RELATE NORTH

Tradition and Innovation in Art and Design Education

Edited by Timo Jokela & Glen Coutts

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Preface

This book is the seventh in the *Relate North* series produced by Arctic Sustainable Arts and Design network (ASAD) of the University of Arctic. Published annually, the *Relate North* books share an underlying philosophical viewpoint, a focus on Northern and Arctic issues in the field of arts, design, education and visual culture. The *Relate North* series reflects in many ways the dimensions, perhaps even the contradictions, of sustainability thinking in art and design education. Sustainable development in all its forms is a key global challenge in the early years of the twenty-first century. The *Relate North* books outline thinking about art and design education and the potential for sustainable development particularly in a Northern and Arctic context. The series aims to advance understanding and seeks to improve arts, design and visual culture education for sustainability from public schools to higher education and community-based learning amongst people living in Northern and Arctic areas.

An additional aim is to introduce original ways of rethinking the status of contemporary art, design, craft and new practices in art education. Although principally concerned with research and knowledge exchange in art and design education in the North and the Arctic, the contributors investigate issues and topics that may have wider interest, for example, the sociocultural and political dimensions of living in rural places and urban settings in remote and peripheral areas in other parts of the world.

Among the ASAD network, Arctic art and design should be understood broadly to include art, design, craft and Indigenous making and to promote a dynamic relationship across traditional 'boundaries' of disciplines and processes. ASAD and the *Relate North* books aim to introduce the best of contemporary art practices and design thinking as they may apply to contemporary sociocultural problems and contexts. The *Relate North* collection offers an alternative way of seeing art, design and crafts as mutually beneficial and integrated, instead of following the dualistic Western cultural practice of separating art, design and crafts into separate disciplines. The approach is also informed by Indigenous scholarship in the Arctic, in the manner

of, for example, the Sámi artist and researcher Gunvor Guttorm (2015). The ASAD network asks how contemporary art, design methods and Northern and Arctic ways of knowing and making can meld to promote innovative approaches in art education. The central aim is to seek appropriate ways of sensitively addressing environmental and sociocultural issues using, for example, Applied Visual Arts (AVA) methodologies (Coutts & Jokela, 2019). A further aim is promoting sustainable development and recognising the cultural diversity of the circumpolar North and the Arctic (Huhmarniemi & Jokela, 2020).

On the one hand, the Arctic and its inhabitants are often seen as a fragile and vulnerable periphery whose ecological, economic and social problems are addressed through research and art and design. On the other hand, the study of Northern cultures and communities has made it possible to understand the North and the Arctic as the centre and resource of the lives of its inhabitants, rather than a periphery. Thus, sustainable Arctic art and design education also challenges us to reflect on the relationship between innovation and cultural traditions, especially when dealing with Northern communities living in close contact with nature. An additional challenge is provided by the fact that cultures live in and are shaped by, social practices; nature seems to be intertwined with culture and the real merges with the symbolic.

In this book, we explore the discourse of tradition and innovation in art and design education in the circumpolar North and the Arctic regions. We are interested in how art and design education might address the challenges of the social, cultural and economic settings and post-colonial situation of the area. On one hand, there is a cultural and linguistic diversity in the Arctic area due to the Indigenous populations and other local people inhabiting the area; thus, protecting cultural traditions is one of the key issues when discussing social and cultural sustainability. On the other hand, the Arctic is developing into an important hub of the twenty-first century, industrially, socially and politically. We believe that the economic potential of the region should be harnessed in an innovative way that brings prosperity and guarantees the livelihood and positive social-cultural development of Arctic inhabitants and communities. The Arctic and Northern circumstances can be viewed as a 'laboratory' for a new genre of art and design education, whilst acknowledging pressing global sustainability issues (Jokela & Coutts, 2018; Huhmarniemi & Jokela, 2020).

The concept of innovation is often seen as almost the opposite of tradition. In the areas of art and design, for example, the notion of innovation often equates with original, new and unusual solutions (usually products) for business, market and commercial applications. In short, innovation is often linked in people's minds with novelty and even revolutionary approaches or inventions. Today, there is a growing consensus that econ-

omies need people who can contribute and adapt to innovation. In addition to strong technical expertise, creativity, critical thinking, problem solving, communication and collaboration is seen as critical (Coutts, 2013). Some even see the rise of a 'creative class' as the driver of economic growth. In this context, art and design education systems must equip students with the skills required for innovative societies. In some art and design universities, this seems to be taken very seriously.

The idea of tradition, however, is often associated with customs, conventions, habits and even ritual and ceremony. Some see the role of arts education as tutor to cultural traditions as significant. In the lives of the people of the Arctic and the North, the traditions are closely linked with nature and its ecosystems. Traditional knowledge arising from the connection to Northern ecosystems can be addressed from the perspectives of traditional knowledge, traditional ecological knowledge, indigenous knowledge, tacit or local knowledge (Helander-Renvall & Markkula, 2017; Porsanger & Guttorm, 2011; Valkonen & Valkonen, 2018). In the context of ASAD, the term *Northern knowledge* has been used to distinguish it from indigenous knowledge systems. According Huhmarniemi and Jokela (2020) the Northern way of knowing combines cultural heritage related to nature and ecosystems and tacit material knowledge with the making and use of art and craft and the visual symbols of cultures. The concept of Northern knowledge enables reflection and action in which both indigenous and non-indigenous cultures have traditions tied to nature and know-how worthy of maintenance and revitalisation, one that is not ethnically inherited but can be learned, researched and developed towards sustainable innovation and resilience in a rapidly changing world all in line with UNESCO goals of sustainable development (2020).

Our view is that there may be fruitful ground to be explored in the intellectual and pragmatic space between the traditions and innovation. Increasingly, innovations are also based on immaterial values. For example, well-being has become one of the key areas of research and development in Arctic art and design. In addition to social innovation, art creates emotionally significant and memorable experiences. In this case, emotional impressions, imagery and storytelling are emphasised in Arctic art and design. By the concept of Northern knowledge, we also refer to a situated knowing with nature, not only how it is discussed in the theory of situational learning, but also in a neo-materialistic and post-humanistic research paradigm. The current debate on neo-materialism highlights, in a new way, the material possibilities offered by the North and the Arctic, and the post-humanism theory of knowing together with nature, its ecosystems, animals and non-humans can actualize research and design methods to better understand how to sustain the future. We are interested in exploring what kinds of theoretical foundations might such an approach be built on and what it might look like in practice.

This book consists of eleven chapters. The subtitle, *Tradition and Innovation in Art and Design Education,* was also the theme of the first-ever ASAD symposium and exhibition to take place in the Russian Federation, November 2019 in Syktyvkar in the Komi Republic.

After the events in Syktyvkar, chapters and visual essays were sought for this book to focus on issues concerning traditions and innovation in art and design education. Submissions were subjected to double-blind peer review, and the book you are now reading is the result of that process.

In this volume, we present the work of researchers, scholars, artists and educators from Canada, Finland, Norway, Russia (Komi, Yakutia, Khanty-Masky), UK and USA (Alaska), whose professional activity focuses on the multifaceted concepts of tradition and innovation. Rapidly changing sociocultural circumstances foreground such issues in the ASAD network, its aims and thinking about sustainability. As editors, we respect the traditions and conventions that are the custom in different countries and regions across the circumpolar North. In bringing together this diverse collection, we hope we have remained true to the authentic voice and register of each author and that the reader will appreciate the different ways that research is conducted and reported, not only in the arts, but also in different cultures.

The opening chapter focuses on the concept of *Arctic Design* and how it infuses research and pedagogy in the North. The authors, from Russia and Finnish Lapland, report on the unique challenges facing the design profession, researchers and design educators in the Northern and Arctic environment. The researchers set out a 'plan for the future'; a theoretical framework for design-led development actions in the extreme environmental conditions, with a focus on human and non-human wellbeing. The authors trace the development of the notion of Arctic Design through the history of Arctic-oriented design education in the Russian and Finnish universities. Using case studies and student projects, they illustrate the fundamental concept of Arctic Design.

The second chapter, by authors based in Finnish Lapland, discusses an innovative master's level programme that explores the potential of art and design to support emerging renewable creative economies in the far north of Finland. New ways of deploying traditional renewable resources (commonly used, for example, in Indigenous handicrafts) and ecosystem services like (aesthetic of landscapes, seasons, nature lights etc.) may provide innovative opportunities in contemporary industries such as nature-based tourism or creative industries that build on tradition whilst embracing innovation for example contemporary art and photography.

Tradition and innovation is also the theme of the third chapter where the researchers at Nizhnevartovsk State University, in Russia, report on the artistic and cultural heritage of the people living in the Western Siberia, the Far North and the Middle Ob region. Academ-

ics, researchers artists and students explore the life and history of the Ob Ugrians, collect indigenous texts and illustrative material, and analyse renowned artistic works and art reviews. Using traditional methods in a contemporary context is the thread running through this chapter, for example, weaving, painting, doll making, ceramics and metalwork.

We stay in Russia, in North- Eastern Siberia, for the fourth chapter in which the researcher reports on a project that deployed a 'learning-by-making' model to support placemaking activities. The research investigated the possibilities of learning-by-making as a tool for participatory placemaking that might bring innovative proposals to the contextual issues of Yakutia (Subarctic climate and landscape, identity of the Sakha). In essence the study sought to explore how a participatory placemaking process might facilitate change and the extent to which that process might help develop civic places over time.

The authors of the fifth chapter are also based in Russia, but this time further west in the Komi Republic. The researchers discuss how the artistic traditions of the Republic interact with the system of Art Education and may be influenced by international art and design education projects. The authors trace the development of art and design education at the Pitirim Sorokin Syktyvkar University and in particular the Art and Design projects that were a part of the art exhibitions organized in the framework of *Living in the Landscape Summer School* and the *Relate North-2019 International Symposium* in Syktyvkar.

The authors of the sixth chapter, based in Canada and Northern Finland, 'consider local traditions as being not only a catalyst for more innovative design concepts, but also ones that are place-based and contextually appropriate.' The researchers explore the notion of 'circumnorthern' design through an examination of design projects in 'winter cities' in Fennoscandia (mostly Oulu, Finland and Luleå, Sweden), Japan (Sapporo), and Canada (Montreal). In addition, the authors appeal to designers and design educators living in the circumpolar *Near North* to re-examine their local contexts and traditions and see them as resources for innovation.

Snow and ice as design material and inspiration is the broad theme of the seventh chapter. The authors, based at the University of Lapland report on the experience of taking part in the *International Ice and Snow Innovation Design and Construction Competition* in Harbin, China. In the chapter, the authors describe the design and construction of a 12m diameter dome (*Tupa*) using layers of snow and ice which incorporated sound and light features in this project, tradition meets innovation.

Innovation in design is also the theme of the eighth chapter in which the authors report on an electronic textile (e-textile) course over the five-year period of its operation. Using traditional techniques and materials and melding them with innovative electronic technology is at the heart of the student projects described in this essay. As the authors

report 'A meaningful merger between technology and textile materials requires attention to both practical and aesthetical attributes of the design product'.

Textiles of a different sort are at the core of the research by the author of the ninth chapter. *From Mittens to Barbies* was part of a collaborative research programme organised by the international Arts-Based Education Research network which took place at the Tate Liverpool in England. 'Traditions and Innovation' is the central theme of this book, research that brings the tradition of knitting together (normally alone and at home) into the public and collaborative sphere of an art gallery and this essay eloquently explores that theme.

In the penultimate contribution, a visual essay, we learn about a project by a researcher based in Alaska about the massive problem of plastic pollution in our oceans. To draw attention to this problem, particularly in the Arctic coastal areas the author has developed an educational pop-up book to help raise awareness among young people of this threat to the environment and health.

The closing chapter reports on an 'emotional mapping photoplay' that took place in an art festival in Finland. The author discusses how art-based playful methods, photography and science can create a place-based emotional map which can in turn, be exhibited as part of an art installation or exhibition.

To conclude, we sincerely hope that this book will be of interest to a wide readership; artists, academics, researchers and policy makers concerned with northern issues related to art and design professional practice. The Arctic Sustainable Arts and Design (ASAD) network is expanding, now with 28 institutions as members spread across the circumpolar north and we envisage that this book will be used as core reading in many of the member universities and colleges.

Editing a book is a collaborative task and we as editors, have been extremely fortunate to work with a remarkable group of people – without them this book would not have been published. We what to express our heartfelt thanks to the authors, artists, designers, researchers and educators that have made this book possible. Our thanks are also due to the many academic reviewers and Board of *InSEA Publications.* A special debt of gratitude is due to our designer Annika Hanhivaara, her patient professionalism in response to our many questions and amendments is very much appreciated.

Visit the website for more information about ASAD or to download previous books in the *Relate North* series: www.asadnetwork.org

Timo Jokela and Glen Coutts
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References

Coutts, G. (2013). Applied Visual Arts: Learning for the Real World? In T. Jokela, G. Coutts, M. Huhmarniemi, & E. Harkonen (Eds.), *Cool: Applied Visual Arts in the North* (pp. 22–31). University of Lapland.

Coutts, G., & Jokela, T. (2019). Applied Visual Arts. In J. B. Hickman, K. Freedman, E. Hall and N. Meager (Eds.), *The International Encyclopedia of Art and Design Education*. Wiley. https://doi.org/10.1002/9781118978061.ead016

Guttorm, G. (2015). Contemporary Duodji – a personal experience in understanding traditions. In T. Jokela & G. Coutts (Eds.), *Relate North. Art, heritage & identity* (pp. 60–76). Lapland University Press.

Helander-Renvall, E., & Markkula, I. (2017). On transfer of Sámi traditional knowledge: Scientification, traditionalization, secrecy, and equality. In A. Xanthaki, S. Valkonen, S. L. Heinämäki, & P. Nuorgam (Eds.), *Indigenous peoples' cultural heritage: Rights, debates, challenges* (pp. 104–129). Brill.

Huhmarniemi, M., & Jokela, T. (2020). Arctic arts with pride: Discourses on Arctic arts, culture and sustainability *Sustainability* 2020, *12*, 604. doi:10.3390/su12020604

Jokela, T., & Coutts, G. (2018) The North and the Arctic: A Laboratory of Art and Design Education for Sustainability. In Jokela, T., & Coutts, G. (Eds), *Relate North: Art and design education for sustainability* (pp. 98–117). Lapland University Press.

Porsanger, J., & Guttorm, G. (2011). Building up the field study and research on Sámi traditional knowledge (Arbediehtu). In J. Porsanger & G. Guttorm (Eds.), *Working with traditional knowledge: Communities, institutions, information systems, law and ethics.* (pp. 98–125). Dieđut.

United Nations. (2020). *Home | Sustainable Development*. https://sdgs.un.org/

Valkonen, J., & Valkonen, S. (2018). On local knowledge. In T. H. Eriksen, S. Valkonen, & J. Valkonen (Eds.), *Knowing from the Indigenous North: Sámi approaches to history, politics and belonging*. Routledge.

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Arctic Design: Basic Concepts and Practice of Implementation

The ongoing immersion into the Anthropocene, a new human-dominated geological epoch (Lewis & Maslin, 2015), entails the increasing instability of our infrastructure and production systems. In addition, global warming and many other human-driven changes to the environment are raising concerns about the general livability of our planet and its capacity to maintain human civilizations (Gillings & Hagan-Lawson, 2014; Steffen, Crutzen & McNeill, 2007). Nowhere are these challenges more visible than in the Arctic, "a region experiencing transformation arising from the interactive forces of climate change and globalization" (Young, 2012, p. 75). The Arctic changes – although dramatic in environmental terms – have triggered a rapid increase in commercial, political, and military interest in the region (Claes, 2014; Stokke, 2013; Young, 2012). With enhanced transportation opportunities, increased availability of natural resources, new tourism destinations, and inevitable military/security concerns, the Arctic region has already become a centre of global competitive confrontation as well as interdependent cooperation. In a sense, the Arctic example of the human-technology-environment relationship illustrates the world's situation in miniature, in its sharp economic, political, socio-cultural, and environmental tension.

With the background set, we raise the question of the potential of design as "a plan for the future" (Blevis, 2018, p. 6). This chapter aims to introduce *Arctic Design*, a general theoretical framework for design/development actions in the extreme environmental conditions, with a focus on human and non-human wellbeing. In the world, where any environment has the potential to become extreme over the next 20-50 years (Smith, 2012), the very concept of the Arctic goes beyond geographical boundaries. From an imaginary, remote, sparsely populated area full of untapped resources, the Arctic turns into a natural lab and a real testing ground for new life-support solutions and thus provides for a radical reconsideration of the existing technology-augmented mode of living. We propose the Arctic Design framework as a new sensitivity towards global issues, as well

as a toolkit for harnessing the potential of design and "pointing our design energies in the right direction" (Nardi, 2019, p. 6) – in this context, to the North.

On the local scale, we also intend to contribute to "a new Arctic development theory" (Zamyatina & Pilyasov, 2018) with a revised image of the North and, in a broader sense, a 'designerly' vision of a new culture, that should facilitate a strategic transition from "conquering Northern frontiers" (Bolotova, 2012) towards developing the ways of living inside these frontiers.

The chapter is structured as follows: first, we present the origin of the Arctic Design approach through the history of Arctic-oriented design education in two universities – in Russia and Finland. Second, we identify the basic concepts of Arctic Design and illustrate them with field encounters, case studies, and student projects. Finally, we discuss the potential of the approach to contribute to the "progressive and coordinated research program" (Cross, 2018, p. 707) and, in general, to the "solid, collective viewpoint" (Cross, 2018, p. 707) on the very discipline of design.

The Past and the Present of Arctic Design

The conceptual outlook of Arctic Design presented in this chapter is quite different from the similarly-named sector of engineering research and development of technology for Arctic operations, namely pipelines, specialized vessels/icebreakers, freeze-proof construction units, and energy-efficient buildings that rely on profound scientific knowledge of ice mechanics, permafrost, frost-heaving activities, and related operational challenges (Bergström, Erikstad, & Ehlers, 2017; Eikill, Oftedal & Statoil, 2007; McPhail, Murfitt & McMullen, 1976). To understand the difference, let us take a brief look at the historical roots of "our" Arctic Design; at the underlying intentions and conditions determined the rise of this approach.

Although the concept of Arctic Design was internationally introduced under this name only in 2012 in the in-house publication by the University of Lapland (Tahkokallio, 2012), its origin can be traced back to the early 1980s. At that time, Arctic Design as a holistic vision naturally emerged in two countries – the Soviet Union and Finland.

