com

② IMPLEMENTED TECHNOLOGY

KOPENHAGEN
FUR



Fig. 7. Example of information card for the technology of vacuum packing skins prior to shipping (in the actual card fur skin would replace the fish shown here).

The cards contain the categories ‘What?’, ‘Why? / How?’, ‘Limitations’ and ‘Additional information’ as well as a title, a sub-title (if relevant and applicable) and an illustrative picture on the back. Each card is linked to the life cycle overview with a number indicated at the bottom left of the card.

- The ‘**What**’ category describes the aim of the initiative as in improvements and / utilizations.
- The ‘**Why? / How?**’ category describes why the initiative is beneficial and how it has been or can be obtained.
- The ‘**Limitations**’ category describes possible limitations on using or implementing a process, technology, technique or practice.
- The ‘**Additional information**’ category provides titles and/or links to journals, webpages and other media that can provide additional insights.

Categories

The information cards can be categorized according to their degree of implementation such as:

- Implemented technology or process
- Best practice technology or process
- Technology or process transfer from adjacent industry
- Explorative technology or process

The categories serve to give the user of the information cards an idea of the complexity and time frame for the use of this process or technology.

Further recommendations

It is recommended that Kopenhagen Fur becomes increasingly aware of and communicate which parts of the fur product life cycle they take responsibility for. Presently, manufacturing raw materials and not products is the primary business and the organization can benefit by being clearer about this. However, it appears that there is an increased interest in dealing with a complete product life cycle. It is necessary to identify challenges, also those outside the scope of Kopenhagen Fur's organization, to provide a transparent overview of the life cycle.

The general trend is to provide additional information on the multiple steps a product undergoes in its manufacturing process. Kopenhagen Fur already has a tracking system for their skins before they leave the auction house, which could be carried on in the entire life cycle.

Conclusion

The following conclusion briefly elaborates on selected findings and challenges identified during the project. The conclusion can also be linked to the recommendations in the above section for what Kopenhagen Fur should focus on in future projects and in their communication with internal and external stakeholders.

The general trend among consumers is more transparency. This means that consumers request that information about products should be accessible and reliable so that they can base their choice of consumption on this information. One approach to transparency is standardized labels such as GOTS, Oekotex and Fairtrade that provide a security for the consumer that a product has been produced under certain certified conditions. The fur industry does not have a tradition for standardized labels that can guide consumers towards good or away from inferior products, considering issues such as chemicals, water, energy consumption and ethical concerns such as labour conditions.

One of the challenges providing a transparent life cycle is the diversity of sectors that take part in the life cycle for fur products. Whereas animal breeding, at least in Denmark and in Northern Europe, has adopted a cooperating and knowledge sharing mentality, fur processing, such as tanning and dyeing, applies a competitive and consumerist mentality. Thus, if Kopenhagen Fur wants to provide an increased level of transparency for their skins, an option could be to encourage the establishment of one or more standardization organs to enhance the level of transparency in the fur industry.

Sub-project III: Design Processes in Fur

By: Ulla Ræbild

Introduction

How fur is designed can influence not only the durability of the material but also the longevity of the product. This project has explored potentials within fur design practice for supporting and making full use of the long lasting properties of the fur material through design approaches and methods. Furthermore, the project has looked at how fur might become relevant for a more diverse group of users than today through an explication of practices embedded within the crafts and design traditions surrounding the material that can be considered in support of sustainability. The output consists of four main findings with regard to sustainable potentials within the fur design process: close collaboration between actors in the design process; re-design/up-cycling of used fur; user/customer involvement; and communication of diverse fur 'design stories'. Furthermore, a set of dialogue cards have been developed containing short descriptions of design approaches supportive of sustainability that can be applied within a fur design process.

Project description

What is sustainability with regard to fur design? Can sustainability be something directly visible in a fur coat for example or is it something we need to know in order to appreciate it? And if something sustainable is present in a design, how can we then identify it and talk about it? And most importantly, how might designers work with sustainability in the fur design process? Sub-project III has explored these questions of how designers can work with fur, provided the intention is to design in support of sustainability. The project has sought to identify sustainable potentials within the fur design process as well as identify existing practices that are in line with sustainable thinking.

The aim of the project has been to contribute with new knowledge about and for design practice related to fur that can support sustainability in and around a design process and consequently the product outcome. Furthermore, the aim has been to review existing research based on recommendations for sustainable design practice within apparel and fashion design, e.g. design methods, approaches and principles in order to assess whether these can be transferred to – or already exist within – fur design practice.

Considering the current overall sustainable paradigm shift in the fashion industry, the purpose of the project has been to strengthen Copenhagen Fur's position as market leader in relation to their external collaborations, i.e. brands, design universities and suppliers, in addition to making knowledge concrete and operational internally for Copenhagen Fur's own staff as well as for external use in dialogue and work processes with collaborative partners.

Process and method

Overall, the process has been one of gathering and producing different types of empirical material during and after which the data has been related to one another for insights to emerge.

Three data gathering strategies were applied; reviewing existing research; conducting interviews and engaging in design development.

Firstly, the project identified and examined more than 35 articles within fashion design and management research addressing the theme of sustainability, covering areas such as Slow Fashion, User Involvement, Adaptability, Business Models, Luxury, Design Process, Education and Aesthetics.

Secondly, 10 background interviews with relevant actors, i.e. furriers, designers, pattern makers and production managers, internal as well as external to Copenhagen Fur, were conducted and transcribed. Thereby it became possible to assess practice examples within current fur design processes in the light of the research-based recommendations identified in the literature.

Thirdly, the project involved fashion design students at Design School Kolding who participated in a six-week design project for graduate fashion students on re-use of second-hand fur (named Re-Furbish, see page 40). The Re-Furbish design project took place within the framework of the present study, and thus synergy was established between research and education. Furthermore, empirical material produced by the students within their fur design projects could be related to the data produced by literature review and interview and vice versa.

During the process of exploring the data, the focus narrowed to three key questions:

1. *How might the craftsmanship embedded in the tradition of making and designing fur products be re-assessed and fully activated as sustainable best practice?*
2. *How might the long-lasting property of the fur material be supported and communicated through various design approaches?*
3. *How might the notion of luxury often associated with fur be understood in relation to sustainability?*

Findings

Close collaboration between skill and knowledge sets in the fur design process

This part of the sub-project builds on question 1, which is about craftsmanship, but also links to questions 2 and 3.

