

Indigenous Arctic Fish skin clothing traditions: Cultural and ecological impacts on Fashion Higher Education.

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Abstract

The use of fish skin is an ancient tradition in societies along rivers and coasts around the world and there is evidence of fish skin leather production in Scandinavia, Alaska, Hokkaido, Japan, northeast China and Siberia.

For Arctic indigenous people, their relationship with fish plays an important role in maintaining their identities creating important ties with the environment. The Arctic is undergoing dramatic climate changes threatening indigenous people, impacting their food security and traditional knowledge systems as they rely on fishing activities for their physical, cultural and spiritual well-being.

This research looks at how the use of fish skin by aboriginal Arctic people has recently been assimilated as an innovative sustainable material for fashion due to their low environmental impact. Fish skins are sourced from the food industry, using waste, applying the principle of circular economy.

This paper describes the Fish skin workshop delivered at the world's biggest fish skin tannery: Atlantic Leather in Iceland, where an experienced Swedish craftsperson passed down the endangered Arctic fish skin craft to the next generation of Nordic students from universities in the circumpolar area (Iceland, Denmark, Sweden, Finland) and UK as part of a sustainable fashion higher education program. The methods of sustainable material engagement and the full immersive experience through a teaching-in-the field approach are

recommended as transferable skills for educational models. The workshop demonstrates how relevant the Indigenous fishskin knowledge -in partnership with sustainable design strategies- can connect people to their culture, communities and the environment.

Author keywords

Indigenous peoples of the Arctic; Fish skin craft; Traditional Knowledge; Food Industry By-Product; Fashion education for sustainability.

Introduction

The research is investigated through author 1 and 2 current practices as educators, supporting fashion design students to engage in sustainability facilitating the use of fish skin as an alternative raw material for fashion.

This research is an interdisciplinary study of northern indigenous Arctic fish skin heritage, building connections between anthropology, ethnography and environmental protection to address current global issues of fashion sustainability at a time when the changing Arctic environment and its wider impacts are receiving widespread attention.

The aim of the project is the preservation and dissemination of cultural heritage connected with fish skin taking into consideration the sustainable limits of the planet's natural resources.

Main research questions

How can we protect sustainable development of cultural heritage connected with fish skin?

How can we assist fashion students and educators in developing sustainable fish skin material by sharing traditional crafts from Arctic indigenous people?

Contribution to knowledge

The project addresses gaps in knowledge in the fields of:

Intangible cultural heritage preservation connected with fish skin.

Sustainable design education, inspiring students to develop environmentally responsible new processes for fish skin to advance material innovation.

New participatory design practices with craftspeople.

Because fish skin craft is not an aspect of Arctic culture that is commonly studied, this research attempts to fill a gap in the literature of the Arctic indigenous communities and will call for further research on the topic of Arctic crafts, Arctic ethnic identities and their representation in society today.

Aims

Blend the highly qualified skills of the fish skin craftspeople with cutting-edge sustainable design education.

Map existing traditional knowledge of fish skin processing.

Take students out of the classroom and into nature contributing to the learning experience about sustainability to change students' mind sets.

Identify tools about best practice on fish skin craft and test the ideas at Fashion Higher Education institutions.

Objectives

Position fish skin craft to exemplify best practice in the field of fashion design higher education.

Promote living with environmental change, using fish skin leather as a by-product of the food industry to reduce waste and to change consumer behaviours.

Community Resilience: Develop case studies working across indigenous communities with historical use of fish skin to foster narratives of social sustainability.

Implement a material-based design methodology for creating new crafting procedures for fish skin leather.

Background

UAL

UAL is Europe's largest specialist arts and design University, with more than 3,000 academic, research and technical staff and about 19,000 students from more than 100 countries. UAL is actively engaged in research and innovation as well as artistic, cultural and education projects and its overall quality profile placed it in the top 25 of UK Universities. UAL has been a pioneer in the development of practice-based and practice-led research in creative fields. Elisa Palomino is the BA Fashion Print pathway leader at Central Saint Martins and researcher at the Textile Future Research Centre (TFRC). She has experience of running successful network projects (e.g. EU Horizon 2020-MSCA-RISE FISHSkin 823943. FISHSkin a Sustainable Raw Material; EU COSME WORTH project: Fish leather in the Luxury Industry, Recipient of Fulbright Scholar Award: 'Arctic Fishskin clothing traditions' at the Smithsonian Institute)

IUA

Iceland University of the Arts is a self-governing institution providing higher education in fine arts, theatre, dance, music, design, architecture, and art education.

IUA combines Iceland's long tradition for sustainability with the aesthetics of Nordic design. The University is a member of the Arctic Sustainable Arts and Design network consisting of art and design art education universities in the circumpolar area. (Canada, Iceland, Norway, Sweden and Russia).