The first one possessed almost 2/3 of the world's Arctic, with a sound strategy of military presence in the region and the "Siberian industrial utopia" associated with the extremely rapid development of inland natural resources (oil and gas) (Hill & Gaddy, 2003). On the national level, the Arctic/Siberian issues were rising in every field: from technological and social development, large-scale urbanization plans and heroic ro-

manticized narratives of the "Virgin Lands Campaign" (Timofeychev, 2017). Though the sector of design / technological aesthetics was not among the strategic priorities of the state, it also constituted a part of the general picture. Within this sector, a pioneering role was self-assigned to the Ural State University of Architecture and Art (USUAA, former Sverdlovsk Architectural Institute), namely the project-oriented university well-placed in one of the largest industrial regions on the crossroads of Europe and Asia and the North and South. The proximity of the Arctic provided the opportunity to immerse into the context of designing, while the developed network of industrial enterprises would potentially test and implement design proposals.

In the early 1980s, based on the general inspirational rhetoric of the Soviet state, the very idea of Arctic Design – as a set of observations and transformative activities towards a "bright future" – emerged from enthusiastic tourist trips to the Arctic and Siberian wilderness initiated by design teachers and students. During those trips, the first-ever direct encounters between young designers and the Indigenous communities of Khanty, Mansi and Nenets constituted a pivotal learning moment that resulted in projects of transport vehicles, tourist equipment, mobile dwellings, and others. Later, those experiences gave rise to the educational program *Design for the extreme environment of the Arctic/Far North.* However, for many years, these experiences, ideas, and developments were silent due to the historical isolation of the Soviet/Russian research and creative community (Azrikan, 1999).

In a similar vein, in Finland, Arctic design began as a practical approach and, eventually, the vision emerged inside a specialized university. In terms of spatial arrangements, that was the northernmost university of the European Union – the University of Lapland (ULapland) – founded in 1979. Here the Arctic/Northern issues were naturally embedded in the 'DNA' of university's actions, strategy, and curricula (Konola & Kähkönen, 2015, p. 9). Since then and until today, Finland has been leading and initiating international reflections on the role of design in the Arctic regions. Furthermore, *Arctic Design* is now integrated into the National Arctic Development Plan of Finland (Prime Minister's Office, 2013), providing a backbone to strategic thinkers and designers to further develop this approach (Beaulé & De Conink, 2018).

Despite the similarities of origin, there were some geographical, economic, political, and cultural differences reflected in the formulated understandings of Arctic Design. Also, in both countries (and universities) the definition evolved over the last 30 years undergoing some small refinements as the situated educational and research practice has suggested.

In the case of ULapland, Arctic Design means design grounded in the Arctic, that involves principles and practices of service and industrial design while taking into ac-

count human adaptation to the cold. In terms of theoretical foundation and research, this means, rephrasing Mauri Ylä-Kotola, a critical shift from the emphasis on commerce and technology, with art as the "icing on the cake", towards the alliance of social sciences and environmental thought inspired and facilitated by artistic vision (Ylä-Kotola, 2012, p. 15).

The USUAA's version promotes Arctic design as a professional area that facilitates non-biological human adaptation to and wellbeing in extreme settings through creating tangible or intangible things. In this version, the Arctic/North ceases to exist as a mere geographical name but instead becomes a useful and inspirational metaphor pointing to remote, sparsely populated and relatively isolated areas with a lack of urban industry and infrastructure, and – most importantly – with harsh, challenging yet fragile environment.

Nevertheless, both concepts agree upon the Arctic basis as providing fruitful insights into tacit issues of human-nature-technology interaction usually less pronounced or taken for granted in milder climates and more "civilized" environments.

Apparently, Arctic Design has never been an exclusively Finnish or Russian approach. Recent developments in this field are associated with a continually growing number of design professionals, indigenous representatives, as well as business and public stakeholders from circumpolar and sub-arctic countries. There are also examples of involvement in Arctic design research and development from non-arctic countries (Yamanaka & Cook, 2016; Holland, 2019).

Looking around, we can identify four different kinds of evolving understanding of Arctic Design approach – in line with the shift from colonial to postcolonial discourse:

1) Design for the Arctic: superficial localization based on distant ideation and development/manufacturing process and further incorporation of local traits without changing the "non-Arctic" core of a product. The most prominent example here is a top-down policy of localization of technology in the Soviet Union, during the massive industrialization of Siberia and the Far North in 1960s-1980s (Gerasimov et al., 1975; Hill & Gaddy, 2003; Josephson, 1995; Parker, 1980). There is also a modern example from the field of architecture in Alaska, where the findings and knowledge gained in scientific and technical labs are successfully applied to creating sustainable, affordable "western-style" housing for the aboriginal population (Cold Climate Housing Research Center, Alaska, USA).

2) Design in the Arctic: a merely geographical association based on what the land can provide. This statement is probably best evident through the examples of the extractive industry and that of Arctic/Northern tourism. In the former case, the image

of a "natural warehouse" entails the strategy of pumping out without giving anything in return. In this case, material objects are designed to be technologically efficient, without any connection to the natural surroundings and local inhabitants. In the case of tourism, the majority of tourist-oriented outputs are superficially stylized objects/services – from hotels and souvenirs to activities and events. Often exaggerated and full of stereotypes, such representations contrast with the actual situation in situ and, eventually, lead to a real threat of converting local indigenous cultures into exotic objects for tourist consumption (Pashkevich & Keskitalo, 2017). For example, both scholars and mass media cite an overwhelming number of cases of "exploitative tourism" that take advantage of the symbols and objects of traditional Sámi clothing (both authentic and "fake") for promotion, marketing and tourist attraction (Helsinki (AFP), 2018; Lindholm, 2014).

3) Design with the Arctic: a mutually beneficial engagement with the land and the people, with an emphasis on inclusive participation. As an illustration, we refer to works by the Canadian scholar Anne Marchand and colleagues, as an example of successful cooperation between designers and indigenous communities based on the principles of co-design and community-based design (Marchand et al., 2018; Marques Leitão & Marchand, 2012). In the field of architecture and urban design, the projects vary from using the findings and knowledge gained in scientific and technical labs for creating sustainable affordable housing for the Aboriginal population (Cold Climate Housing Research Center, Alaska, USA) to adapting indigenous knowledge for large-scale development of modern urban spaces (Lateral Office, Canada).

4) Design from the Arctic: technologies and know-how that the Arctic area can export to the rest of the world, particularly the local/indigenous understanding "of the sustainable system of this planet"(Hardt, 2012, p. 59). Examples vary from pieces of art and craft made by Indigenous artists and artisans creatively rethinking the samples of the traditional material culture of their people to skills and technologies of large-scale management of the space and time (Golovnev, Garin & Kukanov, 2016).

Over the past few years, interdisciplinary discussions on the potential of design thinking to solve a wide range of technological, environmental, and socio-cultural problems have been regularly present in the international forums of various levels, for example, Arctic Frontiers 2014, 2016; UArctic Congress 2016, 2018; ICASS 2011, 2014, 2017, International Academic Conference on Economic and Social Development 2018, 2019, and others. These discussions, in turn, opened up the need to explore and determine

the conceptual and categorical field of Arctic design and, thereby, to identify criteria for evaluation of ongoing projects, as well as developmental trends in this direction.

The Basic Concepts of *Arctic Design*

The exploration into Arctic Design begins from defining what Arctic Design is not: it is not a separate professional sector, like, for example, industrial or graphic design. Moreover, it is not what is usually meant by design specialization, but rather a lens that brings to bear particular sensitivity to human and non-human wellbeing. This lens is expressed through a set of basic concepts and principles that constitute a general conceptual system applicable, as we argue, to virtually any environmental and social development challenges.

The very essence of design as a discipline implies that any concept can (and should) be defined through practical implementation. Thus, the basic concepts of Arctic Design presented below are clarified through briefly described examples – projects conducted respectively at the USUAA, and the ULapland. The list of concepts (open-ended) includes hybrid culture, context-sensitivity, practical aesthetics, life-support module, and continuous adaptation.

Hybrid Culture

The concept of *hybrid culture* is the overarching and most important one in Arctic Design. However, it is also one of the most ambiguous and thus open to discussion. It comes from cultural studies, particularly from the contemporary postcolonial discourse outlined in seminal works by Homi Bhabha and Mary Louise Pratt (Bhabha, 1996; Pratt, 1991). We apply this discourse to the Arctic as a heterogeneous "in-between space"(Bhabha, 1996) where numerous multicultural non-indigenous newcomers – from exiled immigrants to oil/gas industry workers – currently co-exist with the small-numbered Aboriginal population "often in contexts of highly asymmetrical relations of power"(Pratt, 1991, p. 23). This process of aggressive interaction (collisions, mergers, acquisitions) proceeds with a significant preponderance of the influence of the newcomer population and is accompanied by a thoughtless transfer to the new conditions not only of the objects of the material environment but also of the whole lifestyle from different regionally determined customs and traditions, etc.

The spontaneous formation of hybrid northern materiality entails severe consequences. The first thing that a person perceives in a different culture is not abstract

concepts, but concrete facts (Trompenaars & Hampden-Turner, 1998). The material world is a direct reflection of cultural norms and values that, in turn, stem from the life tasks arising in front of the bearers of a given culture in a particular territory. When life tasks and following patterns of behaviour have not yet been established, the inadequate material world becomes the most apparent source of social and environmental conflicts.

However, the relations within multicultural communities can potentially go beyond what is widely meant by hybridization of culture as an inevitable result of colonialism (Ashcroft et al., 1989, p. 129), and serve as "a precondition for the inventiveness and creativity" (MacCannell, 1992, p. 3). The extreme, unforgiving, and non-compromised environment of the Arctic provides a fruitful testing ground for new forms of people's coexistence, namely "fluid communities," where the metaphor of fluidity means a lighter, more adaptable and mobile way of dwelling in the world (Manzini, 2019, p. 18). In the Arctic case, we already have a working example of such multilateral adaptation, that is the culture of the Indigenous population, particularly reindeer nomads. Their unique experience of comfortable living in extreme conditions has been coded in their material world. In contrast to the spontaneous, multicultural import, the things of indigenous nomads – undergone a profound natural selection and deeply rooted in everyday life – have eventually become "necessary and sufficient" not only in practical terms but also in aesthetic characteristics (Garin, 1991, 2011).

In other words, the exemplary human-object relationship, features of which designers are just beginning to realize, was developed several centuries ago and continues to exist in close proximity to us. However, today, in conditions of spontaneous hybridisation, there is a real threat of losing not just these objects and technologies but, as a result, the entire system of making and knowing and, eventually, the very way of living in the extreme environment. In this vein, the task for designers is to learn from this exemplar: "to analyze and adopt existing design principles from the Arctic and to make these available to the rest of the world while respecting the intellectual property of indigenous peoples"(Hardt, 2012, p. 57). Hence, the process of "decolonization by design"(Khandwala, 2019; Schultz et al., 2018), which implies competent design interpretation of indigenous knowledge, objects, technologies – decoding and adapting them to the specifics of the new coming population (physiology, mentality, etc.) – is a professional challenge for designers and an opportunity to bring closer the appearance of the "exemplary things" in our multicultural reality. It is important to note that Arctic design approach, at its best, is aimed not at Indigenous inhabitants

but non-indigenous temporary visitors. The goal of so-called arctic designers is to provide decision-makers with ethically and aesthetically appropriate, visually convincing concepts that would support non-indigenous individuals on short/mid/long-term "Arctic missions," and, at the same time, not disturb (and – at best – empower) local dwellers.

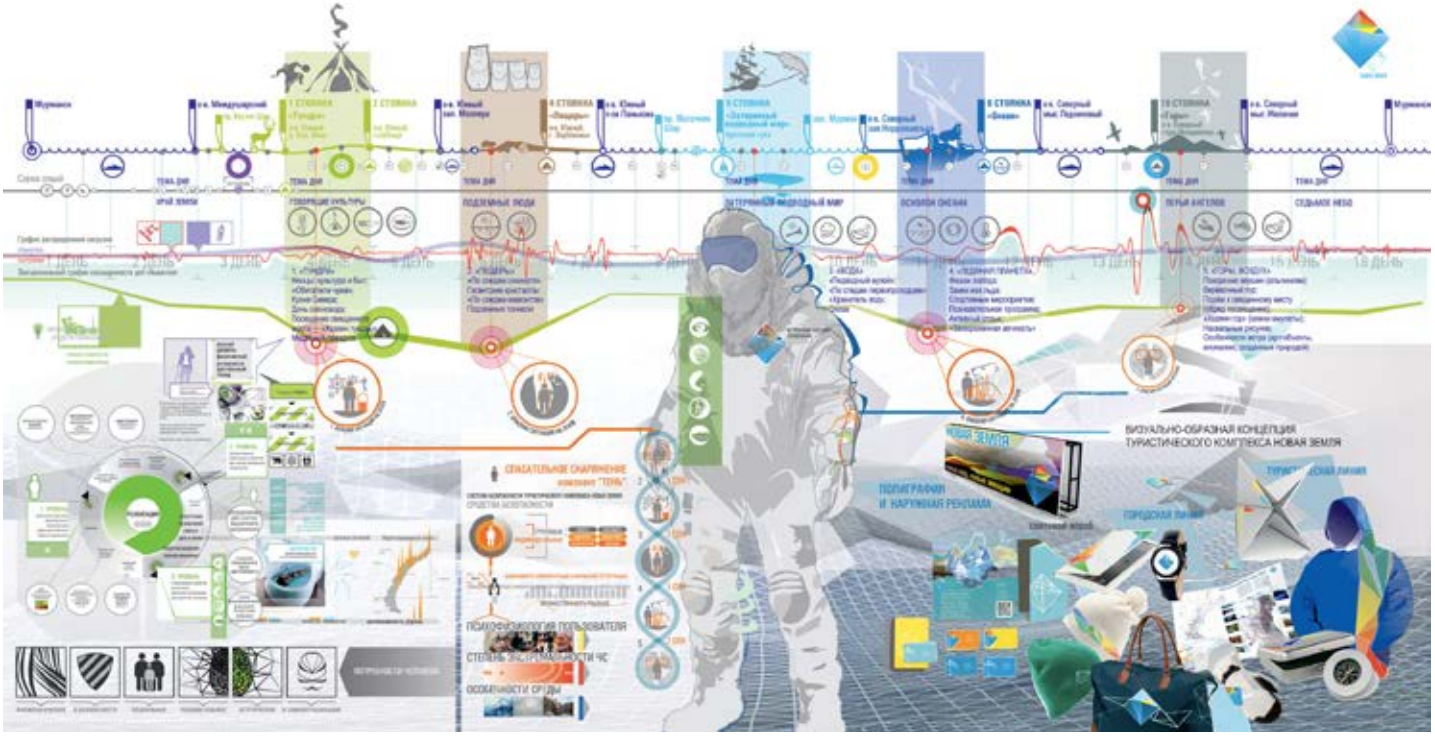
The revisited concept of hybridity/hybridisation thus provides fresh insights into timely topics of adaptation, participation, community and cultural identity (Irani et al., 2010; Muller & Druin, 2012; Naum, 2012) and, on a practical level, informs designers in their work toward creating "social innovation that transforms the existent by taking steps toward sustainability"(Manzini, 2019, p. 22). The material outputs of this strategy would not belong to any of the mixed cultures separately, but together give rise to the "synergetic third" – the object or material shell of the hybrid culture.

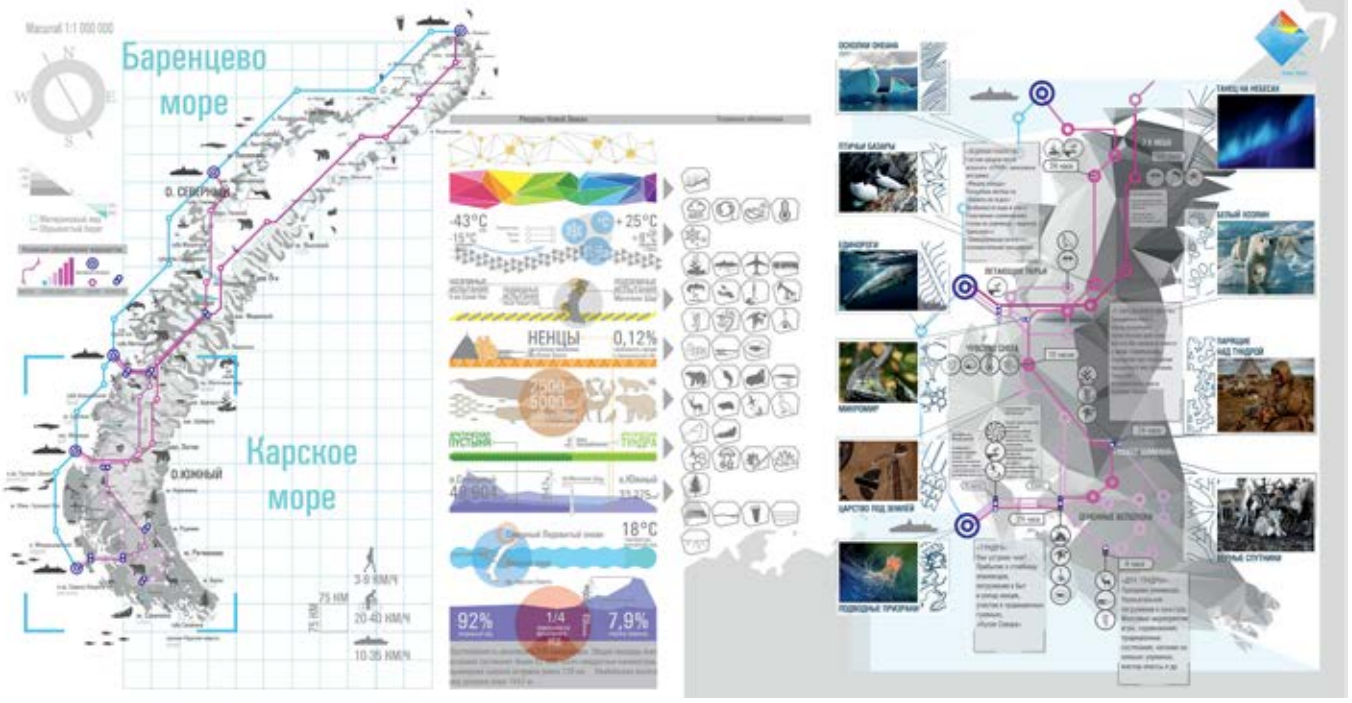
Examples of Hybrid Culture

The examples of the systemic projects on cultural design are still limited to the domain of short-term visits, namely Arctic tourism development. In 2012, a group of seven students of the USUAA developed an experimental tourist complex "Novaya Zemlya," a hypothetical model of comfortable human existence in the Far North, with geographical reference to the same-named archipelago in the Arctic Ocean (Figure 1). The outcome was the system of socio-technological interaction with the environment, implemented through the following components: a detailed scenario of events and actions/activities of tourists during the trip; sets of personal equipment for the identified variety of tourist activities; personal equipment for emergency rescue; mobile dwelling units; a chain of personal and communal transport vehicles that facilitates various kinds of tourist mobility; means of physical and psychological relaxation for extreme/adventure tourist trips; and an overall visual design concept of the tourist facilities (More information and images: Usenyuk & Gostyaeva, 2017).