Applying a fast fashion production mode to fur, i.e. to separate the design process from the shaping and making processes, saves costs. But, if sustainability is key the data shows that an actual physical collaboration between furrier, pattern maker, designer and producer during the design process enhances the sustainable potential in a fur product. In order to make long-lasting products, i.e. products that remain in use for a long time, it is of importance to enable synergy to take place within the design process between the different skill sets involved (Clark 2008). Thus knowledge of fit and cut, knowledge of fur techniques and knowledge of production processes need to be merged with the designers' intents and ideas within a joint process of concrete physical collaboration. Moreover, new technological advances may be addressed from a joint perspective and thereby enable innovative synergy (Niinimäki & Hassi 2011). In this context, the notion of local production is suggested within the research literature (e.g. DeLong et al., 2013) and this viewpoint was similarly represented within the interviews as a way to facilitate innovative collaborative design processes and thus unfold the full potential of the material. Yet, although the idea is agreed to be a way forward in terms of design innovation, the question of how such local production places could be established and run in a financially viable manner is also problematized by the interviewees.

Re-design and up-cycling of second-hand fur

This part of the sub-project builds on question 2, which is about the long-lasting property of the fur material, but also links to questions 1 and 3.

The sustainable potential of using second-hand fur within fashion design has been explored within the framework of the Re-Furbish design project (see page 40). But the data overall indicates that re-design of used fur can hold a new market potential for designers, furriers and companies. Moreover, such practice can communicate new types of stories around the use of fur, i.e. less focus on luxurious consumption and more focus on re-use of resources, thus engaging other kinds of consumers (Watson & Yan 2013). Due to the fur materials' long-lasting properties as well as their price, many people hold on to fur coats, even when they no

longer suit the owner in shape or style. At the same time interviewees speak about furriers as a dying species in Denmark and Europe, as the number of people educated within the field is declining. The data points to two ways of re-activating the inactive fur material represented by the un-used fur coats:

- Designers can "enter" the second-hand coats as material into a new design process and thereby create new value, through design, from the old fur. Such a practice could play out as a joint venture between design and fur knowledge and thereby pose a collaborative business potential.
- Re-design of old furs can take place in a dialogue with the fur-owner (Gwilt, 2013), either as a traditional re-modelling of a fur garment to the consumer's wishes, or, as a new take, within a workshop frame, based on user-involvement, where the owner is part of the making process facilitated by designers and furriers.

Both scenarios pose new possibilities at the intersection of design, fur and user in terms of consumer experiences, business models and overall contemporary relevance of fur knowledge and skills.

Fur as an everyday material; service and co- design as luxury

This part of the sub-project builds on question 3, which is about the notion of luxury, but also links to questions 1 and 2.

The project has been interested in exploring how the notion of luxury, often associated with fur, can be understood in relation to sustainability. Some literature points out that 'true' luxury products, meaning well-crafted products of high-end quality materials, can be argued to be sustainable due to product longevity (e.g. Finn 2011). Here lies a potential for understanding and communicating fur as luxury in a new sustainable context – one that is not primarily associated with wealth and status symbols. In line with the literature, interviewees were generally reluctant to talk about fur as luxury in the traditional sense, i.e. as an exclusive product with no real use value purchased as a symbol of wealth. Instead the notion of fur as an everyday material was brought out in the sense that fur has the ability to provide luxury for everyone in an everyday setting through sensory and functional properties. But, if fur is addressed as an everyday garment material, when the price of a new fur garment, for most people, must be considered as very high, then it might be of relevance to approach the luxury aspect from a different angle in order for the customers to choose fur over other functional garment options. Here the concepts of service and co-design as luxury could be one approach (Niinimäki & Hassi 2011; Jung & Jin 2014).

An example of this thinking emerged in the study through the case of long-time fur designer at Birger Christensen, Christina Frücklund and her pattern maker sidekick, Karin Køler. When interviewed about their design and making processes, they spoke about the paramount importance of *incorporating the consumers* right from the moment they enter the shop in order for the collaborating couple to make the right product suitable for individual consumer

needs, irrespective of whether the design was made from scratch or remade from the current collection. Practices comprised a silent ‘reading’ of the consumer to identify true garment needs as opposed to prefixed customer ideas, followed by questions about the consumer’s actual practical doings, right down to e.g. whether they are driving a car on a regular basis. Following this procedure, a number of fittings were conducted to secure both fit and function, and lastly services concerning re-making or fully changing the design to suit new circumstances or body dimensions were offered.

All in all, the collaboration between the designer and the garment constructor provided a design setting where the embedded service towards the consumer can be argued as a luxury element that supports consumer satisfaction, safeguards their economic investment and thereby, to some extent, secures product longevity. It is also a bespoke approach to garment making that is rare to find in the current landscape except for tailoring, although there is a growing awareness of the approach from industry as a viable business approach and an alternative to both fast fashion and ready to wear.

Overall finding: Create diversity; design approaches and stories

Recent research into sustainability within fashion and garment design suggests that sustainability, meaning product longevity, can be addressed through a wide range of different design approaches applied together or individually within the design process (e.g. Fletcher 2012; Niinimäki 2013; Chang et al. 2014; Ertekin & Atik 2015, Harper 2015). The identified approaches typically centre on user physicality; user values; level of accessibility; level of complexity; property proximity; flexibility and multifunction; re-design and co-design; fur/user ‘meeting points’; and design stories (see also dialogue card fig. 8). The thinking behind these approaches is based on the observations that diverse design approaches, and hence also design products, enhance the multiplicity of garment types aimed at longevity. Thereby it becomes easier to attract different types of potential consumers, and in this case attract consumers that do not usually see themselves as wearing or buying fur garments. Moreover, in order to attract the new customers, the approaches provide an opportunity to communicate a multiplicity of design stories about fur and thus break down some of the pre-conceptions of both fur products and fur users. An example that emerged in the study in the form of Norwegian designer Kjetil Aas’ menswear design incorporating swakara fur is here used to illustrate this point. Aas’ design approach is based on an interest in actual garments; their history, i.e. origin of details, shape and production, and he therefore centred his research on the parka coat, tracing it back to the Inuit anorak. From a diversity perspective, this approach could attract users who are male and who are similarly interested in garments that offer functional detailing and historical menswear references. This is a different fur user than the traditional upper class woman. Furthermore, the link to indigenous people creates associations to outdoor life, authenticity and a conscious and conscientious use of resources. Yet, the design story on which the design was developed was not used in the PR material. The focus was on portraying the design as a fur product, not a design story where the key issue was to display the fur material and to make a link to the origin of the material, i.e. Namibia.