Katrín María Káradóttir has extensive experience using unconventional textiles, she is a slow fashion pioneer in Iceland and is interested in building new systems focusing on sustainability, low environmental impact, thinking about the origins and end-point of textiles. She is a partner of the consortium EU Horizon 2020-MSCA-RISE FISHSkin 823943. FISHSkin a Sustainable Raw Material.

Lotta Rhame

Lotta Rhame is a Swedish craftsperson who has been working with traditional tanning and processing since 1982. She has lectured and led many workshops throughout the Arctic region. Much of her knowledge comes from visiting cultures where skins are still cured using traditional methods: the Inuit's in Greenland and Canada, the Native Americans and the Sami in Scandinavia as well as by studying archaeological sources and experimenting with them to adapt recipes. Most of these ethnic minorities have lost the traditional skills of tanning fish skin, but they have passed down to her the oral history inherited by their ancestors. She has retaught a number of Sami communities the lost craft and they are now able to transfer the acquired knowledge so the tradition stays alive. She regularly holds traditional fish skin tanning courses and lectures worldwide.

Joseph Boon

Studying fashion at Central St. Martins, Joseph Boon made his final collection out of fish skin that he hand-tanned from Billingsgate fish market. Working with fish skin for over three years, he has been to and met some of the world's most recognised fish skin leather producers in Iceland, Japan and China.

Historical context

According to Rahme (2012), making leather from fish skin is an age-old craft historically used by many societies along rivers and coasts around the world. Jiao (2012), describes that before synthetic fibres were invented, people clothed themselves with natural materials available in their surroundings such as fish skin. The shortage of raw materials and omnipresence of modernity have challenged the preservation of the fish skin craft. Better access to the modern world meant that Arctic people were able to access textiles like cotton and silk to create their clothing, leaving fewer people to develop the traditional fish skin craft and there are currently only a few people left who know how to create these fish skin garments.

Environmental context

Protecting natural and cultural resources

Yoshitaka (2017) argues that the relationship with the sea plays an important role in maintaining the identities of Arctic coastal indigenous peoples as distinct cultures but climate change is threatening their ties to oceans and marine resources around the world.

Preserving fish skin traditional knowledge is essential to the Arctic world. This paper seeks to draw attention to the vital importance of traditional fish skin craft to the Arctic people as a basis for their culture and a component of their identities and to encourage their artisans to re-introduce the skills used by their ancestors, making a tool for community development.

Fish waste: Use of fish by-products by the fashion industry.

The use of fish skin by aboriginal peoples in Arctic communities has been recently assimilated as an innovative sustainable material for fashion due to the low environmental impact. Fish skins are a by-product of the food industry, using waste, applying the principle of circular economy. Fish skin leather processing prevents the throwing of skins into the ocean and could significantly reduce marine pollution and sustainably protect marine ecosystems. There is a trend in the fashion industry toward the adoption of new materials which have a lower environmental impact than their conventional alternatives (Textile Exchange 2016).

Fish skin is an innovative and sustainable alternative material with a lower environmental and social impact than conventional leather.

The use of fish skin by Icelandic people

For much of their history, Icelanders wore shoes made of wolf fish skins processed using traditional tanning methods and they measured distances by how many pairs of fish skin shoes would be worn-out walking over the path (Rahme, L. 2012). Anthropologist Mould (2018) mentions that each shoe was cut from a single piece of fish skin, with a vertical seam at the heel and a seam at the toe. The fish skin was not tanned but washed and smoothed on a wooden board to which it adhered with its own fat. When the skin dried, it was folded and sewn together with a strap of raw skin around the edge and tightened to form the shape of the shoe (Rahme, L. 2012).

According to Sigfusson (2017), Icelandic history, right from the settlement of Iceland in the 9th century, has been interwoven with marine resources. Fish has been their main source of food and income and they still have their ancestor's spirit of finding usefulness in everything.



Figure 1. Traditional Icelandic shoes made out of Cow leather (left) and wolf fish skin (right) lined with knitted wool. Photographer: Nathalie Malric.

Fashion Education for Sustainability

This research fits in to our broader commitment to sustainable fashion through raising awareness of new raw materials for fashion informed by aboriginal ancestral practices. The research provides us with the opportunity to change how fashion is taught in higher education. Furthermore, it will promote the integration of sustainable design thinking into the fashion curriculum. We believe, as educators we have the responsibility to integrate sustainable design thinking into our whole practice, from the sourcing of raw materials to understanding the impact of those materials on people and the planet, right back to the beginning of the supply chain. Drawing upon indigenous knowledge on raw material processes is crucial to helping fashion students to stay at the cutting edge of sustainable innovation.

The research proposes an innovative approach to teaching fashion sustainability, through the creation and delivery of a fish skin educational programme where students have engaged in a knowledge-based project creating new kinds of collaboration amongst themselves and the craftsman.

Description of activity

Project creation

The Fish Leather Craftsmanship workshop was organised by Elisa Palomino and Katrín María Káradóttir and taught by Lotta Rhame in collaboration with Atlantic Leather tannery.