Given the ULapland cross-disciplinary approach to both students' training and implementation of projects, the local issues are often tackled by the faculty of Art and Design in collaboration with other Faculties and scientific departments (for example, Social Sciences, Education, Arctic Centre, or the Multidimensional Tourism Institute) and external actors (for example, artists' associations, local municipalities). These types of projects often approach societal issues in a co-creative manner starting from workshops with the groups and stakeholders or communities in question in order to collect

Figure 1. A Tourist complex "Novaya Zemlya." Visualization of the concept. A fragment of the final presentation. 2012. Image credit: Natalya Golyzhbina, Julia Konkova, Ekaterina Fadeeva, Alla Ufimtseva, Irina Putilova, Irina Novoselova, Ekaterina Shevchenko.


ВИЗУАЛЬНО-ОБРАЗНАЯ КОНЦЕПЦИЯ
ТУРИСТИЧЕСКОГО КОМПЛЕКСА НОВАЯ ЗЕМЛЯ
ПОЛИГРАФИЯ
И НАРУЖНАЯ РЕКЛАМА


Баренцево
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-43°C
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user data and devise a course of action together.

Among the examples of such community-oriented projects there is a service design project Good Life in Villages (Akimenko & Kuure, 2017) (Figure 2) conducted together with local municipalities in order to address the problems of depopulation, as well as decrease of funding and infrastructure in the villages of Finnish Lapland, and as a result decrease of life quality of the ageing population. As a result of co-design sessions, the community of Autti village devised a course of potential grassroots developments they can undertake, further interviews also showed the growth of community spirit and closeness.

Another example concerns the work done in the sensitive scope of integration of migrant population (especially that of refugee backgrounds) in very different life conditions in the Arctic, as was done throughout the project Taidevaihde/ArtGear in 2016-2018 (Douranou, 2018; Lapin Yliopisto / University of Lapland, n.d.) (Figure 3). Its methodology was based on the combination of artistic methods, social work, and service design. As a result of a series of artistic workshops, the migrant individuals developed the sense of community and were gradually introduced into Finnish culture while also sharing the insights into their own, and acquired a toolkit of artistic co-creative methods for eventual educational and professional or social situations.

Figure 2. Co-design team of Autti during a workshop and the final presentations for Good Life and Villages project. 2016. Photos: Antti Raatikainen, Kemijoki Oy.

Figure 3. Taidevaihde/ArtGear various stages of community workshops. 2016. Image credit: Moira Douranou.

Context-sensitivity

The term "context-sensitive" clarifies the practical relationship of designers with the Indigenous cultural heritage within the framework of hybrid culture: not ignoring, but learning from, and not blindly preserving traditions, but keeping them alive and available for the present and future (Nugraha, 2012). This term emphasises the focus on protecting, appreciating and enriching not just historical cultural resources, but also those generated and accumulated by today's communities and environment.

With the aim of transforming traditions, that is, as Nardi points out, "finding new ways to apply the wisdom of organizing human activity around community, simplicity, equality, and care /.../" (Nardi, 2019, p. 14), we turn to works of Italian philosopher Gianni Vattimo arguing that in a postmodern situation the architect's job (and that of the designer) is "to listen, to accept, and to negotiate rather than to create something new" (Vattimo, 1995, p. 46). Thus, in order to facilitate a fusion of cultures – and eventually to create a hybrid culture – design professionals have to examine various values and intra-cultural distinctions thoroughly, as well as to clearly define what, why and how to ethically borrow from the natives.

Examples of Context-sensitivity

Again, within the Arctic tourism domain, the USUAA student Alexandra Nikolaeva developed "The Crow Day Celebration" – a context-sensitive adaptation of the homonymous traditional festivity of the Nenets people (Figure 4). This festivity signifies the end of a quasi-endless winter (a Winter Year) and the arrival of long-awaited spring (a Summer Year) (for more details of the traditional ritual see A. Golovnev, 1995). She carefully examined the entire set of rituals related to the traditional *Crow Day*, and divided them into three groups: (1) entirely sacred that are performed by a particular part of the community, for example, young girls or elderly women and forbidden for participation or even observation by other members; (2) partly sacred, when spectators are allowed, but participation is restricted; and (3) open/public, when everyone can join and enjoy the celebration. At the next stage, she proposed the cultural basis for design interpretation: The North-originated *Crow Day* was tangibly and spiritually associated with widely recognized (multiculturally acknowledged) celebration of New Year. The design outcomes included essential attributes for a new/old ritual, such as a stylized New Year Tree, special food, a thematic carnival with masks and costumes, and the culminating ceremony of making a wish.

Working in sensitive Indigenous contexts has been one of the priorities for the University of Lapland, too. The geographical closeness to different Sámi groups of Finnish, Swedish and Norwegian Lapland, as well as those of the Kola peninsula in Russia, allows for hands-on exchanges. One of the more long-term projects that took place over 2010-2014 was DAVVI (Tompuri & Kalla, 2014) (Figure 5). It involved non-Indigenous students and teachers of University of Lapland and Indigenous students and teachers of Sámi University College in Kautokeino (Norway) and Sámi Education Institute in

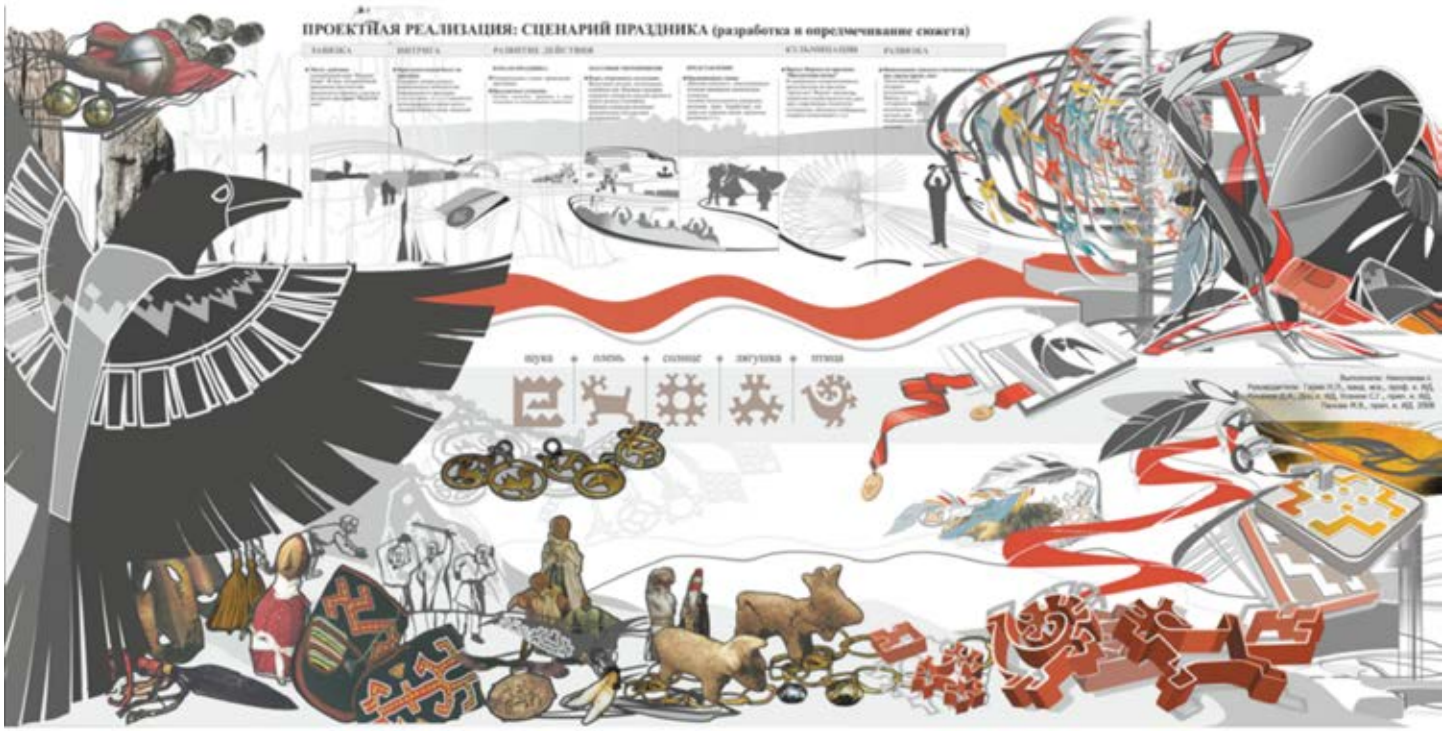

Figure 4. A Hybrid Tradition: The designerly renewal of the traditional Crow Day festivity. Visualization of the concept. A fragment of the final presentation. 2009. Image credit: Alexandra Nikolaeva.

Inari (Finland). The Sámi counterparts provided in-depth traditional and academic knowledge on the socio-cultural and historical realities and the traditional crafts which shape the whole approach towards creating material environment in the scarce conditions of the Arctic (the approach called "doudji"). The curriculum was designed so that the methodologies from "westernised" Social Sciences and Interior and Product Design would interlace and compare themselves with those from traditional craftsmanship. The outcomes included a dozen students' projects (mostly traditional Sàmi objects created in consultancy with the craftsmen and adapted ergonomically to serve a wider range of contemporary purposes). In addition, the project ensured further inclusion into the Faculty curriculum the bilateral workshops and consultancy sessions, as well as the approach of "duodji" as one of the concepts taught to young designers.

Figure 5. Documentation of tacit and explicit knowledge sharing during the DAVVI exchange stage at Kautokeino, Norway. 2013. Photos: Daria Akimenko.

Practical Aesthetics

The term originates from the seminal work "Style in the technical and tectonic arts, or, Practical aesthetics" by Gottfried Semper, which was a profound attempt to provide a complete science of architecture and art, unravelling the secrets of its conception, its transmission through time, and its future invention (Hvattum, 2001, p. 541). Practical aesthetics is a concept we employ to describe the pleasurable yet mundane dimension of existence in the extreme environment. Geographically remote and climatically severe, the Arctic is itself a substantially aesthetic construction. In the Arctic context, the concept reflects the variety of aesthetic criteria that characterize the mobile/nomadic way of living. For the northern nomads, as Golovnev pointed out, beautiful and practical are the same thing. They are "attracted to action, not contemplation" (Golovnev, Garin & Kukanov 2016, p. 8). Being a nomad involves various skills and abilities, for example, the ability to survive, orient oneself, get food in the Arctic tundra, as well as the ability to see the unity, integrity of the world and find one's own place in it.

The essence of Arctic-related practical aesthetics stems from the tacit knowledge of the locality that means the ability to exercise control over vast territories, and the craft skills involved in making/maintaining objects that facilitate fluid/mobile existence.

We thus build on Semper's statement that "purpose is an 'internal coefficient' of the work of art" (Hvattum, 2001, p. 543) by emphasising the importance of the aesthetic dimension as an "internal coefficient" of human-technology interaction in extreme environment. This dimension, we believe, should be given much higher consideration in the research agendas that make up Arctic/northern development.

Examples of Practical Aesthetics

"A Trip to the Stone Idols" was a degree project of three master's students conducted at the USUAA in 2009-2010 (Figure 6). The project explored the issue of protecting unique natural and cultural landscape through ethical and sustainable tourism. One of its tasks was to develop sustainable design solutions for personal tourist equipment – to re-think the tourist equipment in a "traceless" way. It emerged from a merely practical need to protect the vulnerable environment of the Northern mountain tundra from rubbish that is usually left behind by the tourists. The final design concept was based on the idea of "added value": in addition to their primary functions, things gained extra-qualities, which allowed them to communicate with users. Along with using sustainable/recycled materials, there were the following propositions:

- a mascot: a piece of equipment, which had to be in close proximity to a tourist's body all the time, and had an extra-quality of protecting its owner during the journey;
- a part of a ritual: an object, which was needed only a few times during the trip, should be burnt at a certain time;
- an "invisible thing", which would disappear without a trace, e.g., it could be eaten by animals or decomposed in the ground;
- a "2 in 1", which combined different functions in order to reduce the general number of things carried with tourists;
- a souvenir: a one-use piece, which tourist should take with her/him after the trip is finished.

Figure 6. Sustainable design solutions to the personal tourist equipment, as a part of the trip to the Seven Stone Idols, Northern Urals. The fragment of the final exhibition. 2010. Image credit: Anna Mukhina.

Figure 7. A still image from a video featuring Lapland Snow Design constructions for Lumotion Fashion Show - Rovaniemi Design Week 2013. Photo: Pietro Lodi.

The training of young artists and designers at the University of Lapland has from early on included the element of nature as generative and aesthetic device. The introduction to the subject parts from contemplating visual approaches, largely inspired by renowned environmental and land artist, such as Hamish Fulton, Andy Goldsworthy, and Robert Smithson (Goldsworthy, 1988; Kimmelman, 2005; Vettese et al., 2005). The curriculum includes work with snow, ice, willow, soil and other local and seasonal natural materials. However, it has also been further developed and put into Industrial Design and very practical business contexts. A good example of an application of long tradition of snow sculpting is *Lapland Snow Design Project*, a "cooperation of businesses, who work together with educational institutions on the design and implementation of different types of snow and ice environments" (Härkönen, Jokela, Yliharju, 2014) (Figure 7). Through the use of particular plastic properties of snow in combination with design software, students get to implement their designs in specific contexts, such as festivals, outdoor winter cinemas, exhibitions and other outdoor spaces.

An example of more craft oriented and "monetised" production *Arctic Design* items would be the Arctic Design Shop[1] that emerged on the campus of the University of Lapland. This is an attempt to create a brand for various micro producers of crafts and design items, such as accessories, jewellery or interior design products. The products are not only targeted at a tourist market, but also largely for internal use.

Life-support Module

The basis of this term is in the process of large-scale exploration of the Arctic / Far North, which at the practical level is still comparable with the "Space odysseys" and conducted almost by touch. The reality turns out to be more complicated than models or prototypes, the behaviour of the environment differs from laboratory experiments, and absolute control is unattainable.

The global task of technological, economic, and social development of the Arctic comes along with the idea of settling the vast areas through yet another wave of frontier urbanization, where new technologies and institutions emerge (Zamyatina, 2016). The plans to populate the vacant land with people from overcrowded regions in middle and low latitudes, however, meet an obvious obstacle at the physical level. To withstand the severe environment, both humans and technology have to literally "merge". Indeed, in the Arctic, throughout the history of human presence, the challenges of nature have

encouraged a strong reliance on technology to understand and overcome those challenges (Jørgensen & Sørlin, 2013). This statement evokes the "Spaceship Earth" metaphor (Boulding, 1966; Fuller, 1991; Ward, 1966) and, more specifically, the concept of "life-support system", based on the idea of biotechnological human enhancement or cyborgisation as a feasible design solution (Szocik & Wójtowicz, 2019).

Within the Arctic Design framework, the life-support module means a predefined set of "necessary and sufficient" things aimed at protecting a person from harmful environmental influences and creating sustainable comfort in these conditions. The life-support module is a protective shell that exists wherever humans are – from densely populated megacities to peripheral settlements and secluded shelters for lonely mushroom pickers, hunters or tourists.

From the designerly point of view, the critical characteristic of the module is adaptability that means the list of its functions is virtually open-ended. Depending on the context of use and its purpose, the number and priority of technical equipment included in the life-support module can vary while its structure remains unchanged. Therefore, similarly purposed modules can combine in any format and scale while maintaining a standard internal structure and gaining new qualitative characteristics.

Examples of Life-support Module

"Arctic Human Enhancement" is a series of iterative field observations on what is involved in being a human in severe conditions, and what kind of design it fosters. By detailed analysis of the Indigenous essentials, namely selected pieces of clothing (Figure 8), housing and transportations of reindeer nomads from the Russian North, designers study principles of Indigenous adaptation to extreme environment through human-made things (more details and images: Usenyuk-Kravchuk et al., 2020).

Figure 8. The analysis of functional properties of malitsa, a traditional fur clothing of the Nenets people. 2018. Image credit: Denis Kukanov.

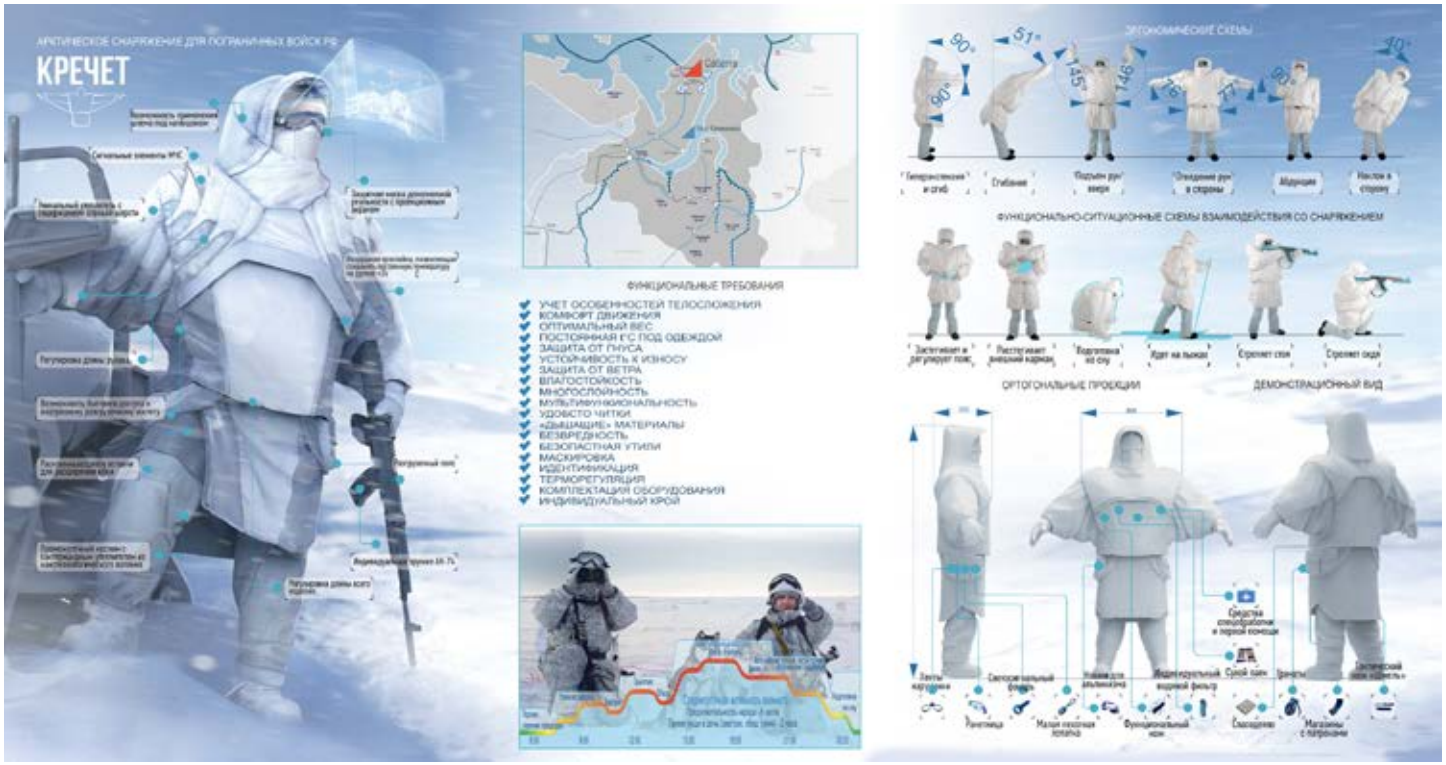

Figure 9. "Arctic Falcon" – a set of clothing for the Arctic border troops. 2016. Image credit: Arina Smetannikova.