Lastly, Aas' design was communicated within the same photographic setup as the fellow designer Bjerregård, who had taken a very different approach to the design of the swakara fur. Thus a potential opportunity for communicating diverse stories around the design of fur was missed, which ultimately delimits the range of potential users who can relate to the designs.

Recommendations

- Secure physical time and space within the different collaboration formats for designers, furriers and pattern makers to innovate through a joint design process, and – depending on type and scope – include the production manager and site.
- Engage in and communicate design projects and workshops using second-hand fur and furrier techniques (see also page 40).
- Engage in dialogue with collaborative partners on the idea of luxury as bespoke service design in order to broaden the notion of luxury.
- Fully communicate the diversity of the fur design stories behind the designs developed with collaborative partners, as well as the different embedded sustainable elements.

Suggestions for how to move forward: Design approaches for sustainability; dialogue cards

Through the data, the project has identified a number of design approaches that each in their own way supports the sustainable long-lasting qualities of the fur material. These approaches are the base on which a number of dialogue cards have been developed. The key themes of dialogue are Diversity, User Involvement and Transparency (see fig. 8).



Fig. 8. Example of dialogue card for how to implement sustainable best practices in fur design

Conclusion

The part project has identified four key ways that design can be used to enhance the sustainable potentials in fur products through longevity. These are:

1. The importance of combining knowledge and skill sets in the design process for design innovation.
2. The potential of re-designing and re-using fur in terms of both business and communication.
3. The potential of re-assessing the concept of luxury in relation to fur products, as bespoke service design for useful products.
4. Application of design approaches in support of product longevity and the importance of communicating the stories behind the designs.

The findings point to the design process itself, but they also tie in with overall strategies for business developments, production practices and product communication. The findings are implemented in the dialogue cards, and these may be of use in the day-to-day dealings with collaborating companies and design universities enabling a concrete base from which the notion of sustainability in the design process can be addressed and discussed.

Sub-project IV: Users of Fur

By: Else Skjold

Introduction

This subproject takes its point of departure in the conclusions of the 2012 report *A Comparative Life Cycle Analysis* commissioned by the IFTF. The report suggested that a push for making fur more sustainable must focus on the potentials inherent in the longevity of the material itself. It was also suggested that a) a longer use phase (i.e. from 30 years in use in average to 36 years or more), and b) more re-use (from 10% to 20% or more) is likely to lessen the negative environmental footprint of fur (DSS 2012:12). It will be interesting to see what actually happens with fur in the use phase, and how user experiences with fur might reveal barriers and pathways for creating a longer life cycle for fur. Thus this project connects to debates taking place between scholars of fashion and dress, and within the fashion industry at large which focus on user experience as a key to developing new and 'green' business models that are primarily driven by services around the product to create so-called 'design for longevity', or to design for disassembly or re-design.

Project description

The overall aim of this sub-project has been to look at the way fur as material interplays with general structural currents within society that affect the way garments are perceived, produced and used today, in particular, the way in which the fur industry represents values inherent in the idea of 'slow fashion', such as long-lasting design, high level of craftsmanship, resource efficiency and slow production cycles, and how this is mirrored in the way fur garments are being perceived and used by individuals. As exemplary cases the subproject presents three pilot studies that revolve around these overall issues in various ways:

Interviews with people about inherited fur

- *Why do people store inherited fur and how do they transform 'old' fur design into garments that correspond with contemporary taste preferences and dress practices?*

This study highlights the longevity of fur, as some of the fur garments in the study are more than 60 years old and still in use.

Manufacturing, retail and use of fur in China:

- *What might the Western fashion system in general, and the fur industry in particular, learn from Chinese manufacturers and consumers?*

The focus is on Chinese consumers of fur who are found to be very conscious of quality and on Chinese fur manufacturers and retailers who support design for longevity through e.g. user understanding and services for maintenance, repair or re-design.

Fur and menswear

- *Why is there hardly any focus on menswear in the fur industry today, and how might menswear design push for a longer life cycle of fur?*

This project focuses on the inherently 'slow' production and use patterns within the menswear tradition and amongst male consumers and suggests ways of pushing design for longevity by making fur design more attractive and familiar to men in general.

Process and method

The project has been conducted in a rolling, elaborative process. From August to October 2014, a preliminary literature research was conducted with the aim of better understanding the way in which the role of fur has changed throughout Western history, mainly focusing on the period from the 14th century onwards when the Western fashion system developed. This included literature and reports on sustainability in the garment sector, the cultural history and politics of fur, the development and significance of the fur industry in Denmark (and abroad), and recent reports on issues of fur and sustainability.

From November 2014, a search for informants for the project on inherited fur was conducted with the aid of snowballing on social media. Eleven women aged 25-45 replied of which five were selected on the basis of accessibility and the time frame of the project. No men replied, even though the search was repeated several times with a particular request for finding male informants. The semi-structured interviews were conducted on the basis of the so-called 'wardrobe method' (Skjold 2014) in which informants are interviewed in their private homes with access to the actual garments stored there. In the interviews, emphasis was put on the way the fur garments connected the informants with their family history and thus played a part in their identity work. A particular focus was on the way the dress practice of the original owner of the fur garment had been moderated through e.g. styling or re-design by the informants to make it correlate with their own stylistic preferences, body build and idea of self. An overall approach was to investigate so-called 'emotional values' (Bang 2010), addressing sensory experiences as well as ethical or moral sensations or ideals that each informant might have in relation to fur. In order to understand these interviews in a larger

context, supporting interviews were conducted with Danish furrier Pia Christensen, Henrik Spandet-Møller, CEO International for Birger Christensen, and journalists Niels Pedersen (Danish newspaper Politiken) and Rikke Agnete Dam (Danish newspaper Børsen).