The authors designed a workshop encouraging Arctic design students to produce fish leather designs using traditional skills built over generations by Arctic indigenous peoples. The aim was developing sustainable design within the Arctic

traditional ways of life in areas with a history of fish skin leather production such as Iceland, Sweden, Finland and Denmark. Preserving and using fish skin cultural heritage and strengthening networking activity.

Recruitment

Author 1 and 2 were interested to develop an immersive experiential learning process as a practical educational model of sustainability in action.

Author 1 and 2 engaged with partners from Iceland University of the Arts, Royal Danish Academy of Arts, Boras University, Aalto University and Central Saint Martins to recruit students from their universities willing to participate in the workshop to explore further alternative sustainable fashion materials such as fish skin.

A total of 10 students from universities in the circumpolar area (Iceland, Denmark, Sweden, Finland) and UK benefited from the workshop, author 3, a Swedish craftsperson delivered the workshop, shared Sami traditional fish skin tanning methods and passed down the endangered craft to the next generation of Nordic students.



Figure 2. Visit to Atlantic Leather fish skin tannery. Photographer: Nathalie Malric.

Workshop location

The workshop took place in Sauðárkrúkur, Iceland, combining the traditional knowledge on fish skin tanning with the technological progress of Icelandic tannery Atlantic Leather, which has been turning local fish skin into highly sustainable leather since 1994.

Workshop programme

The programme included a preparation, implementation, evaluation and a follow-up phase.

Students learnt traditional fish skin handcraft heritage to integrate into their fashion practice.

The workshop was 5 days long and included:

- Sustainability background Introduction
- Lectures on historical fish skin artefacts in international museums
- Visit to Atlantic Leather fish skin tannery
- Visit to the local textile museum
- Traditional fish skin tanning and dyeing methods
- Sketchbook development



Figure 3. Sketchbook development. Photographer: Nathalie Malric

Fish skin tanning

Lotta Rhame worked with students and tutors to create and experiment around tanning fish skin. We scraped two skins each with traditional and contemporary scraping tools in order to remove any residual flesh that would potentially rot. In order to soften the skins, we used a variety of tools that Lotta had been brought from Sweden, ranging from handmade wooden implements to the jaw of a moose. Whilst scraping the skins we explored the different layers and thickness we could achieve, in some cases removing even the top, two-tone layer.

We used two different methods to tan the skins; one method included using a bark solution made from boiled willow bark (the bark was collected in Dalarna, Sweden during the spring when the bark contains more tanning acid), and the

other tanning method consisted on oil tanning using rape seed oil, egg yolk and soap.

In order to dye the fish skins, we boiled onion skins to make a yellow dye and cochineal to make a red dye. When the oil-tanned skins were dry and soft we put them in the solutions for 3-4 hours. We then rinsed them in water, dried them and softened them again. For the bark-tanned skins we mixed a strong bark solution with the onion skins and cochineal and when it was under 20 Celsius, we put the skins in. We left the skins in the liquid to dye overnight and re-oiled and softened them the next morning. In addition, Lotta Rhame, showed us how to make traditionally thread with the sinews and tissue of the fish and we learnt traditional sewing techniques.

On the last day of the trip we held a critique with the students, and they all presented their skins, research and development from the trip.



Figure 4. Softening the fish skin with the jaw of a moose. Photographer: Nathalie Malric.

Conclusion

The paper demonstrates how relevant the Indigenous fish skin knowledge -in partnership with sustainable design strategies- can be to connect people to their culture, communities and the environment.

Feedback from participants and craftsperson suggests that the passing on the fish skin knowledge and skills was of great relevance to them as well as the immersive experience at the fish skin tannery Atlantic Leather. This fashion activity managed to inspire deeper relational connections amongst the students involved, the community and their environment.

Working outside of the classroom can provoke a learning method that usually does not occur in the university campus.

Students became the main players in realising resilience through the community-in-place.

The workshop seeks to inspire Academia involved in the development of sustainability and craftsmanship within their curriculums to implement this transformative teaching and learning experience in their own practice. The workshop methodologies reflected the geographical contrasts of the area. The harshness of the weather, the isolation and the limited availability of materials formed a unique source of creativity and inspiration for the students during the workshop. Fish skin was the only available material, urging students to think creatively and seek new design possibilities from fish skin. Eco-consciousness played a fundamental role in the students' designs using remnant materials. The traditional tanning processes we learnt, the use of environmental substances such as oils and bark, combined with modern state-of-the-art knowledge can provide a more environment friendly tanning industry. The project provided a case study for working across Arctic Universities to develop their cultural identities and foster narratives of social sustainability. The cross disciplinary project has created a new structure to demonstrate how much the various Arctic communities have in common. This project recommends engagement with local communities and traditional fish skin knowledge holders— laying the ground work for an assessment that is co-produced by both traditional knowledge and fashion higher education.



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Figure 5. Fish skin tanning process. Photographer: Nathalie Malric.

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