The results serve as a database for master's thesis projects, for example that on special equipment for Russian Arctic border troops (Figure 9).

At the USUAA examples of life support would include various collaboration projects with Bombardier Recreational Products (BRP). The industrial design program has a tradition of bi-annual design competition collaboration with BRP started back in 2012. Students from different industrial design programs compete globally on design briefs set by BRP. Both bi-annual competitions and winners of the competition are announced during Arctic Design Week run by the City of Rovaniemi. The competition briefs have included various types of snowmobiles and other vehicles. These would have pragmatic focus on mobility and accessibility as well as aesthetic form-giving. Within this collaboration several master's thesis projects have been carried out for example on modular design and customization (Figure 10). The development of snowmobiles would benefit the livelihoods and accessibility of reindeer herders directly as well as many professionals in emergency or life-saving areas in the North.

Another example would lie in the development of functional clothing that is one of the main focuses of the Clothing Design degree program offered at the University of Lapland. Students of the program together with research staff of the Faculty of Art and Design have conducted extensive research on the topic of cold-protective clothing – from the healing properties of wool to virtual clothing. Special emphasis has been given to the research and development of wool as a material that is characteristic to the north and the local conditions. The life-support functions are embodied through the emphasis on the adaptive properties of the materials augmented with the use of virtual environments and technologies in clothing design (more details in Konola & Kähkönen, 2015, pp. 52–54). Particular examples include development of functional clothing aimed at protecting and enabling activities like sports, outdoor activities or working outside in the North[2].

Continuous adaptation

While the concept of hybrid culture positions the *Arctic Design* approach at the societal level, the term continuous adaptation illuminates the scope of activities at the level of an individual. The concept of adaptation as "a spatial concentration of effort" (Selye, 1976, p. 118) comes from biology and medical studies, where it describes the process of change by which an organism or species becomes better suited to its environment.

Within the Anthropocene paradigm and particularly the discourse of global change, adaptation usually refers to a process, action or outcome in a system (household, community, group, sector, region, country) in order for the system to better cope with, manage or adjust to changing conditions, stress, hazard, risk or opportunity (Smit & Wandel, 2006, p. 282).

In our case, the vast expanses of the Arctic remain sparsely populated, despite the long history of their development. The severe environmental conditions constitute a difficult-to-surmount barrier to comprehensive – physiological and psychological – adaptation for people from lower latitudes. As mentioned above, organic getting used to the Arctic is impossible without a profound restructuring of both physiological processes inside the human body and the "cultural core," namely values, traditions, skills,

Figure 10. Lynx Boreas Snowmobile. 2012. Image credit: Ville Wuorinen. Image from an open source: http://www.brpscandinavia.com/FI/tietoa-meista/uutiset/rovaniemi-design-week-brp-palkit-see-suomalaisen-muotoiluopiskelijan-harjoittelupaikalla-kanadassa.html

technologies used, as well as of the surrounding material world. The very idea of "cultural adaptation" coined by the anthropologist and cultural ecologist Julian Steward, describes the necessary adjustments of regional societies to the natural environment through subsistence activities (Butzer, 1989; Smit & Wandel, 2006, p. 283). Through the lens of Arctic Design, these activities represent a necessary and sufficient non-biological response to severe environmental conditions and thus constitute the subject matter of professional interest.

We employ the adaptation concept to identify and characterize the process of continuous adjustment, repair, repurpose and redesign of material objects (and related user practices) that enable and support sustainable interaction between a non-native human and the everchanging severe environment.

Examples of Continuous Adaptation

"An Ideal Northern ATV" is an iterative project on developing locally appropriate all-terrain vehicles for remote, roadless areas with severe climate conditions conducted at the USUAA in 2018-2020 (ongoing) (Figure 11). The ultimate goal is to come up with a design-driven foresight of micro-mobility in the geographical periphery. During the first part, students explored the phenomenon of "vernacular design," also known as – since Soviet times – the movement of DIY-enthusiasts of garage-making and tinkering and selected several regions of Russia based on local DIY-activities. The design proposals are built upon existing vehicles invented by local makers and users from those settlements. The next round will include discussions of design proposals with authors of original machines and then iterative ideation and development (more details and images: Usenyuk-Kravchuk et al., 2019).

Service Innovation Corner (SINCO), a Service Design prototyping lab, has been in use at the University of Lapland for nearly 9 years now (Figure 12). It is a space defined by large screen walls and a system of projectors that allow to create an immersive representation of virtually any situation. Additional accessories and materials are used as aids in the process of this immersive planning. Since its early days, the objectives of the lab included being able to prototype design contexts and situations in a "safe" adaptable environment, as well as "to study and analyze existing service journeys, visualize ideas and develop them quickly and evaluate concepts collaboratively" (Rontti et al., 2012). The obvious pluses of having such a space available for young designers in the Arctic conditions is the ability to design for outdoor and "offsite" situations that would not

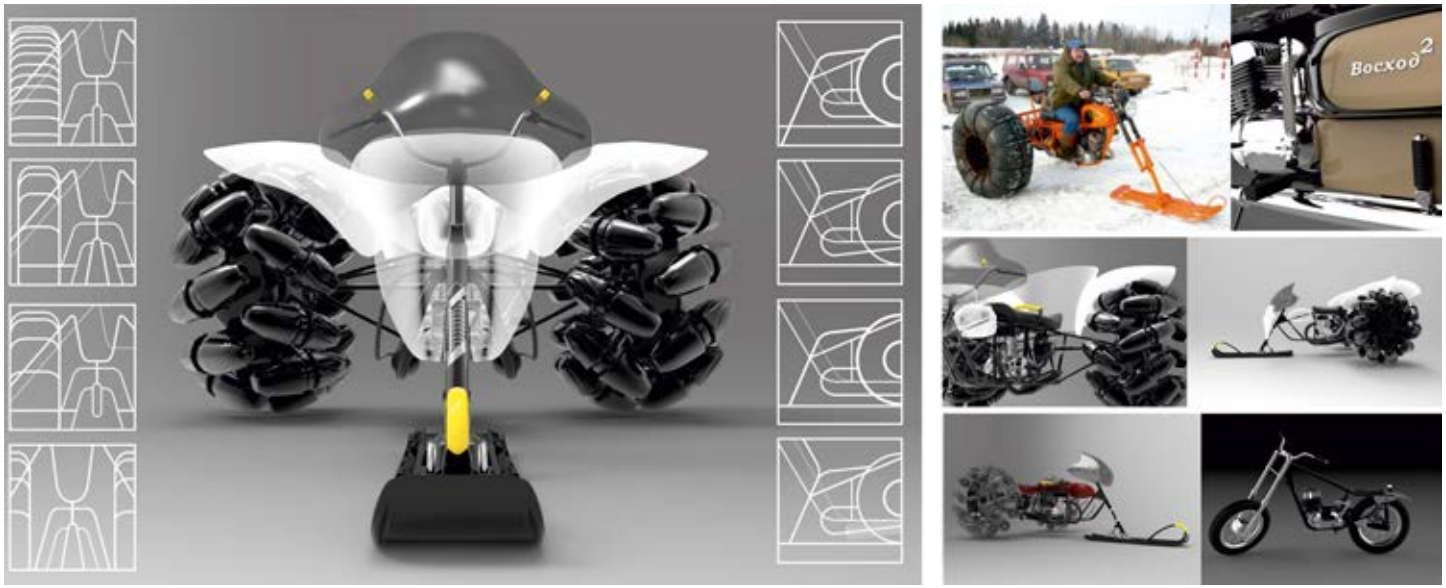

Figure 11. "The Ideal Northern ATV": The final presentation. Left, mid- and bottom lines: the final design proposal. Image credit: Nikita Klyusov, 2019. Right top: the ATV "Pn-D7" by Remix59, Perm Krai. Source: pnevmokhod.ru, 2009; and the Soviet motorbike "Voskhod", the donor of the construction parts, 3D-model. Image credit: Nikita Klyusov.

Figure 12. SINCO space 3.0 at the renovated F-wing, 2016. Image from an open source: http://sinco.fi/2016/02/workshopping-with-volkswagen-teams-at-new-sinco-space/.

otherwise be easily reachable. Inviting users, focus groups and stakeholders to co-prototype together in the lab creates an even more inclusive space. The easily transformable environment allows for ongoing adaptation and adjustment of design prototypes and further services and products.

Discussion: The Place of Arctic Design in the Complex Design Landscape

From an academic perspective, this chapter represents a rare attempt to document and "scientifically legalize" the original research ideas sprang up far (north) from the strongholds of global modernity.

Arctic Design, while not a universal approach, can offer valuable insights to enhance the design theory and practice. Its orienting contribution to the complex design landscape appears twofold. First, it seems particularly useful for highlighting the tacit issues of the relationship between human and technology in the presence of an influential environment, when environmental variables are hard to specify and impossible to control directly. Second, it draws attention to alternative ways (practices) of approaching and getting used to such an environment.

As for the latter, with its original geographical reference, Arctic Design contributes to topical discussions on sustainability. Indeed, in the Arctic context, sustainability as an essential systemic feature appears in the form of both dramatic environmental challenge and a desired developmental outcome. The latter applies to, as Michael Hardt asserts, "Arctic indigenous peoples' dignified existence." He goes even further proposing Indigenous people to be our teachers on the way towards sustainability by design (Hardt, 2012, p. 59). Overall, Arctic Design's contribution to sustainability discussions sets on the socio-technical system innovation level (According to categorization by Ceschin & Gaziulusoy, 2016). With the alternative solutions to fulfilling individual and social needs based on necessity and sufficiency in the severest possible context, it aims to support "transitions to new socio-technical systems" (Ceschin & Gaziulusoy, 2016, pp. 3, 19).

At the philosophical level, by drawing attention to alternative ways of moving and dwelling in the specific (extreme) space, and thus to alternative temporalities, *Arctic Design* reconnects with the concept of *Temporal Design*, where time is observed "beyond narratives of universal time and linear progression, and beyond dichotomies such as fast and slow" (Pschetz & Bastian, 2018, p. 6). Within this frame – through the concepts of context-sensitivity and practical aesthetics – Arctic Design enables ethi-

cal appropriation of virtually timeless Indigenous technologies: "from the space-time design of mobile camps in the open tundra to multi-functionality of material things, enable and facilitate mobility in the extreme environment of the Arctic" (Golovnev, 2017, p. 15).

In line with actual research on user creativity and grassroots innovations, our conceptualisation confirms the importance of "software", namely acquired skills and knowledge of making/using/maintaining technology, over the "hardware" that is technology *per se*. With focus on respecting (and learning from) local actors and practices, Arctic Design can assist the broader research community in two different ways: (1) to encourage reflection on practical problems of integrating *ex-situ* technologies into local knowledge networks, and (2) to enable experiments with possibilities of sustaining and supporting locally originated innovations under the challenge of in/outflows of people and technologies. In this vein, back to the geographic association, the "extreme core" of Arctic Design opens enriching, collaborative opportunities with regard to the opposite direction, for example, Africa. With a comparably harsh climate, vast territory and uneven economic systems, the African continent is home for millions of "lay designers" forced to generate makeshift solutions to everyday basic needs (Campbell, 2017). The combination of Arctic and African insights on the contextual relevance of design activity can certainly help to rethink the role of the professional designer in society and, from an educational standpoint, substantially enrich discussions on the future of design education (Campbell, 2008, 2017).

Limitations and Further Research

Like any theoretical framework, Arctic Design makes up its own reality by highlighting some aspects and obscuring others, and, therefore, has certain limitations. The most significant one is that Arctic Design is still too generalized as a conceptual construct, with little implementation practice documented internationally. While trying to place it within the already heterogeneous field of design, we clearly acknowledge the need for follow-up empirical studies to validate and/or modify the concepts proposed in this chapter.

Another limitation and an opportunity for further research, is the lack of the systemic basis behind presented concepts, namely elaborated and structured description of the body of methods associated with Arctic Design. On the other hand, however, this lack, common to many other "designs", provides for instrumental fluidity and freedom to draw from a broad range of disciplines relevant to particular case studies.

The first attempt in this way was the study of user-invented small-scale arctic ATVs (Hyysalo & Usenyuk, 2015; Usenyuk, Hyysalo & Whalen, 2016). In this case, the thematic focus on the environmental and social contexts of technology use was instrumentally facilitated with the so-called Biographies of Artefacts and Practices (BOAP) framework that comes from a new wave of studies on socio-technical change, providing novel understandings of innovation, especially user roles in innovation (Hyysalo, Pollock & Williams, 2019).

Another severe limitation of the presented framework that indicates the direction for further improvement is that the number of Indigenous members of the design research community is still small. As asserted along the lines, the presented framework aims to serve the needs of emerging "hybrid" community, and therefore urgently calls for the equitable input from both sides, namely newcomers' and Indigenous. This is, indeed, a social obligation for design education to raise a new kind of "hybrid" design professionals – people trained to understand the complexity of environmental, social and cultural contexts, to use the means and methods of facilitating multilateral cooperation, in addition to understanding economics and politics. Within the educational settings of the USUAA and the University of Lapland, there are already attempts to engage Indigenous students through bachelor's and master's degree programs as well as specialised short-term courses under the framework of the University of the Arctic *Arctic Sustainable Art and Design Network*. These attempts already signify the "broken ice" on the way of making actual Indigenous voices freely expressed and be heard.

Conclusion

This conceptual chapter offers Arctic Design as a development framework for human existence in a specific (extreme) environment that can potentially address the challenges of a changing modernity. The basic concepts of Arctic Design presented above constitute an integrated system, as they are connected to all kinds of human activity in an extreme environment, and further implementation of any of these concepts eventually calls for engaging all others.

Throughout the chapter, we demonstrated how Arctic Design could point to new areas that deserve exploration, but until recently have been overlooked or underestimated by design professionals. The presented concepts are just the first step towards defining the boundaries of Arctic Design, and an invitation (and provocation) to further exploration and discussion of perspective directions of this field of inquiry. The steps

that we believe will finally lead to the comprehensive methodology of design for extreme environments.

Overall, although we assert the broad applicability of the presented theoretical concepts, the Arctic has been and will naturally continue to be, the primary setting and the focus of all studies under the Arctic Design umbrella, and this is that setting where the theoretical concepts of the present chapter will be validated through further empirical research. As with any academic study, we do hope that our work will inspire other researchers, particularly from polar and subpolar countries, to test proposed concepts within learning labs, in academic and policy levels and in practice.

Acknowledgements

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Endnotes

1 https://arcticdesignshop.com/?lang=en

2 https://www.ulapland.fi/news/Lapin-yliopiston-vaatetussuunnittelun-opiskelijat-mukana-urheilualan-messuilla-ISPO-M%C3%BCnchenissa/41543/a73116db-7a77-470f-97be-1a4bbaeb7c35

References

Akimenko, D., & Kuure, E. (2017). Narrative identities in participatory art and design cases. *Nordes 2017: Design+Power*, *7*, 1–9. http://www.nordes.org/nordes2017/assets/full_papers/nordes17a-sub1031-cam-i26_AKIMENKO_v2.pdf

Ashcroft, B., Griffiths, G., & Tiffin, H. (1989). *The empire writes back: Theory and practice in post-colonial literatures*. Routledge.

Azrikan, D. (1999). VNIITE, dinosaur of totalitarianism or Plato's Academy of Design? *Design Issues*, *15*(3), 45. https://doi.org/10.2307/1511884

Beaulé, C. I., & De Conink, P. (2018). The concept of "Nordicity." In T. Jokela & G. Coutts (Eds.), *Relate North: Practising place, heritage, art & design for creative communities*. Lapland University Press.

Bergström, M., Erikstad, S. O., & Ehlers, S. (2017). The Influence of model fidelity and uncertainties in the conceptual design of Arctic maritime transport systems. *Ship Technology Research*, *64*(1), 40–64. https://doi.org/10.1080/09377255.2017.1312856

Bhabha, H. K. (1996). Culture's in-between. In S. Hall & P. Du Gay (Eds.), *Questions of cultural identity* (pp. 53–60). Sage.

Blevis, E. (2018). Seeing what is and what can be: On sustainability, respect for Work, and design for respect. *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems - CHI '18*, 1–14. https://doi.org/10.1145/3173574.3173944

Bolotova, A. (2012). Loving and conquering nature: Shifting perceptions of the environment in the industrialised Russian North. *Europe-Asia Studies*, *64*(4), 645–671. https://doi.org/10.1080/09668136.2012.673248

Boulding, K. E. (1966). The economics of the coming spaceship earth. In H. Jarett (Ed.), *Environmental Quality in a Growing Economy* (pp. 3–14). John Hopkins University Press.

Butzer, K. W. (1989). Cultural ecology. In G. L. Gaile & C. J. Willmott (Eds.), *Geography in America* (pp. 192–208). Merrill Publishing Co.

Campbell, A. D. (2008). Industrial design education and South African imperatives. *Image & Text: A Journal for Design*, *14*, 82–99.