From February 25 to March 6, 2015, wa travel was conducted to China together with Kopenhagen Fur employees from Copenhagen and Beijing to the following destinations: Hong Kong International Fur and Fashion Fair 2015 (HKIFF) and the cities of Yuyao and Harbin. Here five semi-structured interviews were conducted with key individuals from Kopenhagen Fur and their collaborating partners. The interviews were supported by observations made on logbook, photo documentation, informal conversations with participants at the fur fair, as well as staff, manufacturers and retailers at the fur markets of Yuyao and Harbin. The overall aim of this study was to try to locate barriers and pathways for working strategically with fur and sustainability in China.

Furthermore, a logbook was kept during the whole project thus documenting observations from the physical presence at the office at KiCK in the period from August 2014 to August 2015 which included participation in weekly staff meetings, small workshop talks with various departments at KiCK and in Glostrup, lectures on the projects presented informally and discussed with selected staff members, phone conversations, correspondence via e-mail, and informal conversations with staff members located primarily at KiCK and at the departments for marketing and communication at Glostrup.

The project on menswear was carried out on the basis of the above observations, discussions, travels, literature readings and interviews supported by earlier work on fashion and masculinity (Skjold 2014).

Findings

Interviews with people about inherited fur

In the small pilot study the overall perception of the informants was that the fur garments they had inherited carried positive values at several levels. Firstly, they evoked a feeling of family coherence and connection where the presence of the original owner of the fur garment was felt through the sensory experience (smell, touch, sound) of the fur skin itself (remembering how it was to e.g. sit next to grandmother wearing it, walking with their mother wearing it etc.). Secondly, fur garments were associated with a high level of craftsmanship. This came out as often the inherited fur garment had been handed down together with other types of garment such as dresses, shirts, etc. (see fig. 9-11). Informants generally expressed that such high levels of craftsmanship is hard to find in contemporary garments, which is why they value it more and take extra care of it when it comes to e.g. storage and maintenance.



Fig. 9. E's grandmother from whom she inherited her fur. Her grandmother was petite and with a refined taste. The fur coat was a present from her husband that due to its high price verified the high position of the couple in the local community.



Fig. 10. E herself is quite tall, and felt the original coat was like a doll's coat, which she could not fit at all. Therefore, she had a tailor make her a new coat. A Russian-inspired, woollen coat with a huge fur collar, and with removable cuffs that protect the coat from being worn out. When she talks about it, she fetches other garments that she inherited, expressing how the fur coat and these garments represent a level of quality and craftsmanship that she would never be able to find or afford today.



Fig. 11. E has saved the leftover fur in a plastic bag. She is not aware that this might not be the best way to store it. Still she considers it to be valuable and does not consider discarding it.

Manufacturing, retail and use of fur in China

Generally, the fur industry in China – as observed at HKIFF 2015 – seems to be operating in line with the Western fashion industry around the 1950-1960s; it is very protective of new techniques and styles; there is a high level of product development; garments are designed for longevity, and there is a high level of resource efficiency (minimum waste of material in the process). However, an overall finding is that the Chinese garment sector these years is developing from a production industry towards a creative industry, imitating the development taking place between the 1960s and 1990s in the respective Western garment sector (Ling 2010). This means that Chinese manufacturers, as it was observed in the city of Yuyao, are increasingly interested in profiling their products on design and fashion rather than on craftsmanship and manufacture. As was observed in Yuyao and Harbin, Chinese retailers also seek to profile themselves by entering the logics of the experience economy (Pine and Gilmore 1998) through e.g. creating concept stores, playgrounds for children, runways that present new collections, restaurants, or even museums in their retail space to entertain and attract customers. This development displays little awareness of the way current practices might be re-considered in light of the sustainable agenda, and there is reason to be concerned about how the fur industry might 'blindly' follow along the fashion industry – an industry currently undergoing structural changes in order to respond to the sustainable agenda. Still, what could also be observed was how Chinese fur consumers in general are highly aware of good quality skins and are willing to pay extra for these. Furthermore they are accustomed to services provided by retailers such as maintenance, repair and re-design of fur garments in the so-called 'service centres' (see fig. 12).



Fig. 12. A service centre placed on the 1st floor of a large fur retailer in the city of Harbin managed by Ms. Lillian Sun Lixin, who is also the general secretary of Hei Long Jiang Fur Association. The centre, which is relatively active, maintains, repairs, and re-designs fur garments for customers.

At the same time, the rise of a younger, well-educated and Western-oriented middle class in China is having an effect on the perception, until now, of fur skins as something positive. Ethical and environmental concerns around current industry and consumer logics are rising (Ngai and Cho 2012) with a negative spillover effect on the fur industry, thus paving the way for the arguments of the anti-fur movement.

- *Why is there hardly any focus on menswear in the fur industry today and how might menswear design push for a longer life cycle of fur?*

When looking back at the cultural history of fur garments, it has been widely associated with ideas of masculinity. Kings and warriors as well as indigenous people of the Arctic and beyond have worn fur and have been represented wearing fur within the arts as well as contemporary media (Bolton 2005).

However, through the emergence of Haute Couture in 19th century France and celebrity culture from the 1930s and onwards, fur garments have become increasingly associated with

womenswear and ideas of femininity (Emberly 1998) and hence also with seasonal changes and rapid turnovers that are typical for the fashion industry and not in accordance with the sustainable agenda. As the fur industry has focused even more on 'fur fashion' within the last 10-20 years this development has only increased.

In contrast, the inherent values of menswear as "non-fashion" makes it operate more slowly, which is also reflected in the way men are culturally socialized to acquire and use garments at a much slower pace than women. In fact, the values of menswear, which represent style rather than fashion, craftsmanship and tailoring rather than looks, seem to correspond better with the longevity of fur, the craftsmanship of furriers and the focus on product development in the fur industry in general.

Conclusion and further recommendations

On the basis of these findings, the sub-project on Use of Fur leads to the following conclusions and reflections:

1) Learning from user experience can generate new perspectives on how to work strategically with design in the fur industry with the aim of promoting more sustainably produced garments and more sustainable consumer practices, perspectives which are connected with:

- A high level of craftsmanship (represented in the furrier profession) which seems to give fur garments a particularly high status in the wardrobes of the interviewed informants.
- A high level of consumer awareness about quality that could well be augmented to include awareness about animal welfare, material processes and manufacture.
- Already existing business models for service design that sustain the longevity of fur as material through maintenance, repair or re-design, which could well be further developed and promoted in China and then exported back to the Western market.