Campbell, A. D. (2017). Lay designers: Grassroots innovation for appropriate change. *Design Issues*, *33*(1), 30–47. https://doi.org/10.1162/DESI_a_00424

Ceschin, F., & Gaziulusoy, I. (2016). Evolution of design for sustainability: From product design to design for system innovations and transitions. *Design Studies*, *47*, 118–163. https://doi.org/10.1016/j.destud.2016.09.002

Claes, D. H. (2014). The Arctic oil and gas scramble? In Lehmann & Ciccantell (Eds.), *Scarcity or plenty? Global resource political economy in the 21st century*. Lynne Rienner press.

Cross, N. (2018). Developing design as a discipline. *Journal of Engineering Design*, *29*(12), 691–708. https://doi.org/10.1080/09544828.2018.1537481

Douranou, K. (2018). *Embrace multiculturalism through arts-based workshops: Qualitative evaluation using visual representations* [Master's Thesis, University of Lapland]. https://lauda.ulapland.fi/bitstream/handle/10024/63337/Douranou.pdf?sequence=1&isAllowed=y

Eikill, G. O., Oftedal, B. C., & Statoil, A. (2007, April). Rig design philosophy key for harsh environment drilling in Barents Sea, Haltenbanken area. *Drilling Contractor*, 84–87.

Fuller, R. B. (1991). *Operating manual for spaceship earth*. Arkana.

Garin, N. (1991). *Dizayn dlya usloviy Kraynego Severa: Printsip preyemstvovaniya kul'tury korennogo naseleniya [Design for the environment of Far North: The principle of borrowing from indigenous material culture]* [Unpublished PhD Thesis]. Stroganov Moscow State University of Arts and Industry.

Garin, N. (2011). Dizain ideal'noi veschi [Design of an Ideal Object]. *Vestnik OSU [Herald of Orenburg State University]*, *128*. http://vestnik.osu.ru/2011_9/7.pdf

Gerasimov, I. P., Vendrov, S. L., Zonn, S. V., Kes', A. S., Kuznetsov, N. T., & Neyshtadt, M. I. (1975). Large-scale research and engineering programs for transformation of nature in the soviet union and the role of geographers in their implementation. *Materialy VI s'ezda Geograficheskogo Obschestva SSSR [Proceedings of the Sixth Congress of the Geographical Society USSR]: Papers of Plenary Sessions*, 3–18.

Gillings, M. R., & Hagan-Lawson, E. L. (2014). The cost of living in the Anthropocene. *Earth Perspectives*, *1*(1), 2. https://doi.org/10.1186/2194-6434-1-2

Goldsworthy, A. (1988). *Parkland: Andy Goldsworthy : Yorkshire Sculpture Park.* Yorkshire Sculpture Park.

Golovnev, A., Garin, N., & Kukanov, D. (2016). *Reindeer herders of Yamal (research materials for the Atlas of Nomadic Technologies)*. UrO RAN.

Golovnev, A. (1995). *Govoriashchie kultury: Traditsii samodiitsev i ugrov [Talking cultures : Samoyed and Ugrian traditions]*. Rossiiskaia akademiia nauk, Uralskoe otd-nie, In-t istorii i arkheologii.

Golovnev, A. (2017). Arkticheskii Etnodisain [Arctic Ethnodesign]. *Uralskii Istoricheskii Vestnik*, *2(55)*, 6–15.

Hardt, M. (2012). The story of the frozen ice or the art of sustainable design in the Arctic. In P. Tahkokallio (Ed.), *Arctic Design—Opening the discussion* (pp. 54–59). University of Lapland.

Härkönen, E., Jokela, T., & Yliharju, A.-J. (Eds.). (2014). *Snow design from Lapland: Initiating cooperation*. University of Lapland.

Helsinki (AFP). (2018, September 25). *Finnish indigenous Sami seek to end "exploitative tourism."* France 24. https://www.france24.com/en/20180925-finnish-indigenous-sami-seek-end-exploitative-tourism

Hill, F., & Gaddy, C. G. (2003). *The Siberian Curse: How communist planners left Russia out in the cold*. Brookings Institution Press.

Holland, O. (2019, February 9). *Scientists and designers are proposing radical ways to "refreeze" the Arctic*. CNN.Style. https://edition.cnn.com/style/article/refreeze-arctic-design-scn/index.html

Hvattum, M. (2001). Gottfried Semper: Between poetics and practical aesthetics. *Zeitschrift Für Kunstgeschichte*, *64*(4), 537–546.

Hyysalo, S., Pollock, N., & Williams, R. A. (2019). Method matters in the social study of technology: Investigating the biographies of artifacts and practices. *Science & Technology Studies*, *32*(3), 2–25. https://doi.org/10.23987/sts.65532

Hyysalo, S., & Usenyuk, S. (2015). The user dominated technology era: Dynamics of dispersed peer-innovation. *Research Policy*, *44*(3), 560–576. https://doi.org/10.1016/j.respol.2015.01.002

Irani, L., Vertesi, J., Dourish, P., Philip, K., & Grinter, R. E. (2010). Postcolonial computing: A lens on design and development. *Proceedings of the 28th International Conference on Human Factors in Computing Systems*, 1311–1320.

Jørgensen, D., & Sørlin, S. (2013). *Northscapes: History, technology, and the making of northern environments*. UBC Press.

Josephson, P. R. (1995). Projects of the century in Soviet history: Large-scale technologies from Lenin to Gorbachev. *Technology and Culture*, *36*(3), 519–559.

Khandwala, A. (2019, June 5). *What does it mean to decolonize design?* Eye on Design. https://eyeondesign.aiga.org/what-does-it-mean-to-decolonize-design/

Kimmelman, M. (2005, June 2). Art's last, lonely cowboy. *The New York Times Magazine*. https://www.nytimes.com/2005/02/06/magazine/arts-last-lonely-cowboy.html

Konola, S., & Kähkönen, P. (Eds.). (2015). *Arctic wears—Perspectives on Arctic clothing*. Lapin ammattikorkeakoulu.

Lapin Yliopisto / University of Lapland. (n.d.). *ArtGear – Bi-directional integration for young people 2016–2019 (ESR, European Social Fund, University of Lapland, Art Collective Piste & Artists' Association of Lapland)*. Retrieved October 20, 2019, from https://lacris.ulapland.fi/fi/projects/taidevaihde--kaksisuuntainen-kotoutumin(4b5c806e-8a45-467d-8ead-1d1916d30ea9).html

Lewis, S. L., & Maslin, M. A. (2015). Defining the Anthropocene. *Nature*, *519*(7542), 171–180. https://doi.org/10.1038/nature14258

Lindholm, M. (2014). *The Representation of Sámi People on Finnish and Norwegian tourism Websites in English. (Unpublished master's thesis)*. University of Jyväskylä.

MacCannell, D. (1992). *Empty meeting grounds: The tourist papers*. Routledge.

Manzini, E. (2019). *Politics of the everyday*. Bloomsbury Visual Arts.

Marchand, A., Awashish, K., Coocoo, C., Roth, S., Marques Leitão, R., Sportes, C., & Beaulé, C. I. (2018). Culture as a force for the future: Issues and ahallenges of Atikamekw cultural and socioeconomic affirmation through the creation and marketing of contemporary products. *Recherches Amérindiennes Au Québec*, *48*(1/2), 249–250.

Marques Leitão, R., & Marchand, A. (2012). Design as a means of empowerment within aboriginal communities in Quebec. In P. Tahkokallio (Ed.), *Arctic Design—Opening the discussion* (pp. 61–67). University of Lapland.

McPhail, J. F., Murfitt, A. W., & McMullen, W. B. (1976). Yukon River to Prudhoe Bay highway—Lessons in arctic design and construction. *Civil Engineering—ASCE*, *46*(2), 78–82.

Muller, M., & Druin, A. (2012). Participatory design: The third space in human– computer interaction. In J. Jacko, *Human–Computer Interaction Handbook* (pp. 1125–1154). CRC Press. https://doi.org/10.1201/b11963-57

Nardi, B. (2019). Design in the age of climate change. *She Ji: The Journal of Design, Economics, and Innovation*, *5*(1), 5–14. https://doi.org/10.1016/j.sheji.2019.01.001

Naum, M. (2012). Difficult middles, hybridity and ambivalence of a medieval frontier: The cultural landscape of Lolland and Falster (Denmark). *Journal of Medieval History*, *38*(1), 56–75. https://doi.org/10.1080/13044184.2011.644755

Nugraha, A. (2012). *Transforming tradition: A method for maintaining tradition in a craft and design context*. Aalto Univ., School of Arts, Design and Architecture.

Parker, W. H. (1980). The Soviet motor industry. *Soviet Studies*, *32*(4), 515–541. https://doi.org/10.1080/09668138008411324

Pashkevich, A., & Keskitalo, E. C. H. (2017). Representations and uses of indigenous areas in tourism experiences in the Russian Arctic. *Polar Geography*, *40*(2), 85–101. https://doi.org/10.1080/1088937X.2017.1303753

Pratt, M. L. (1991). Arts of the contact zone. *Profession*, *1*, 33–40.

Prime Minister's Office. (2013). *Finland's Strategy for the Arctic Region 2013. Government resolution on 23 August 2013* (No. 16/2013; Prime Minister's Office Publications, p. 71). Prime Minister's Office. www.vnk.fi/english

Pschetz, L., & Bastian, M. (2018). Temporal design: Rethinking time in design. *Design Studies*, *56*, 169–184. https://doi.org/10.1016/j.destud.2017.10.007

Rontti, S., Miettinen, S., Kuure, E., & Lindström, A. (2012). A laboratory concept for service prototyping—Service Innovation Corner (SINCO). *ServDes.2012 Conference Proceedings Co-Creating Services*, *67*. http://www.servdes.org/wp/wp-content/uploads/2012/02/A-Laboratory-Concept-for-Service-Prototyping-%E2%80%93-Service-Innovation-Corner-SINCO1.pdf

Schultz, T., Abdulla, D., Ansari, A., Canlı, E., Keshavarz, M., Kiem, M., Martins, L. P. de O., & J.S. Vieira de Oliveira, P. (2018). What is at stake with decolonizing design? A Roundtable. *Design and Culture*, *10*(1), 81–101. https://doi.org/10.1080/17547075.2018.1434368

Selye, H. (1976). *The stress of life*. McGraw-Hill Book Company.

Smit, B., & Wandel, J. (2006). Adaptation, adaptive capacity and vulnerability. *Global Environmental Change*, *16*(3), 282–292. https://doi.org/10.1016/j.gloenvcha.2006.03.008

Smith, L. (2012). *The New North. The World in 2050*. Profile Books.

Steffen, W., Crutzen, P. J., & McNeill, J. R. (2007). The Anthropocene: Are humans now overwhelming the great forces of nature. *AMBIO: A Journal of the Human Environment*, *36*(8), 614–621. https://doi.org/10.1579/0044-7447(2007)36[614:TAAHNO]2.0.CO;2

Stokke, O. S. (2013). The promise of involvement: Asia in the Arctic. *Strategic Analysis*, *37*(4), 474–479.

Szocik, K., & Wójtowicz, T. (2019). Human enhancement in space missions: From moral controversy to technological duty. *Technology in Society*, *59*, 101156. https://doi.org/10.1016/j.techsoc.2019.101156

Tahkokallio, P. (Ed.). (2012). *Arctic Design—Opening the discussion*. University of Lapland. http://www.ulapland.fi/loader.aspx?id=e253ba11-dcd0-41ce-b394-f6530226eb82

Timofeychev, A. (2017, August 16). *Virgin lands campaign: How the USSR tried to counter food shortages*. Russia Beyond. https://www.rbth.com/multimedia/history/2017/08/16/virgin-lands-campaign-how-the-ussr-tried-to-counter-food-shortages_823652

Tompuri, H., & Kalla, A.-M. (2014). *DAVVI multidisciplinary Academic Training Project 2010-2014*. University of Lapland. https://www.ulapland.fi/loader.aspx?id=-735fa4a2-d7cf-4547-b511-00effd696a68

Trompenaars, F., & Hampden-Turner, C. (1998). *Riding the waves of culture: Understanding cultural diversity in global business*. McGraw-Hill.

Usenyuk, S., & Gostyaeva, M. (2017). Arctic tourism: The design approach with reference to the Russian North. In *The Interconnected Arctic—UArctic Congress 2016* (pp. 231–241). Springer.

Usenyuk, S., Hyysalo, S., & Whalen, J. (2016). Proximal design: Users as designers of mobility in the Russian North. *Technology and Culture*, *57*(4), 866–908. https://doi.org/10.1353/tech.2016.0110

Usenyuk-Kravchuk, S., Garin, N., Klyusov, N., Dedevich, N., & Pokataeva, M. (2019). Light, local, repairable: A designerly exploration into an ideal all-terrain vehicle. *The International Journal of Designed Objects*, *13*(3–4). https://doi.org/10.18848/2325-1379/CGP/v13i02/1-14

Usenyuk-Kravchuk, S., Garin, N., Trofimenko, A., & Kukanov, D. (2020). Arctic design: Revisiting traditional fur clothing within the daily routine of reindeer nomads. *Heliyon*, *6*(2), e03355. https://doi.org/10.1016/j.heliyon.2020.e03355

Vattimo, G. (1995). Postmodernity and new monumentality. *Res: Anthropology and Aesthetics*, *28*, 39–46. https://doi.org/10.1086/RESv28n1ms20166928

Vettese, A., Hapkemeyer, A., Messner, R., & Fulton, H. (2005). *Hamish Fulton: Keep moving*. Charta/Museion.

Ward, B. (1966). *Spaceship Earth*. Columbia University Press.

Yamanaka, Y., & Cook, D. R. (2016, March). *A culturally responsive research model for the Arctic: Reflections on a case of collaboration with Indigenous communities in Arctic research*. AOS 2016: 3rd Biennial Arctic Observing Summit, Fairbanks, Alaska. https://www.arcticobservingsummit.org/sites/default/files/Yamanaka-REVISEDRC-2016-1-Feb-AOS%20Short%20Statement%20YY%20DC%20.pdf

Ylä-Kotola, M. (2012). Arctic design. Is there such a thing? In P. Tahkokallio (Ed.). *Arctic Design. Opening the discussion* (pp. 12–15). University of Lapland.

Young, O. R. (2012). Arctic tipping points: Governance in turbulent times. *AMBIO*, *41*(1), 75–84. https://doi.org/10.1007/s13280-011-0227-4

Zamyatina, N. (2016). Arkticheskaia urbanizatsiia kak frontir [Arctic urbanization as a frontier]. *Nauchnyi Vestnik YaNAO. Obdoriia: Istoriia, Kul'tura, Sovremennost'*., *3(92)*, 114–120.

Zamyatina, N., & Pilyasov, A. (2018). The new theory of the Arctic and Northern development: Multi-scale interdisciplinary synthesis. *Arctic and North*, *31*, 5–27. https://doi.org/10.17238/issn2221-2698.2018.31.5

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Expanding Nature Photography: Fostering an Innovative use of Cultural Ecosystem services in the Arctic

This chapter discusses the potential of art and design education to support renewable economies in the North and the Arctic through the concept of *Arctic Art and Design* (AAD). Until recently, industries that exploit natural resources were the foundation of the Arctic economy. Meanwhile, the material and cultural heritage of the Arctic was commonly connected to Indigenous handicrafts and the skilful use of natural materials. Recent research indicated change for both phenomena (Nordic Councils of Ministers, 2018). Economic opportunities in modern industries, especially for young people, are recognised in many Arctic areas. Innovative uses of traditional renewable natural and cultural resources form the basis of recent sustainable place-based business opportunities, such as nature tourism and creative enterprises in the rural Arctic.

In this study, we investigated the potential of art and design education to support renewable economies, using the concept of *Ecosystem Services* (ES) and, particularly, *Cultural Ecosystem Services* (CES) and place-making, as our theoretical and practical framework. This framework allowed us to rethink the ways in which art and design education, creative entrepreneurs, businesses, and communities may collaborate, through art and design, in place-based development in the rapidly changing North and the Arctic.

Arctic nature provides endless inspiration for art, design, craft, media, and architecture (Hautala-Hirvioja et al., 2019), which can be seen as CES. However, this chapter does not focus on nature as inspiration, but as an entity with social and cultural dimensions and a space for artistic activity.

As a case study of cultural ecosystem initiatives in art and design education in higher education, we considered the Master's Degree Programme in *Applied Visual Arts and Nature Photography*: a joint development project of Kuusamo Municipality in North-East Finland and the Faculty of Art and Design at the University of Lapland. The need to develop artists' training was noticed earlier, in the context of AAD development. Artists with a traditional artistic training have often lacked the will and skills to work as entrepreneurs and service producers (Huhmarniemi & Jokela 2019; Kugapi, Huhmarniemi

& Laivamaa, 2020) and/or have not possessed sufficiently specific knowledge about the Arctic to apply their skills to particular northern circumstances. These gaps necessitated new models for educating Arctic artists and designers.

The aim of the Master's Degree Programme, based in Kuusamo, was to educate innovative experts in applied visual arts and nature photography who were familiar with the Northern conditions and environment; they were also deemed to be capable of responding to future challenges in the increasing regional eco-tourism and welfare services by utilising CES. As examples of results, we considered three Art-based Action Research (ABAR) projects, carried out as students' master's theses, and analysed them to illustrate the ways in which AAD, especially nature photography, can use CESs to merge traditions and innovations and contribute to local economies and well-being. The Master's Degree Programme was based on experiences of the University of Lapland's one-time Master's Programme in Applied Visual Arts (Jokela et al., 2013) and its continuing international Arctic Art and Design Master's Programme, combining socially-engaged contemporary art activities with participatory design and utilising the best aspects of these two fields of education (Coutts et al., 2018; Jokela & Coutts, 2018; Jokela et al., 2020). The authors of this chapter led, taught on, and evaluated the results of the Kuusamo development project.

We conclude this chapter by discussing means of strengthening vitality and regional development through art and design education based on Northern and Arctic cultural ecosystem services. We consider how these initiatives act as place-based regional development approaches and revitalisation activities.

Arctic Art and Design for Sustainability

This chapter is based on the assumption that art and design, as part of a fast-growing creative industry, can contribute to renewable economies in the Arctic. We use the term Arctic Art and Design (AAD) to illustrate innovative art and design that is strongly linked to the Arctic's environment, cultures, traditions, and special geographic circumstances, such as long winters and long distances. AAD is a means to enhance sustainable development in the Arctic and contribute to renewable economies in remote villages, as well as in Arctic cities and creative hubs. AAD aims to apply art to societal and economic needs in the Arctic and is thus related to the development of applied visual arts (Jokela, 2013), in which strategies and methods of community art and service design have been combined (Härkönen & Vuontisjärvi, 2018; Jokela & Tahkokallio, 2015). Our focus is on applied visual arts (Coutts & Jokela, 2019) art-based services that are rooted in places,

communities, and traditions, but are future-oriented, leading to innovations and new livelihoods for artists in the Arctic, developed in a sustainable manner.

While sustainable development in the Arctic has been discussed in various contexts for distinct political and local purposes and discourses (Fondahl & Wilson 2017; Gad, Jacobsen & Strandsbjerg, 2019; Tennberg, Lempinen & Pirnes, 2019), the cultural and social dimensions of sustainability are particularly relevant in this chapter. Sustainable AAD productions respect cultural diversity and heritage and are produced in dialogue with local people so that economic benefits can be shared with them (Jokela et al., in press). The results of the long-term development of AAD have been reflected and presented in research conducted by the Arctic Sustainable Arts and Design (ASAD) network at the University of the Arctic (ASAD, 2020; Jokela & Coutts, 2018: Jokela et al., 2020).

AAD transmits the heritage of Arctic nature and culture, and avoids cultural appropriation of indigenous cultures, but prompts collaboration between indigenous and non-indigenous artists and designers in the Arctic (Huhmarniemi & Jokela, 2020). AAD as a concept highlights a way of integrating art, design, and creative services cohesively with Arctic eco-culture. The concept follows the idea of *duodji* [Sámi craft], which sees Sámi art, handcrafts, and design of everyday objects as the fusion of expression, production, and a way of life (Guttorm, 2015). AAD, as part of a creative renewable economy, can be seen as one Arctic model of smart specialisation for a green economy (Woien, Kristensen & Teräs, 2019) and as a model that aims for economic and social resilience (Giacometti & Teräs, 2019) in rapidly changing Arctic regions. In AAD, traditions and innovation merge.

Creative Economies and Cultural Ecosystem Services

Since the large-scale resource extraction of finite natural resources in the Arctic is increasingly questioned, we promote a move towards more sustainable business practices; namely, renewable economies. Creative industries, and AAD in particular, can trigger the development of new services and business opportunities that benefit the economy while safeguarding place-based eco-cultures. The foundation of AAD relates to that of the cultural and creative industries (Hesmondhalgh, 2007), otherwise described as creative economies (Howkins, 2001). A creative economy comprises the production of creative goods and products, as well as creative services, ranging from high art and education to popular culture and commercial fields of design, advertising, and game production. Charles Landry and Franco Bianchini (1995, p. 4) anticipated, in 1995, that

'the industries of the twenty-first century will depend increasingly on the generation of knowledge through creativity and innovation.' The economic impact of creative industries was recently measured by the United Nations Conference on Trade and Development (UNCTAD, 2018), including their impact on Nordic Arctic countries (Olsen et al., 2016), and was found to exceed that of the driver industry. In 2020, many industries are facing a turning point due to the current coronavirus pandemic and it is difficult to predict how these circumstances will affect the future scale of heavy industries, creative economies, and service production. We expect that the climatic impact of all goods and services will be weighed in future and that art-based methods will be increasingly implemented to create added value.

Several studies (Nordic Councils of Ministers, 2018; Olsen et. al., 2016; Petrov, 2016, 2017) have identified the processes of creative economic development, but they have focused primarily on challenges, such as population decline, high production costs due to long distances, and increasing globalisation: the development of art and design for creative economies is under-researched (Jokela et al., in press). Craftspeople in Lapland notably function as entrepreneurs and microentrepreneurs, but prioritise creativity, rather than business-orientation (Kugapi, Huhmarniemi & Laivamaa, 2020). The material and cultural heritage of the Arctic has largely been connected with indigenous crafts, but not seen as having economic potential; however, the shift towards the innovative use of AAD is now underway (Jokela et al., in press; Kugapi, Huhmarniemi & Laivamaa 2020; Huhmarniemi et al., in press).

AAD focuses on the economic potential of renewable natural and cultural resources, which are plentiful in the Arctic. The notion of Ecosystem Services (ES*)* (Milcu et al., 2013) directs attention towards the use and protection of nature and its social, cultural, and economic impact on individual, community, and societal levels in the Arctic. While ecosystem services as natural resources, such as water, wood, natural fibres, and food, constitute a renewable bioeconomy (Teräs et al., 2014), Cultural ecosystem services (CES) also includes: the 'non-material benefits obtained through spiritual enrichment, cognitive development, reflection, recreation, education, and aesthetic experiences' (Millennium Ecosystem Assessment, 2005, p. 4).

Recognition of CES is important for maintaining the balance between the industrial use and protection of nature and the social, cultural, and economic relations in the Arctic. Mobilising CES as binding elements between social and ecological conceptual constructs is the core idea of the sustainability ideal (Milcu et al., 2013). Thoroughly accounting for CES would be helpful for balancing primarily economic considerations

and facilitating a more inclusive socio-ecological approach by exploring the interactions between social, ecological, and economic processes (Hernshaw & Cullen, 2010). Cultural, experiential, and other non-material values of nature have been underlined by some researchers (Chan et al., 2012; Jokela et al., in press), but less attention has generally been paid to them than to monetary and ecological values in ecosystems.

Besides art, many people enjoy aesthetic and transformative experiences in nature; for example, people value landscapes for their beauty (Lindhjem, Reinvang & Zandersen, 2015) and a 'sense of place' that includes locally and culturally significant stories and heritage (Hølleland et al., 2017). These aspects are essential for renewable creative industries, because they affect the ways in which people take care of their well-being and spend their leisure time. CES, therefore, have significance for nature tourism, eco-tourism, cultural tourism, and recreation (Müller & Viken, 2017; Rantala et al., 2019), which are often marketed and publicised with the help of creative industries; for example, the Arctic film industry and nature photography have played a role in establishing winter tourism in Lapland. When considering creative services and AAD, there are many opportunities for collaboration between art and design and tourism as renewable economies for the sustainable future of the Arctic. Higher education in art and design considers CES in the Arctic to foster sustainable development, cultural sustainability, and people's well-being.

The Master's Degree Programme in Applied Visual Arts and Nature Photography

To date, CES have primarily been studied in the context of ecological science, rather than from the point of view of art, design, or nature photography and tourism studies. More research and discussion about the relationships between CES and creative economies is needed, together with consideration of art and design education as a potential driver of creative sustainable economies.

As an example of cultural ecosystem initiatives where tradition and innovation merge, we introduced the Master's Degree Programme in Applied Visual Arts and Nature Photography that was carried out as a joint project by the Kuusamo Municipality and the Faculty of Art and Design at the University of Lapland in Finland, 2017–2020. The aim of the project was to develop a new Masters´ Degree to educate innovative experts in applied visual arts who were familiar with the Northern traditions, circumstances, and nature and able to respond to future challenges in the growing fields of eco-tourism and welfare services in the region. The Masters´ Degree focused on nature

photographers and visual artists as people with the expertise to work with various stakeholders and the ability to act as entrepreneurs and service providers in multidisciplinary development projects.

The Kuusamo Municipality in North-East Finland provided an excellent environment for this education, since the area has dazzling natural sites, innovative entrepreneurs committed to sustainable development, and open and cooperative local stakeholders and collaborators. While Kuusamo was an excellent learning environment and community for collaboration, the programme, in turn, supported the branding of Kuusamo as Finland's leading pioneer in nature photography and developer of nature photography services, involving nature photography sites, events, and exhibitions.

We aimed to consider the ecological, social, cultural, and economic effects of the use CESs and develop cooperation across these aspects of sustainable development. Students carried out joint projects and Masters´ theses using an ABAR approach (Jokela 2019; Jokela et al., 2019). The targets for the students' ABAR projects and nature photography were chosen in discussion with representatives of Kuusamo Municipality. In addition to employing a place-based strategy, the students aimed to develop AAD and the use of CES as a response to regional challenges' impact as the focus of the ABAR projects. During the ABAR projects, the students carried out literature reviews; mapped the place, community, and potential for CES; and framed their aims, practical interventions, reflections, and presentations, sometimes as group and joint exhibitions. Analyses and conceptualisation of the processes and results were presented as written research reports in their theses. Students were encouraged to:

1. Consider cultural ecosystem services, place-based strategies, and cultural sustainability.
2. Create new artistic applications, innovations, and art-based services, and plan their integration into regional development and the local creative economy and/or their use as an intervention in environmental conflicts.
3. Enhance social sustainability and a sense of community in Kuusamo.

Swamps, Traditional Healers' Knowledge and Slow Nature Photography Services

In their ABAR project on swamps, traditional healers´ knowledge, and *Slow Nature Photography* (SNP) services, students Riitta Attila (2020), Anu Tossavainen (2020), and Linda Sainio (2020) focused on a peatland ecosystem that was marginalised in a public debate concerning nature, well-being, and healing. Swamps are significant carbon-stor-

Figure 1. Nature observation in the swamp with the guidance of traditional healers. Photos: Linda Sainio, 2018. Collage 2020.

ing ecosystems that were previously disparaged as wastelands and often drained. The research conducted in Kuusamo revealed the hidden potential of swamps.

Conceptually, the research approach focused on the ecosystem, place, and representation. The ABAR methodology consisted of a multisensory place study and nature photography as artistic methods. The research process consisted of interviews with traditional healers, physical experiences of the swamp, nature photography, and artistic work. All the artistic and practical research cycles were informed by cultural knowledge of swamps and the skills of traditional healers.

The research highlighted the local cultural ecosystem, artistically, in a multisensory nature photography exhibition entitled *Swamp Heals*. The developed and represented elements of well-being and caring created new ways of perceiving peatlands. Examining the unity between human and swamp natures increased reciprocal and interactive attitudes toward nature as perceived in the ecosystem approach. The research result-

Figure 2. Calming down in nature opens the body to experience nature more deeply. Photo: Anu Tossavainen, 2019.

ed in positive representations of peatlands and had a positive effect on the traditional healers involved: many of them said that the process was a positive, empowering, and thought-provoking experience.

The developed Slow Nature Photography (SNP) method deepened relationships with nature by its application to visual arts and nature photography. The students described the method as follows: 'A slowly rising process of consciousness in which photography does not stop at the subject, but binds the photographer, the subject, and the place to natural integrity' (Attila, 2020, p. 180). Through the means of multisensory and bodily perceptions, new experiences in nature were created and, thus, SNP could be used to sensitise human relationships with nature.

Figure 3. Right. Nature in me. Photo, multiple exposure. Anu Tossavainen, 2018. Left. By sinking into the swamp its mysterious views opened. Photos: Riitta Attila, 2018.

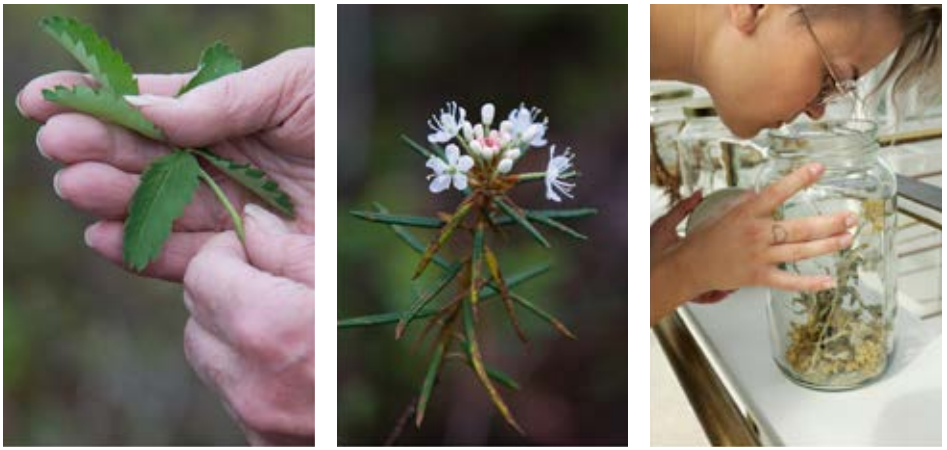

Figure 4. Many ways of sensing plants of the swamp are transferred to the exhibition gallery. Photos: Linda Sainio 2018. Collage 2020.

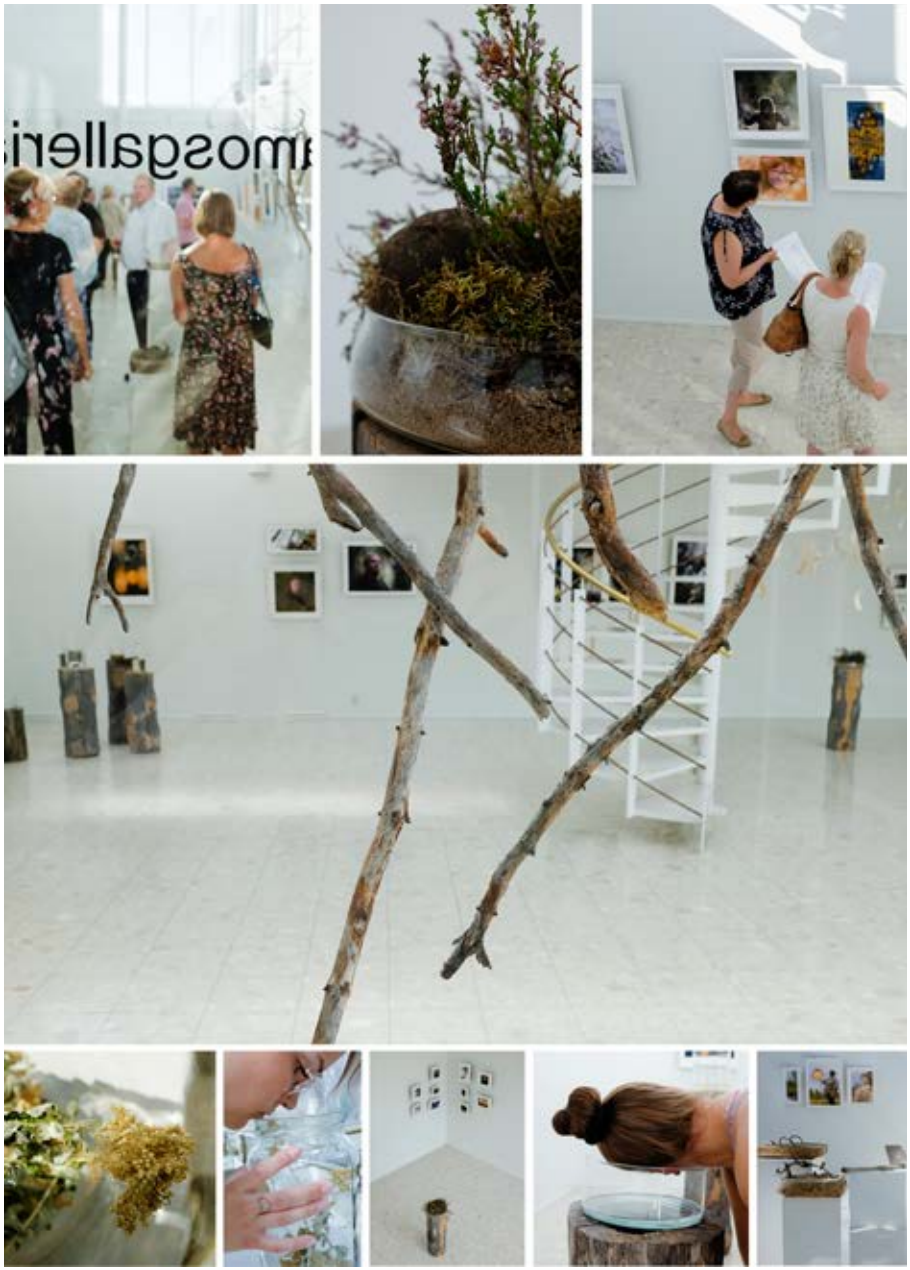

Figure 5. *Swamp Heals* Exhibition. Photos: Linda Sainio, 2018. Collage 2020.

The SNP method can be applied to photography-based tourism services when the photographer portrays a person in nature and/or undertakes guided photography tours as a service to enable people to experience nature within short distances. The method can also be used for the benefit of communities; for example, by making nature trips to hidden places and, in so doing, making invisible places visible. In this case, in addition to well-being effects, the establishment of participants in places is also achieved.

Nature Photography as an Intervention in Conflicted Forest Relationships

Finns are said to 'live in the forest'. Finnish forest ecosystem services are diverse and CES play an important role in the formation of relationships with the forest. Forest relationships differ greatly from each other, due to conscious and unconscious factors (Karhunkorva, Kärkkäinen & Paaskoski, 2017), when tradition and innovation meet. Several large paper mills have been planned for Northern Finland for economic reasons; simultaneously, binding carbon through forest growth has been discussed. Forest recreation, tourism, traditional hunting, reindeer husbandry, and other industries all bring their own viewpoints to the conflicted forest discussion and media debates have focused on the escalation of opinions.

Students Janette Backman (2020) and Kalle Immonen (2020) approached the issue from the perspective of applied art and nature photography. They aimed to develop an ABAR process through which the different parties to the discussion could familiarise themselves with each other's views, values, and attitudes. The goal was to create an art-based forum for dialogue between forest industries and other users of forests. Nature photography was developed as a tool for conflict resolution and reconciliation. Nature photography served as a tool for participants to consider their own forest relationships and to present their forest relationships to the public and to opposing parties in the conflict. Through nature photography, a variety of forest relationships were foregrounded and different views were processed in relation to forestry, other uses of forests, and nature conservation. In parallel, local forest ecosystem services were highlighted.

The approach to art-based action research was communal and inclusive. Several forest trips, accompanied by nature photography, illustrated the forest relationships participants formed. The participants were active in the process, choosing locations and themes that their photographs could highlight. They also selected the photographs for the final exhibition. The research resulted in two photography exhibitions compiled by Backman. They were on display at the Pilke Science Centre in Rovaniemi in November

Figure 6. Forest relations portrait. A forest machine driver. Photo: Kalle Immonen, 2018.

Figure 7. Forest relation portrait. Harri Kemppainen in his forest plot in Kuusamo. Photo: Janette Backman, 2018.

Figure 8. Photo exhibition as a dialogical space between conflicted forest relations. Photo: Linda Sainio, 2018.

2018 and at the Kaamos Gallery in Kuusamo House in Kuusamo in December 2018. The exhibitions aimed to enhance visitors' reflections on different forest relationships.