2) Learning from existing practices in China can generate new perspectives on how to re-think the position of fur – a position that points away from fashion's focus on standardisation and rapid turnovers and toward long-lasting design that might be adapted to the individual user over time through re-design services. By focusing on a high level of design that connects with user experience rather than fashion trends and ideals, fur design has the potential of positioning itself as a benchmark for sustainable design practices (see also Sub-project III).

3) Promoting ways in which design of fur might connect better to the 'slower' values of menswear through connecting to generic masculine design features, thus making fur more attractive and familiar to male consumers.

Re-Furbish

Re-Furbish was an educational project conducted in collaboration with six graduate fashion design students within a six-week period in the autumn of 2015 with emphasis on the potentials of recycled fur. The project took place within a longer, more generic course for graduate fashion and textile design students serving as a preparation course for their graduation projects. Re-Furbish was introduced as a shorter and optional course that served to explore facets of sustainable thinking using recycled fur as a shared framing. With keywords from sustainable fashion theory such as ‘slow design’, ‘user involvement and co-creation’ and ‘adaptability and transformability’, students were asked to develop their takes on what sustainable fur can be.

The focus point of the project was fur garments from the exhibition ‘Liv og Død’ (Life and Death), which closed down in February 2015. The exhibition put emphasis on fur as a diverse material, as a cultural means and as a trade field. After the exhibition a large amount of old fur garments of various types was donated to Design School Kolding to be archived and used in research and teaching.

Student projects

The Hidden Fur

The project explored fur in relation to menswear with a focus on using fur’s sensory and visual properties in new ways. Fur was incorporated into pockets as a hidden feature, as well as covered with semi-transparent layers of material. Overall, fur was used together with recycled down for padded coats.

Fur as a Composition Element

The project explored fur as a composition element when designing textiles for fashion garments. As such it used fur as a way of adding texture and movement into mixed material compositions, in particular for knitwear. Thus fur was investigated within a material collage design approach.

Directions in Shape and Texture

Set within a classic silhouette the project explored the design potential of working with fur's natural hair directions. It focused on design development through an experimental approach to directions in order to obtain surprising surface patterns and implement light and shadow effects.

Flexible Outerwear

Through an interest in form flexibility and garment adaptability, this project explored new ways of understanding the idea of outerwear functionality and aesthetics. The recycled fur was shaved in order to obtain softness and change of visual surface, after which it was made into interchangeable garment elements. The focus was to provide users with possibilities for change with regard to form, gender and overall look.

Fur as an Everyday Material

This project addressed the notion of fur with an aim to 'de-luxurise' the material by incorporating it into a design process as a generic material. With inspiration from work wear, the project aimed at a normalization of the fur material by creating contexts different from the stereotypical upper-class woman. Statement words were implemented in the form of machine embroidery embedded in the fur hair.

Changes in Surfaces

The last project investigated the recycled fur from a material design perspective. The fur was used alongside a number of other materials and assembled through various craft techniques. Through a bricolage approach, the outcome was an archive of material design samples meant for fashion with a focus on creating interesting 'spatial' surfaces through material and technical encounters.

Challenges

During the project process and at the final presentation a number of challenges regarding working with recycled fur surfaced:

Material

The donated furs used in the project varied in age and condition. The students experienced problems with skin brittleness, lack of flexibility and hairs falling off. Furthermore, the many seams used in many furs challenged the new constructions. Lastly, the old furs contained high levels of dust, which together with the loose hair provoked allergy in a student. Lastly, the smell of the furs became an issue in some cases.

Design potential

With regard to design potential challenges, three issues became central. Firstly, the students expressed concern whether their design would prevent the material from being re-used again in the future, and thereby unintentionally halt the process of prolonging material lifetime. Secondly, the students engaged in understanding how and if the use of furs can be modernized through the shape. Lastly, the students wished to know where they could go and learn the proper techniques once they left school (see fig. 13).



Fig. 13. The Re-Furbish student projects. From the upper left: The Hidden Fur, Fur as a Composition Element and Directions in Shape and Texture. Upper right: Flexible Outerwear, Fur as an Everyday Material and Changes in Surfaces.

Values

Several of the students experienced criticism from the surrounding society (family and friends) regarding their choice of working with fur, regardless of the fur being recycled, and thus giving new value to an otherwise discarded material. The criticism reflects not only a common reaction that designers must anticipate when working with fur, but also, to some extent, the students' own ambiguous feelings about working with fur. The students stated that a clear and transparent link to the origin of the involved furs could help overcome ethical qualms.

Potentials

In addition to design challenges the project outcome and process point to some main potentials regarding the use of recycled fur in garment design.

Recycled fur

Overall, the students explained that the reason for participating was that the fur was recycled. In this respect, the recycled – and thus more sustainable – aspect compensated for ethical concerns, concerns that had previously prevented the students from choosing fur as a garment material. Working with recycled fur could be seen as a way to potentially engage a different group of designers and consequently a different group of consumers. Furthermore, recycled fur is a far more economically available material than new fur. The students expressed fewer inhibitions with regard to experimentation and 1:1 prototype developments in the real material. Lastly, the designers saw the recycled furs as an interesting creative design constraint (compared to new fur).

Fur in general

In general, the students expressed that the recycled fur had provided them with the opportunity to explore fur as a material. They found that fur can provide an extra dimension to a design, due to its visual and sensory properties and thereby a good supplement to constructed materials. They also found that the properties of the fur material provides an expression in itself and ‘you do not have to do much’ to it. Moreover, the students pointed to the fact that fur represents the ‘soft’ element in a design, while at the same time being a dense and durable material that tolerates a lot with regard to processing.