As a result, various forest relationships were highlighted and the project gained visibility for the theme through the exhibitions. Students also concluded that some of the oppositional views of the participants converged and participants identified common interests to enable constructive dialogue. The participants expressed their understanding of, and thoughts regarding, various forest-oriented goals; thus, the study showed how art could encourage people to engage in dialogue and act as a mediators of contradictions.

A Virtual Natural Landscape Promoting Well-being

The Kuusamo natural landscapes are known for their rugged beauty and their association with Finnish traditions of national landscape. In addition to visitors admiring the landscape, discussions on 'green care', referring to CES for health and well-being, have increased in Kuusamo. The nature experience has positive effects on physical and mental well-being (Tyrväinen et al., 2014; Vehmasto, 2015), which are commonly achieved by walking, observing, and contemplating in nature. However, accessing nature can be

Figure 9. *Tuokio* installation and virtual campfire waiting for audients. Photo: Osku Tuominen, 2019.

challenging, even impossible, for people with limited mobility or who are confined in hospitals, prisons or similar circumstances.

In his ABAR project, Osku Tuominen (2020) studied the effects of a virtual nature experience in cooperation with the Kuusamo Hospital and Health Center. Since elderly patients there had no access to natural Kuusamo landscapes, the student provided them with virtual CES. Thereafter, Tuominen and his colleague, artist Jonna Kalliomäki, built a second demonstration of his study in a gallery space as an exhibition called *Tuokio* [Moment], which combined installation art and a virtual campfire. The campfire and the environment were presented with virtual glasses and reconstructed a real campfire with firewood. Fresh live spruce seedlings and the scent of burnt wood supported the viewer's experience of the landscape as seen through the glasses.

Tuominen applied a simple virtual glass technique, in which the user turning their head affected their field of vision (i.e. what the person could see inside the glasses). Videos can be made for virtual glasses, which enable the viewer to see the landscape around them by turning their heads. Virtual videos are shot with specialised 360° cameras.

Whereas a normal camera limits the viewing angle to that of the camera lens, the entire landscape can be captured when shooting 360˚ videos. Creating a virtual environment with advanced 360˚ cameras is easy, because it merely entails saving recordings of the environment to memory cards, as with standard video.

An analysis of experiences from both the nursing facility and the gallery environment showed that even a brief virtual nature experience aroused feelings that are commonly associated with stress relief. Participants who responded to the questionnaires described their feelings as refreshed, calm, relaxed, and revitalised. Participants, in their own words, experienced both mental and physical 'recharging' from their brief periods in virtual nature. Medical calibration also verified that patients in hospital could benefit from access to nature through technology. Tuominen's artistic experiments showed, as did those of Annerstedt and colleagues (2013), that exposure to virtual nature had positive health effects even after short treatment periods of 5–15 minutes. Recently, the use of virtual reality (VR) technology in the treatment of mental and physical health problems has attracted growing global interest. Overall, research has shown that the use of VR treatment is easy, safe, and generally pleasant for patients (Dascal et al., 2017). Tuominen also presented interesting suggestions for further development and predicted that virtual nature experiences will play an increasingly important role in in both healthcare and tourism in the near future.

Discussion of Cultural Ecosystem Services and Place-based Development

AAD initiatives and the creative use of CES in Kuusamo were closely connected to a place-based strategy. Place-based strategy can be considered as an alternative to conventional top-down, single-sector, national development projects (Daniels, Baldacchino & Vodden, 2015). The practice of using places' and communities' unique capacities was expected to have potential for encouraging economic progress, which a number of researchers have proposed as a strength of place-based development (see Milone & Ventura, 2010; Vodden, Gibson & Baldacchino, 2015). Building on the existing traditional strengths of Kuusamo, this approach focused on CES and the unique features of the region to promote and create innovative art-based and photography-based services. ABAR projects in Kuusamo proved to play a role in the identity politics of remote and rural places, as foci for their communities.

Ecosystems have an effect on the diversity and vitality of cultures in the North and the Arctic, influencing the different types of social relationships and regional identities that are established in communities (Stephen, 2018). The social relationships of Kuusamo as a recreational tourism and nature photography hub, for example, differ in many respects from those of reindeer herding, agricultural, and administrational centres in the Arctic. Climate change and the exploitation of natural resources have caused changes in the cultures and livelihoods bound to ecosystems, which were also a topic of discussion in Kuusamo. Students and the participants in their projects pondered whether skiing tourism will continue in the future, how planned ore mining will affect nature tourism, and how increases in forest harvesting will harm other nature-based livelihoods. Visualisations of nature relationships fostered reconciliation that could later be applied for regulating forest use.

Following an evaluation of ABAR studies in Kuusamo, we argued that a notable relationship between nature and the fulfilment of human needs could be demonstrated in Arctic CES. This became evident when considering swamp ecosystems and analysing the impact of experiences through VR technology. We saw that CES offered a theoretical and practical framework for rethinking the ways in which creative entrepreneurs can collaborate with communities to use local natural, cultural, and social resources. Such collaboration, of course, must be undertaken in a sensitive way that is respectful of the unique nature, culture, and heritage of the Arctic and considers megatrends such as climate change, globalisation, and urbanisation (Nordic Council of Ministers, 2011; Stephen, 2018).

Besides material and social relationships, northern cultures comprise spiritual and religious dimensions and values. Criticism of CES has noted that spiritual and aesthetic cultural values are not best captured by instrumental or consequentialist thinking (Cooper et al., 2016). Attitudes towards the use of CES are partly subjective, since they are tightly bound to human values and behaviour, as well as to social and cultural institutions and economic and political organisations. In the Arctic, they are also bound to indigenous and non-indigenous issues and relationships. That was not the focus of discussion in Kuusamo, but an important issue when thinking about AAD education in the wider context of the circumpolar North and the Arctic, which calls for a certain cultural sensitivity in approaching AAD activities. The use of ABAR as an approach that bases activities in places and communities fosters such sensitivity and ethical thinking, as happened in the studies in Kuusamo.

Discussion of Revitalisation, Tradition and Innovation in Art and Design Education

Discussion of the role of tradition and innovation in art and design education could be explored through ABAR in Kuusamo. The essence of innovation is often seen as almost the opposite of tradition. In art and design, the notion of innovation is often equated with novel and unusual solutions (usually products) for business, marketing, and commercial applications; by contrast, tradition is often associated with customs, conventions, habits and, occasionally, also with ritual and ceremony. Cultural revitalisation has become a key concept for restoring traditional values in socio-cultural contexts. As a movement, revitalisation includes elements of both tradition and innovation. Auclair and Fairclough (2015) described revitalisation as a practice that renews and remakes cultural traditions that are part of the social construction. In the Kuusamo project, utilising CESs was connected to the revitalisation of local eco-cultures, and traditional ways of living with nature, in contemporary society and the modern economy.

ABAR initiatives in Kuusamo showed that the use of CES in AAD was not only an economic innovation, but also a social one. ABAR in Kuusamo revealed that revitalisation does not mean returning to a historical culture and identity that would be 'authentic' or unmixed (Huhmarniemi & Jokela, 2020). Revitalisation is based on interpretations of traditions and history that change according to our sources of historical knowledge, as well as personal and communal perceptions, judgements, and values. Revitalisation by means of AAD does not refer only to cultural practices, but to places, villages, and wider districts that have regional uniqueness and capacity for vitality. In the Kuusamo case, revitalisation was used as an approach to enhance local eco-culture, relationships with nature and landscapes, and CES. Its power was in line with Huhmarniemi and Jokela's (2020) assertion that revitalisation fosters cultural continuation, intergenerational knowledge, reconstruction of traditional skills (such as nature-based healing), and support for local cultural identities. Applied arts can act as revitalisers and reformers of regional eco-culture, in turn strengthening the capability, well-being, and identity of the area's inhabitants.

In Kuusamo, the revitalisation of Northern eco-culture through nature photography could be seen as an innovation that opened new perspectives for considering CESs. This intervention paralleled research at the Center for Futures Studies in Finland. Katariina Heikkilä and Anna Kirveennummi (2013) noted that, in the future, new nature-based welfare services and products will emerge at the interface of social and technologi-

cal innovations. This phenomenon is already visible in many industries, and ongoing changes in the operating environment reinforce this development. Innovations are being developed for green health and well-being, green entertainment, green buildings, and green care (Vehmasto, 2014), all of which are potential fields for developing applied visual arts.

Conclusion

The cycles of ABAR conducted by students in the Applied Visual Art and Nature Photography Programme highlighted various opportunities for innovative applications of AAD in relation to CESs. Innovative art-based services and socially-engaged art respect tradition, sustain ecosystems, and contribute to the future careers of professional artists and photographers in the Arctic. This development of AAD showed that combining applied visual arts and identified CES with a place-based strategy for regional development is a way to utilise the strengths of northern places and communities. Applied visual arts also function as an engine for the revitalisation and reform of regional eco-cultures.

Kuusamo as a location for the Programme supported the utilisation of CES and we concluded that innovation in creative economies is not restricted to cities, but can also be fostered in nature tourist destinations, especially if tourism builds a market for art-based design and services. Enhancement of education, creativity, and innovation is a key to the next stage of the development process towards AAD as a creative renewable methodology (Jokela et al., forthcoming). Higher education in AAD has an important role to play in enhancing creative capacity and promoting sustainable futures in the northern and Arctic regions.

References

Annerstedt, M., Jönsson, P., Wallergård, M., Johansson, G., Karlson, B., Grahn, P., …Währborg, P. (2013). Inducing physiological stress recovery with sounds of nature in a virtual reality forest – results from a pilot study. *Physiology & Behavior, 118*, 240–250. DOI: 10.1016/j.phys-beh.2013.05.023

Attila, R. (2020). Perinnehoitajien tietotaidon ja luontokuvauksen kohtaamisia [Encounters between traditional healers' know-how and nature photography]. In T. Jokela, M. Huhmarniemi & J. Paasovaara (Eds.) *Luontokuvaus soveltavana taiteena [Nature photography as an applied art],* (pp. 183–190). University of Lapland.

Auclair, E., & Fairclough, G. (2015). Living between past and future: An introduction to heritage and cultural sustainability. In E. Auclair & G. Fairclough (Eds.), *Theory and practice in heritage and sustainability: Between past and future* (pp. 1–22). Routledge.

ASAD. (2020). Arctic sustainable Arts and Design Thematic Network. http://www.asadnetwork.org/

Backman, J. (2020). Luontokuva sillanrakentajana – dialogisen tilan luominen soveltavan kuvataiteen keinoin [Nature photography as a bridge builder - creating a dialogical space by means of applied visual art]. In T. Jokela, M. Huhmarniemi & J. Paasovaara (Eds.) *Luontokuvaus soveltavana taiteena [Nature photography as an applied art]* (pp. 208–218). University of Lapland.

Chan, K., Satterfield, T., & Goldstein, J. (2012). Rethinking ecosystem services to better address and navigate cultural values. *Ecological Economics*, 74, 8–18. DOI:10.1016/j.ecolecon.2011.11.011

Cooper, N., Bardy, E., Steen, H., & Bryce R. (2016). Aesthetic and spiritual values of ecosystems: Recognising the ontological and axiological plurality of cultural ecosystem 'services.' *Ecosystem Services, 21*(B), 2182–29. http://dx.doi.org/10.1016/j.ecoser.2016.07.014

Coutts, G., Härkönen, E., Huhmarniemi, M., & Jokela, T. (Eds.) (2018). *The lure of Lapland: A handbook of Arctic art and design.* University of Lapland. URN:ISBN:978-952-337-125-5

Coutts, G., & Jokela, T. (2019). Applied Visual Arts. In J. B. Hickman, K. Freedman, E. Hall & N. Meager (Ed.). *The International Encyclopedia of Art and Design Education*. Wiley.

Daniels, J., Baldacchino, G., & Vodden, R. (2015). Matters of place: The making of place and identy. In K. Vodden, R, Gibson, & G. Baldacchino (Eds.), *Place peripheral: Place-based development in rural, island, and remote regions* (pp. 23–40). ISER Books.

Dascal, J., Reid M., Ishak W., Spiegel B., Recacho J., Rosen B., & Danovitch I. (2017). Virtual reality and medical inpatients: a systematic review of randomized, controlled trials. *Innov Clin Neurosci, 14*(1–2), 14–21. https://innovationscns.com/virtual-reality-and-medical-inpa-tients-a-systematic-review-of-randomized-controlled-trials/

Fondahl, G., & Wilson, G. N. (Eds.) (2017). *Northern sustainabilities: Understanding and addressing change in the circumpolar world*. Springer Polar Sciences. Springer Nature. ISBN: 978-3-319-46148-9

Gad, U., Jacobsen, M., & Strandsbjerg, J. (2019). Introduction: sustainability as a political concept in the Arctic. In. U. P. Gad & J. Strandsbjerg (Eds.), *The politics of sustainability in the Arctic: reconfiguring identity, space and time* (pp. 1–18). Routledge.

Giacometti, A., & Teräs, J. (2019). Regional economic and social resilience: An exploratory in-depth study in the Nordic Countries. *Nordregio report 2019:2.* Doi: 10.30689/R2019:2.1403-2503

Guttorm, G. (2015). Contemporary duodji: A personal experience in understanding traditions. In T. Jokela & G. Coutts (Eds.), *Relate North: Art, heritage and identity* (pp. 60–77). Lapland University Press. URN:ISBN:978-952-310-971-1

Hautala-Hirvioja, T., Holt, Y., & Mäkikalli, M. (Eds.) (2019). *North as a meaning in design and art.* Lapland University Press.

Heikkilä, K., & Kirveennummi, A. (2013). *Tulevaisuuskuvia luontokokemusten hyödyntämisestä – luonnosta hyvinvointia, palveluja ja liiketoimintaa (Future images of the utilization of nature experiences - from nature to well-being, services and business)* Tulevaisuuden tutkimuskeskus.

Hearnshaw, E., & Cullen, R. (2010). *The sustainability and cost-effectiveness of water storage projects on Canterbury rivers: the Opihi River case paper.* Paper presented at the 2010 NZARES Conference Tahuna Conference Centre, Nelson, New Zealand. August 26-27, 2010.

Hesmondhalgh, D. (2007). *The Cultural Industries*, 2nd Edition. SAGE Publications.

Hølleland, H., Skrede, J., & Holmgaard, S. (2017). Cultural heritage and ecosystem services: A literature review. *Conservation and Management of Archaeological Sites*, 19(3), 210–237. DOI:10.1080/13505033.2017.1342069

Howkins, J. (2001). *The creative economy: How people make money from ideas*. Penguin.

Huhmarniemi, M., & Jokela, T. (2019). Environmental art for tourism in Lapland. *Synnyt/origins 1/2019. Special Issue on Arctic Arts Summit,* 63–80. Retrieved 15th May 2020 from https://wiki.aalto.fi/pages/viewpage.action?pageId=151504259

Huhmarniemi, M., & Jokela, T. (2020). Arctic arts with pride: discourses on Arctic arts, culture and sustainability. *Sustainability*, *12*(2), 604; Doi: 10.3390/su12020604

Huhmarniemi, M., Kugapi, O., Miettinen, S., & Laivamaa, L. (in press). Sustainable future for creative tourism in Lapland. In Duxbury, N.; Albino, A., & Carvalho, P.C. (Eds.), *Creative tourism: Activating cultural resources and engaging creative travellers*. Cabi International.

Härkönen, E., & Vuontisjärvi, H. (2018). Arctic art & design education and cultural sustainability in Finnish Lapland. In T. Jokela & G. Coutts (Eds.), *Relate North: Practising place, heritage, art & design for creative communities* (pp. 86–105). Lapland University Press.

Immonen, K. (2020). Koillismaalaista metsäkeskustelua luontokuvin [Northeastern forest discussion with nature photpgraphs]. In T. Jokela, M. Huhmarniemi & J. Paasovaara (Eds.) *Luontokuvaus soveltavana taiteena [Nature photography as an applied art]* (pp. 202-207). University of Lapland.

Jokela, T. (2019). Arts-based action research in the North. In G. Noblit (Ed.), *Oxford research encyclopedia of education*. Oxford University Press. https://doi.org/10.1093/acrefore/9780190264093.013.522

Jokela, T., & Coutts, G. (2018). The North and the Arctic: A laboratory of art and design education for sustainability. In Jokela, T., & Coutts, G. (Eds.), *Relate North: Art and design education for sustainability* (pp. 98–117). Lapland University Press.

Jokela, T., Coutts, G., Beer, R., Din, H., Usenyuk-Kravchuk, S., & Huhmarniemi, M. (In press). The Potential of art and design to renewable economies. In D. Natcher & T. Koivurova (eds.), *Renewable economies in the Arctic: A state of knowledge.* Routledge.

Jokela, T., Coutts, G., & Huhmarniemi, M. (2020). Tradition and innovation in Arctic sustainable art and design. *Human. Culture. Education. Research and instruction journal 35*(1), 84–99. Doi: 10.34130/2233-1277-2020-1-84-99

Jokela, T., Coutts, G., Huhmarniemi, M., & Härkönen, E. (Eds.) (2013). *Cool: Applied visual arts in the North.* University of Lapland.

Jokela, T., Huhmarniemi, M., & Hiltunen, M. (2019). Art-based action research: Participatory art education research for the North. In A. Sinner, Rita L. Irwin & J. Adams (Eds.), *Provoking the field. International perspectives on visual arts PhDs in education* (pp. 45–56). Intellect.

Jokela, T., & Tahkokallio, P. (2015). Arctic Design Week: A forum and a catalyst. In T. Jokela & G. Coutts (Eds.) *Relate North: Art, heritage & identity* (pp. 118–139). Lapland University Press.

Karhunkorva, R., Kärkkäinen, S., & Paas-koski, L. (2017). *Metsäsuhteiden kenttä [Forest relations Map]*. Luston julkaisuja 1. Lusto – Suomen Metsämuseo. https://issuu.com/luston_julkaisuja/docs/metsasuhteiden_kentta

Kugapi, O., Huhmarniemi, M., & Laivamaa, L. (2020). A Potential treasure for tourism: Crafts as employment and a cultural experience service in the Nordic North. In A. Walmsley, K. Åberg; P. Blinnikka & G.T. Jóhannesson (Eds.), *Tourism employment in Nordic countries: Trends, practices, and opportunities*. Palgrave Macmillan. Doi: 10.1007/978-3-030-47813-1

Landry, C., & Bianchini, F. (1995). *The Creative City*. Demos.