Design Workshops

Processing the project together with Copenhagen Fur

During the project, four workshops were conducted where employees from Copenhagen Fur took part in processing the findings of the research team. The format of these workshops derives from Design School Kolding's nearly 10 years' of experience in working with collaborative partners through design. The actual format and content of the project workshops was managed by Head of Research, Irene Alma Lønne, the person with overall responsibility for the partnership project, who also holds a PhD in design management (Lønne 2009). These types of design workshops have been developed alongside the emergence of new, innovative formats for working together with users and stakeholders within the design community at large. At Design School Kolding these formats have been applied in larger collaborative partnership programmes with external partners, as well as collaborative projects with a number of small and medium-sized companies.

To work with partners in design workshops is to invite new knowledge based on already existing experience and practices of the exterior partner, as well as up-to-date, research-based knowledge about e.g. *sustainability*, *play and design*, or *welfare and well-being*, the three strategic focus areas of the school. The output of these workshops is new knowledge for the exterior partner on many levels:

- Knowledge about (lack of) coherence within the company in relation to e.g. communication across units (focus on values and practices)
- Knowledge about product development and product range in relation to consumer needs and desires – now and in the future
- Knowledge about user experience of existing services or products
- Knowledge about sales platforms and business models – what works, what might be improved
- Knowledge about overall, future strategic positioning and development

In this context it is important to emphasise that the focus of such workshops is not a fixed solution. Rather, the workshops form a tool that generates reflection and new input. Also, it is

important to note that the output is disseminated not only in peer-reviewed research material (and thereby in research environments all over the world), but also in the teaching of design students at the school as well as in other collaborative projects with companies and organizations. As in this project with Kopenhagen Fur, it is not uncommon that students take part in the development work in a collaborative project. The workshops helped bridge the gap between the research team and the various units at Kopenhagen Fur. The project accumulated shared new knowledge and reflections in the research group as well as in the various participating units of Kopenhagen Fur.

Four design workshops took place during the project:

- In September 2014 the first workshop took place with a focus on presenting preliminary findings and literature studies from sub-project IV that could frame the project, and on actively engaging Kopenhagen Fur employees in the research project. This was done with the aim of matching expectations, of communicating the framework and aims of the project, and on implementing feedback, experiences and ideas from employees.
- In May 2015 a second workshop was held with a focus on presenting preliminary findings of sub-projects I+III, and on discussing, together with Kopenhagen Fur employees, how to understand the findings of the research project in relation to the theme *future markets* and *future users*.
- In November 2015 a third workshop took place with a focus on presenting findings of sub-project II and the 'Re-Furbish' project, as well as discussing, together with Kopenhagen Fur employees, how the findings of the research project could be incorporated into various strategic levels of the company's activities in relation to the theme *brand identity*.
- In March 2016 the findings, recommendations and conclusions of the project were presented at an event at the Danish Parliament, in conjunction with Danish trade organization Danish Fashion & Textile. The event had a broad focus on barriers and potentials of implementing sustainable practices in the garment sector at large.

Preliminary research and shared expectations

The first workshop marked the kick-off of the research project for Kopenhagen Fur employees. Based on the pitch from each of the four researchers, the participants were divided into four groups. The exercise was for the employees to give feedback to the research team with regard to immediate reactions to the project, how the proposed four sub-projects made sense in their daily work, and whether or not they had suggestions for adjustments in focus, sample or scope. Also, the workshop had the purpose of matching expectations and of clarifying the knowledge and practices concerning issues of fur and sustainability in the involved departments of the company. As a result, minor changes were made to the sub-projects based on employee requests and input. It became clear that the awareness of fur and sustainability was relatively low, whereas the need for more information and communication

tools for stakeholders and collaborating partners when it comes to fur and sustainability was relatively high.

Future markets and future users

The second workshop was conducted as a two-phase brainstorming exercise.

Exercise one was first to define a future market, and brainstorm on the various parameters affecting this market. For example, one group chose 'new old markets' with the case of Japan and discussed various cultural and socio-economic parameters which might affect barriers or potentials in relation to fur. Secondly, a future user from this market was identified. In the case with 'new old markets (Japan)', a man or woman at the age of 40+ years old was decided upon as interesting. Again, barriers and potentials for this consumer type were discussed in relation to fur. In this exercise, parameters relating to sustainability came up in all groups such as e.g. *need for transparency*, *less is more*, *CSR*, etc. But also a long line of other parameters was discussed which helped establish a shared focus.

Exercise two was to make a *future scenario* for the future user decided upon in exercise one. Here, a timeline exercise was made that helped define the potential values, ideals and buying patterns of the user in question. In the exercise, each group was asked to take its chosen user type 20 years back, and 20 years forward in time. In the exercise participants were asked to brainstorm on the values, life situation, dreams and aspirations, buying patterns, family situation, etc. of the user in question (see fig. 14). Sustainability was put in play as a parameter increasingly affecting individual user types in relation to fur, alongside other parameters that might affect their behaviour, life choices and consumer patterns.

Altogether, workshop number two helped Copenhagen Fur employees to link the findings of the research team to future strategies in relation to actual markets and consumer groups. It also taught the research team about the existing practices and experiences of the company in relation to issues of fur and sustainability.



Fig. 14. Workshop number two held at the premises of KiCK in Fredericiagade in Copenhagen.

Brand identity

The overall focus of design workshop number three was to accumulate shared visions for the future of fur as seen through a sustainable perspective; the Re-Furbish project was also presented to the participants (see fig. 15). The research team again facilitated a two-phase workshop with the aim of accumulating shared knowledge of the values, practices and future strategies of Kopenhagen Fur.

Exercise one was carried out on the basis of the concepts *front end* and *back end*. Participants were asked to brainstorm on these concepts and together define how they perceive them.

- In the *back end* exercise the participants were asked to define the core services and products of the company and list them in order of importance. In the three groups, the intersorting system at Glostrup was considered important by all groups, while the more creative design activities of KiCK were considered less important. Other things that were mentioned were the high quality of the skin, farming, development and marketing.
- In the *front end* exercise the participants were asked to define how they want the outside world to perceive Kopenhagen Fur as a company. Again they were asked to define various key values, products or services they found were important and to indicate which one was the most important. Group 1 mentioned sustainability and longevity as their priority; group 2 felt that product and auction house were the most important, while group 3 believed that creativity and craftsmanship of the fur garments are as essential as earning and volume, intersorting and farming and the services of the auction house.

Altogether this exercise showed how Copenhagen Fur's employees define themselves primarily as suppliers of a raw material of high quality, whereas more overall communicative aspects are generally less important to them.

Exercise two was carried out to further develop on the concept of *front end*, in a two-phase exercise:

- In the first exercise, the participants were asked to define the brand structure of Copenhagen Fur through a visual diagram. Here the overall finding was that none of the groups were in agreement with each other, and that none of the groups perceived Copenhagen Fur as a unified brand, but more as a sub-divided brand with several parallel activities.
- In the second exercise, the participants were asked to define the *unique selling proposition* of Copenhagen Fur, what makes the company unique in relation to competitors. Here participants mentioned knowledge-sharing, high quality of skins, focus on animal welfare and innovation. Only one group mentioned design and branding.

Again, employees repeated that they perceive the company mainly as a raw material supplier with various promotional side activities, rather than a brand that has an overall message and vision of its product.



Fig. 15. Ulla Ræbild presents the Re-Furbish project at Workshop 3 held at the premises of 'Kaleidoscope'.

Conclusion of workshops

As an overall conclusion of these workshop activities, the research project suggests a more coherent focus on activities in general, potentially carried out through various initiatives centred on issues of fur and sustainability.

Based on the input from workshop number three by Henrik Spandet-Møller, CEO International of Danish furrier house Birger Christensen, together with research on design management (Skjold and Lønne 2016), the project suggests looking at the strategy towards a more sustainable fur sector as seen in the model below:

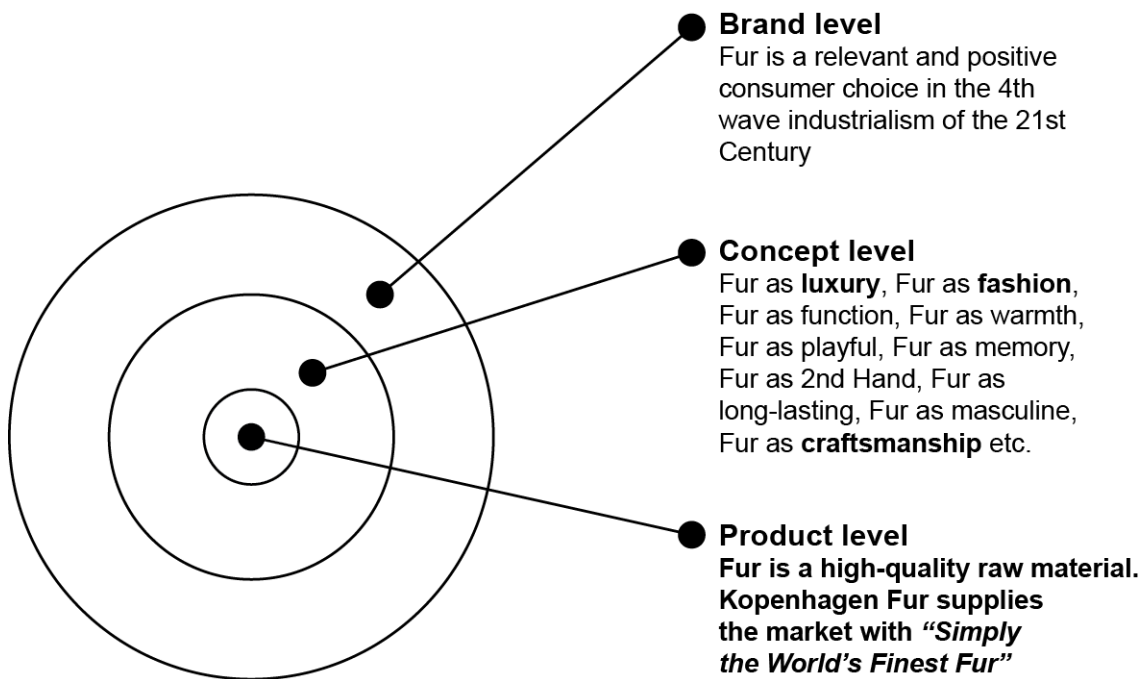


Fig. 16. The suggested brand strategies of Copenhagen Fur. Current focus areas are highlighted in bold, recommended focus areas are not.

The model (see fig. 16) illustrates that presently the focus of Copenhagen Fur (and the fur sector in general) is primarily on the product level (which has resulted in e.g. the present marketing slogan of Copenhagen Fur). At the concept level a very limited range of the potential types of 'design language' are applied (only the ones marked with bold), whereas in general Copenhagen Fur, as well as other agencies within the fur sector, are largely not operating at brand level (mission and vision of the brand). This was illustrated throughout the workshops, as well as in the observations made by the research team across all four sub-findings.

Conclusions and Recommendations

Overall findings

Building on the findings of this research project there is reason to believe that more knowledge about how to work strategically with design might be a key to operationalize fur and sustainability through various coordinated activities together with already existing stakeholders such as furriers, manufacturers, designer brands, retailers and trade organizations. For this to succeed, the project points to a list of barriers and recommendations.

Barriers for fur and sustainability

An overall finding is the discrepancy between inherent values and practices in the fur industry and in the fashion industry. The fashion industry has rapid, seasonal changes, a focus on the young, ideal-looking and trend-setting demographic and short production cycles based on standardized mass production. The fur industry on the other hand carries inherent values of the furrier trade such as a high level of craftsmanship; focus on product development with regard to so-called 'fur fabric'; a slow production cycle (only one season per year), and resource efficiency. Still, even if the garment sector at large is starting to demand these exact values, the fur industry seems altogether fixated on developing 'fur fashion' as their strategy, without considering the fact that they might be getting rid of know-how and skills that are in demand and could potentially revitalize the whole fur sector.

In relation to Sub-project I, how fur design generally limits its 'design language' to the cultural history of the 20th century is seen as a barrier to sustainability. This is due to the fact that most often (as illustrated in fig. 15) fur design refers to ideas of *luxury*, *fashion* or *craftsmanship*. However, it might be better to refer to types of 'design language' that carry with them other kinds of values, and which refer back to the cultural history of fur prior to

industrialism. It is surprising how the long relationship between humans and animals, as reflected in e.g. Inuit culture, is hardly referred to at all, even though the 'design language' of e.g. Inuit fur garments points to values and practices much more compatible with sustainability (i.e. resource management, high level of craftsmanship, respect for nature and animals, and so forth). Another barrier is that the 'design language' of contemporary fur design generally does not connect well with users' personal-cultural memories.

In relation to Sub-project II fur design's apparent move away from its know-how and practices of user-closeness, craftsmanship and service systems acts as a barrier for sustainability. In general, fur design processes are moving towards standardisation, mass production and rapid change as seen in the fashion industry, even though these practices seem ill-fitted to the exclusivity of the material. Altogether, the Sub-project identified a lack of recognition of the interplay between furriers, designers and cutters which seems to have built the success of fur garments rather than focusing on 'fur fabric' and 'fur fashion'. As in Sub-project I, this project also identified that a very limited 'design language' is used that most often relates exclusively to ideas of the 20th century's glamour and femininity, making fur design attractive to a particular type of consumers interested in fashion trends, whereas other types of consumers are considered inferior. Lastly it is pointed out that fur design at Copenhagen Fur is promoted as 'fur fabric' and 'fur fashion' with a focus on technique and skin quality, rather than being promoted as an imagery that holds meaning and storytelling.

In relation to Sub-project III material processes at present are rather non-transparent for consumers and stakeholders, which is seen as a barrier. Already existing best practices of e.g. dyeing and dressing are not communicated, as this level in the life cycle of the fur skin is considered out of the hands of Copenhagen Fur. This is also seen as a barrier, as demands for transparency at this level are increasing, and as there are no communicative tools at present that might help disseminate more sustainable practices of handling and processing of raw skins.

In relation to Sub-project IV another barrier is the move towards 'fur fashion' within the last few decades which has limited the potential for promoting sustainable consumer practices related to fur design – even though such practices can be observed to exist amongst the consumers represented in the study. Firstly, actual user experiences of inherited fur are not included in the creative development work of Copenhagen Fur. Secondly, male consumers are largely ignored as the 'design language' of fur is not appealing to them. Thirdly, the activities in China are focused on the development of 'fur fashion', while the existing and thriving service design system for fur seems to be underdeveloped, even though it carries great potential for promoting fur design as a benchmark for sustainability.

In relation to the findings of the workshops, the fact that there is no overall strategic vision for the role of fur as material in the 21st century is seen as a barrier. A tight focus on the activities of farming, intersorting and auctioning stands as a barrier for a much more overall vision about what fur might represent and mean in the future and how sustainability might be

implemented throughout the whole value chain of fur. Currently design is perceived as a mere creative add-on, whereas it bears the potential of being key to defining a new role of fur in the future, which is potentially highly compatible with issues of sustainability.

Recommendations for how to move forward

Summing up the recommendations of the four sub-projects, the Re-Furbish project, and the output of the design workshops, a series of suggestions for future activities is listed below.

- On the basis of Sub-project I it is recommended that Copenhagen Fur starts engaging in the cultural history of fur beyond the 20th century's focus on celebrity culture, femininity and traditional industrialism, turning their focus instead towards practices of fur that are more sustainable.
- On the basis of Sub-project II it is recommended that Copenhagen Fur becomes increasingly aware of and communicate which parts of the fur product life cycle it takes responsibility for, also those outside the scope of Copenhagen Fur's organization, in order to provide a transparent overview of the life cycle.
- On the basis of Sub-project III it is recommended that Copenhagen Fur's creative design activities engage in the identified design approaches that each in their way support the sustainable long-lasting qualities of the fur material. These approaches take their point of departure in issues of diversity, user-involvement and transparency.
- On the basis of Sub-project IV it is recommended that the company explore existing practices in China which bear the potential of re-thinking the position of fur. This position points away from fashion's focus on standardisation and rapid turnovers, and towards long-lasting design that might be adapted to the individual user over time through re-design services, taking user experiences of a more diverse consumer group into consideration. Also, it is recommended that Copenhagen Fur connect with the 'slow' pace of menswear by engaging more forcefully with a 'design language' that is appealing to male consumers (such as e.g. outerwear).
- On the basis of the Re-Furbish project it is recommended that the company explore how recycled fur could be seen as a way to potentially engage a different group of designers and consequently a different group of consumers, since it was observed that recycled fur compensated for ethical concerns and was perceived as a more sustainable choice. Furthermore, recycled fur is a far more economically available material than new fur, which has been noted to liberate designers from inhibitions with regard to experimentation.
- On the basis of the design workshops it is recommended that Copenhagen Fur starts moving away from a singular focus on the quality of the skins (product level) and an add-on creative design strategy focused on fashion (concept level), and instead makes use of design as a strategy to position fur in the sustainable agenda of the 21st century (brand level).

Perspectives

Phase 1

Currently there seems to be a conflict between the communicative activities at Kopenhagen Fur on farming and animal welfare on one side and the creative design strategy on the other. While a great effort is being made to improve standards of farming issues through various research programmes the promotion of fur through creative design strategies points backwards in time, largely due to the fact that only a limited range of 'design language' is applied. At the same time the efforts actually made in relation to sustainability are not very clearly communicated to stakeholders and consumers. This might be done through method cards that break down highly complex issues into defined, smaller units of information, which makes it easier for stakeholders and consumers to make informed choices.

Phase 2

Currently the general impression of fur skins provided by Kopenhagen Fur is that fur is a refined and luxurious material, and the company is not very keen on the idea of circular or take-back design programmes as they want to sell raw skins. However, such activities would promote the longevity of the material of fur. Failing to engage with such activities prevents Kopenhagen Fur from positioning fur at the frontier of the sustainable agenda and goes against the general recommendations from the fur industry itself.

Phase 3

Currently, a quite limited range of 'design language' is applied in the creative design strategy of Kopenhagen Fur. Through diversity and user understanding, and through (re-) developing a tight connection between design, furrier technique and cutting, it would be possible to move fur forward to hold a unique position as a benchmark for sustainability that 'talks back' to the fashion industry.

The Future of Fur

Currently fur is placed very centrally in the moral debates on sustainability, as fur farming highlights the environmental and moral concerns of the 21st century. But the practices around fur can be seen as sustainable, whether one perceives fur farming – or even making use of fur in garments – as morally acceptable or not. If the fur industry is to survive it needs to connect with the debates taking place about sustainability within the garment sector at large and to define its own unique position for the future.

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