Lindhjem, H., Reinvang, R., & Zandersen, M. (2015). Landscape experience as a cultural ecosystem service in a Nordic context. Concepts, values and decision-making. *TemaNord* 2015:547. DOI: 10.6027/TN2015-549

Millennium Ecosystem Assessment (2005). *Ecosystems and human well-being: Synthesis.* World Resources Institute. www.millen-niumassessment.org/documents/document.356.aspx.pdf

Milcu, A. I., Hanspach, J., Abson, D., & Fischer, J. (2013). Cultural ecosystem services: A literature review and prospects for future research. *Ecology and Society, 18*(3), 44. DOI: 10.5751/ES-05790-180344

Milone, P., & Ventura, F. (Eds.). (2010). *Networking the rural: The future of green regions of Europe*. Van Gorcum.

Müller, D. K., & Viken, A. (2017). Toward a de-essentializing of indigenous tourism? In A. Viken & D. K. Müller (Eds.), *Tourism and indigeneity in the Arctic* (pp. 281–289). Channel View.

Nordic Council of Ministers. (2011). Megatrends. *TemaNord,* 2011:527. Retrieved from http://norden.diva-portal.org/smash/get/diva2:702166/FULLTEXT01.pdf

Nordic Councils of Ministers. (2018). *Arctic business analysis. Creative and cultural industries*. http://dx.doi.org/10.6027/ANP2018-708

Olsen, L., Berlina, A., Jungsberg, L., Mikkola, N., Roto J., Rasmussen, R., & Karlsdottìr A. (2016). *Sustainable business development in the Nordic Arctic*. Nordregio working paper, 2016:1. Nordregio.

Petrov, A. N. (2016). Exploring the Arctic's "other economies": knowledge, creativity and the new frontier, *The Polar Journal,* 6:1, 51–68, DOI: 10.1080/2154896X.2016.1171007

Petrov, A. N. (2017). Human capital and sustainable development in the Arctic: Towards intellectual and empirical framing. In G. Fondalh, G. N. Wilson (Eds.) *Northern sustainabilities: Understanding and addressing change in the Circumpolar World*. Springer.

Rantala, O., de la Barre, S., Granås, B, Þór Jóhannesson, G., Müller, D. K, Saarinen, J., Tervo-Kankare, K., Maher, P. T., & Niskala, M. (2019). *Arctic Tourism in times of change: Seasonality*. Tema Nord 2019: 528. http://norden.diva-portal.org/smash/get/diva2:1312957/FULLTEXT01.pdf

Sainio, L. (2020). Vuorovaikutuksellinen näyttelysuunnittelu suon ymmärtämisen välineenä [Interactive exhibition design as a tool for understanding the swamp]. In T. Jokela, M. Huhmarniemi & J. Paasovaara (Eds.) *Luontokuvaus soveltavana taiteena [Nature photography as an applied art]* (pp. 191–201). University of Lapland.

Stephen, K. (2018). Societal impacts of a rapidly changing Arctic. *Current Climate Change Reports, 4*, 223–237. doi:10.1007/s40641-018-0106-1

Tennberg, M., Lempinen, H., & Pirnes, S. (2019). The resourceful North Divergent imaginaries from the European Arctic. In M. Tennberg, H. Lempinen & S. Pirnes (Eds.), *Resources, social and cultural sustainabilities in the Arctic* (pp. 175–181). Routledge.

Teräs, J., Lindberg, G., Johnsen, I.H.G., Perjo, L., & Giacometti, A. (2014). *Bioeconomy in the Nordic region: Regional case studies.* Nordregio.

Tossavainen, A. (2020). Suon tunnusta ja hitauden olemuksesta syntyi Slow Nature Photography –menetelmä. [The Slow Nature Photography method was born from the nature of the swamp and the nature of the slowness] In T. Jokela, M. Huhmarniemi & J. Paasovaara (Eds.) *Luontokuvaus soveltavana taiteena [Nature photography as an applied art]* (pp. 175–182). University of Lapland.

Tuominen, O. (2020). Virtuaalinen luontomaisema hyvinvointia edistämässä [A virtual natural landscape promoting well-being]. In T. Jokela, M. Huhmarniemi & J. Paasovaara (Eds.) *Luontokuvaus soveltavana taiteena [Nature photography as an applied art]* (pp. 227–231). University of Lapland.

Tyrväinen, L., Ojala, A., Korpela, K., Lanki, T., Tsunetsugu, Y., & Kagawa, T. (2014). The influence of urban green environments on stress relief measures: A field experiment. *Journal of Environmental Psychology*, 38, 1–9. http://doi.org/10.1016/j.jenvp.2013.12.005.

UNCTAD. (2018). United Nations Conference on Trade and Development. Creative economy outlook: Trends in international trade in creative industries. https://unctad.org/en/pages/PublicationWebflyer.aspx?publicationid=2328

Vehmasto, E. (2014). *Green Care – toimintatavan suuntaviivat Suomessa*. MTT. http://www.mtt.fi/mttkasvu/pdf/mttkasvu20.pdf

Vodden, K., Gibson,R., & Baldacchino, G. (2015). (Eds.). *Place peripheral: place-based development in rural, island, and remote regions*. ISER Books.

Woien, M., Kristensen, I., & Teräs, J. (2019). The status, characteristics and potential of smart specialication in Nordic Regions. *Nordregio Report* 2019:3. DOI: doi.org/10.30689/R201i).1403-2503

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Culture of the Ob Ugrians in the Art Works of Students and Lecturers of Nizhnevartovsk State University

The rich cultural and artistic heritage of the peoples living in the Western Siberia, the Far North, and the Middle Ob region inspires contemporary artists and art historians to explore and give creative meaning to their life and culture. Khanty-Mansiysk Autonomous Area – Yugra, with its long history, is a place of special culture dating back to the times of the late Ice Age. The first record of the Yugor people on the territory was made in ancient Russian chronicles, namely, according to the History Institute of the Russian Academy of Sciences, in The Tale of Bygone Years and the famous Vladimir Monomakh's Instruction. In 1118, the chronicles recorded the story of Gyurat Rogovich, a Novgorod posadnik, who organized the collection of reindeer to the princely state of Veliky Novgorod from people living on the banks of the Pechora. From there, a group of men at arms was detached further east of the Northern Ural where they discovered the "Yugra land" (Polnoye sobranie russkikh letopisej, 2001).

The name of "Ob Ugrians" was given to the peoples inhabiting the banks of the Middle Ob River back in the ancient times. Those were the people of semi-nomadic lifestyle, with winters spent in pine forests in grazing deer, and springs and autumns on the banks of small rivers with succulent grass and much fewer biting flies. During the year, the Ob Ugrians hunted and fished, producing meat from slaughtered animals and caught fish and using animal and fish skins for clothes. All utensils were made of wood, bark, bone, and fur. Being isolated from the European and Eastern civilizations, the Ugrians preserved their archaic culture determined by the local climate, economic activity, prevailing way of life, and traditions.

Unlike many other cultures, where man is the king of nature, the Ob Ugrians believe nature to be spiritualized and can be interacted with, hence their particular attitude to everything around – every object is alive and has its value. Unpretentious in everyday life, the northern peoples had developed certain spiritual practices not fully explored to this day. The Ob-Ugrian legends tell us of people able to control the manifests of nature, to send heavy rains, hail, or storms on the enemies, of shamans curing diseases, being in-

termediaries between the world of people and the world of spirits, and of fortune-tellers predicting the future. The Ob Ugrians myths talk about the world and man, the history of society, and reflect rich philosophical knowledge. The ancestors of the modern Khanty and Mansi peoples successfully traded with China and north-eastern Iran Back in the 1st century BC, with the Volgian Bulgaria in the 10th century AD, with the Novgorod Republic in the 12th century, and with Central Asia in the 17th and 18th centuries. The Khanty and Mansi languages are classified as Ugrian, with the Hungarian language as a relative to this group. Ugrian languages are part of the Finno-Ugrian group of the Uralic language family (Yugoria, 2000-2005).

This Northern region has been the subject of cultural and historical research of many scholars from Russia, Germany, Hungary, and Finland, including ethnographers, archaeologists, palaeontologists, and linguists. The researchers unanimously agree that the life of a northern man who has preserved the traditional culture is much more multidimensional, livelier, richer, and more meaningful spiritually than a life of a mere hunter or a fisherman as we see it.

Nowadays, we are facing the urgent and priority policy issue of exploring and preserving the cultural and historical heritage of Yugra people. The traditions and history of Western Siberia, the Urals, and Yugra, with its unique countryside, sacral and household traditions of indigenous peoples serve as a great inspiration for modern artists, designers, architects, as well as university lecturers and students majoring in Architecture, Design, Decorative and Applied Arts and Folk Crafts and guided at the Department for Architecture, Design and Decorative Arts at Nizhnevartovsk State University (NVSU).

NVSU members and students explore the life and history of the Ob Ugrians, collect indigenous texts and illustrative material, and analyze renowned artistic works and art reviews. Presented at various national and international art shows, the artistic works created by the teaching staff and students of our department are well-known and appreciated beyond the region. The artistic techniques include hand weaving, painting, metal and ceramic works, doll making. Turning to complex, eternal questions of the existence, uniting deep creative thought and artistic image, university instructors and students rethink and transform the artistic traditions of the Ob Ugrians in their works of modern professional art.

Exploring the modern state and dynamics of decorative arts, architecture, and design in their fundamental and applied studies, department members search for the ways to improve professional artistic education in Yugra and most effective forms of cooperation between creative folk craft centres and professional creative unions in the field of design,

architecture and decorative art; develop and accumulate creative projects reflecting local cultural themes and symbols for souvenir business purposes; develop recommendations aimed at preserving the artistic heritage of Yugra; identify challenges and prospects for local art crafts; attract leading Russian and international experts in arts, crafts, architecture, and design to share experience, promote comprehensive research, and improve the forms and methods of artistic and aesthetic education through research and practical conferences and art shows.

Here we shall discuss the artistic works created by members and students of the NVSU Department of Architecture, Design, and Decorative Arts which illustrate the way general cultural and artistic traditions of the Ob Ugrians are creatively transformed and embodied in modern professional art.

The works by Professor Galina Vizel, People's Artist, Academician of the Russian Academy of Arts, are symbolic expressions of the myths and legends of the Finno-Ugric peoples. Her monumental and decorative composition Gods and Spirits (Fig. 1, 2, 3) consists of seven sculptures symbolizing trees growing from the earth and rising their branches to the sky (Vizel, 2010). The top of each sculpture is a stylized crown of a holy tree with various symbolic images of the Gods and Spirits. The trunks depict ornaments reflecting the cultural codes and meanings of the World Tree connecting the past, present, and future. All sculptures are mounted along the central axis of the park alley in a certain order, being a harmonic part of the surrounding environment and adding to the cultural image of Khanty-Mansiysk by reflecting key mythological themes of the sacral Ob Ugrians culture and reminding the contemporary citizens of their ancient roots. The ceramic plates and monumental bronze sculptures were created together with V.A. Sargsyan (Novikova & Adametskaya, 2019).

Every ethnicity has its mythological foundations, or "starting points", built up throughout the historic and cultural development. As for the Ob Ugrians, their mythological roots are traced back to the cult place located on Seven Hills in the area of the modern city of Khanty-Mansiysk. Local peoples believe that there was a kind of Axis located here, at the intersection of great rivers, and that mythological time revolved around it. The central place in the Mansi pantheon was given to Mir-susne-Khum, or "The Man Contemplating the World" (Fig. 4). "The Man Contemplating the World" is one of the most common characters in folklore, myths, and beliefs of the Ob Ugrians. He was a hero, an advocate of justice, a patron of the people, a mentor, and a teacher. He was also known as Ruling Tsar, Bogatyr, Horseman, Wanderer, etc. Every night he went around the world on a winged all-seeing horse with a golden mane. His image

Figure 1. Galina Vizel. *Gods and Spirits.* Sculptural composition. 380 x 110 x 55 cm. Khanty-Mansiysk. 2010.

Figure 2. Galina Vizel. *Gods and Spirits.* Sculptural composition. 380 x 110 x 55 cm. Khanty-Mansiysk. 2010.

was visible and invisible in every house, and the whole Universe was his home. Without his image, a sanctuary was lifeless and devoid of sacred power. Mir-susne-Khum was presented with ritual heroic clothing and munitions, including pointed hats, belts, dressing gowns, cloaks, boots, saddles, etc. Most of these objects were made of cloth and decorated with the figure of a galloping horseman, and were stored in every house to be laid on, or cover the back of a sacrificial horse (they covered their back), hence

Figure 3. Galina Vizel. *Gods and Spirits.* Sculptural composition. 380 x 110 x 55 cm. Khanty-Mansiysk. 2010.

Figure 4. Galina Vizel. *Mir-Susne-Khum.* Fireclay, glaze. 35 x 28 x 16 cm. 2012.

called sacrificial covers (Yugoria, 2000-2005). This storyline is a popular theme for the works of Yugra artists.

In Yugra, the professional artistic life is developing in a bidirectional manner, in line with international trends and within the national and regional cultural paradigm (Novikova & Adametskaya, 2019). Thus, both mature and novice artists keep drawing their inspiration from the Ob-Ugrian culture serving as the "soil", or the basis for the creative search. Here is a prominent example of a novice artistic work called Little Storyteller, a decorative plastic composition made by Vlada Kornoukhova, a student supervised by Galina Vizel. It is an original artistic work revealing the image of Little Storyteller as the main character (Fig. 5). Such works of artistic ceramics dedicated to the mythology and folklore of the Ob Ugrians are an important alternative way to preserve the culture of the indigenous peoples of the North.

For most northerners who came to inhabit Yamal in the late 20th century, the history of this region is associated with oil and gas development, industrial boost, first drilling wells, geologist camps, first streets of new towns and cities. However, the territory of Yamal had been inhabited for thousands of years before the first oil developers - the Nenets legends say and some historians agree that the people of Sikhirtya were the indigenous local population before Nenets.

This name appeared in the discourse of archaeologists, ethnographers, and linguists several decades ago. Recently, the term has been used in several scientific and fiction publications. Nenets legends are the main source narrating about Sikhirtya as the peo-

Figure 5. Vladlena Karnaukhova. *Little Storyteller.* Clay, copper oxide, glaze. 2017.

ple once inhabiting the tundra of Western Siberia and the Urals. They were small, had "white" eyes, and lived in high sandhills (Demyanenko, 2016). According to the Nenets folklore, Sikhirtya came to Yamal from across the sea. First, they settled on the island, and then, when its shores began to collapse and get blown away by storms, they moved to the peninsula. The Sikhirtya era was replaced by the era of the Nenets people (Turutina, 2004). The collective folklore image of Sikhirtya reflects a huge historic era of over several millennia before the reindeer herding in Yamal, with its numerous migrations, wars, and cultural changes. By talking about Sihirtya today we are making the first step to exploring the antiquities of Yamal (Golovnen, Zaitsev & Pribyskiy, 1994).

The culture of Yamal's indigenous peoples manifests itself in various forms of modern art. Ethnographic, folklore, archaeological materials developed through historical and cultural studies of Yamal served as a base for the creative experiments of Ivan Demyanenko, a young Yugra artist, a member of the Russian Union of Artists and Russian Union of Designers, teaching at the Department for Architecture, Design and Decorative Arts. His Legend of Sikhirtya is a series of monumental ceramics compositions

Figure 6. Ivan Demyanenko. *The Legend of Sikhirtya.* Fireclay, glaze, milk. 2016.

reflecting the author's attempt to reconsider folklore images and plots while preserving their origin and making it easily recognizable.

The composition includes five objects, each having independent meaning, but also being an organic part of the artistic and semantic whole. The composition contains the most important symbolic components of modern knowledge about the Sikhirtya culture. The elements, each with its historical prototype and meaning, are "An encounter at Fishing Lakes", "A town of Sikhirtya", "Earth Turn" (the myth of Lad Yar Sal), "The Bird of Fog", "The Song of Sikhirtya" (Fig. 5).

The fact that there are five objects in the composition is associated with the sacred meaning of this number known in many mythological systems and still retaining its symbolic connotations. Traditionally, five is a universal symbol including all essential features of macro- and microcosm, people and nature, Heaven and Earth. Also, the composition includes images of real figures. Since Sikhirtya is magicians, wizards, and foregoers, they can still appear in the earthly world, protecting the weak, bringing good, and punishing those who are wrong. The indigenous peoples inhabiting Yamal and following a traditional lifestyle still believe in magic. Legends and tales help people distinguish between good and evil, while ancient myths always carry a grain of truth and special knowledge that helps people live in reality.

The mythological worldview of the Khanty, Mansi, and Nenets is a complex phenomenon closely related to their centuries-old history, ethnic consciousness, and culture.

Therefore, appealing to the creative experience of previous generations, studying and preserving the best traditions of ancient folk culture remains a topical trend in the development of contemporary Russian art of ceramics, along with its international stylistic and thematic landmarks.

In their fruitful dialogue with the most stable trends of the past, modern Yugra artists create works organically combining a deep understanding of traditions with the search for artistic individuality. By appealing to metaphors, symbols, and myth-making, artists develop their own amazing language and a new reading of the original ideas and northern folklore images. Thus, the works by contemporary ceramic Yugra artists are boldly interpreting the archetypes underlying the myths, folklore, and the culture of the autochthonous Yugra and Yamal peoples. For instance, the creative works by Galina Vizel and her student, now an independent artist, Ivan Demyanenko, are an example of a synthesis of tradition and innovation. The works created by these artists implement similar images in different ways within a single material, which largely determines the specifics of the artistic language, a variety of methods to shape and decorate, and artists' closer attention to one or another traditional plot.

It is noteworthy that young Yugra artists continue to develop the idea of transforming mythological images and ornamental traditions in decorative ceramics. Looking at the diploma work of Nataliya Maramzina, a student of Ivan Demyanenko, a decorative screen called The Conquest of the Beast one can say it is distinguished by its architectonic clarity and a masterful grasp of the material. The complex multi-part composition of the decorative screen is characterized by integrity, completeness, and consistency of the artist's compositional solutions, the combination of planar and volumetric-plastic solutions, and multidimensionality, expressed by the different scale of symbolic and expressive figures of sacred animals. The image attracts the viewers through its unity of decorative design and ideological meaning concentrated in images, serving as a fascinating ceramic embodiment of the mythological beast of the novice artist.

Artistic weaving (tapiseria, tapestry), like other decorative and applied arts, is a wonderful way to interpret various cultural and historical phenomena. Consider the samples of hand-made art weaving, such as tapestries Por People, Corvine Holiday, and Goddess of Kaltash, reflecting the sacred and folklore themes.

Almost every traditional holiday has folklore as its part. A holiday is something sacred, magic, and fun. The ceremonies, actions, special clothes, songs, and dances at public holidays manifest people's character and mentality. A national holiday sort of reveals the dream of a beautiful life, the way it should be like and the one people should strive for. People

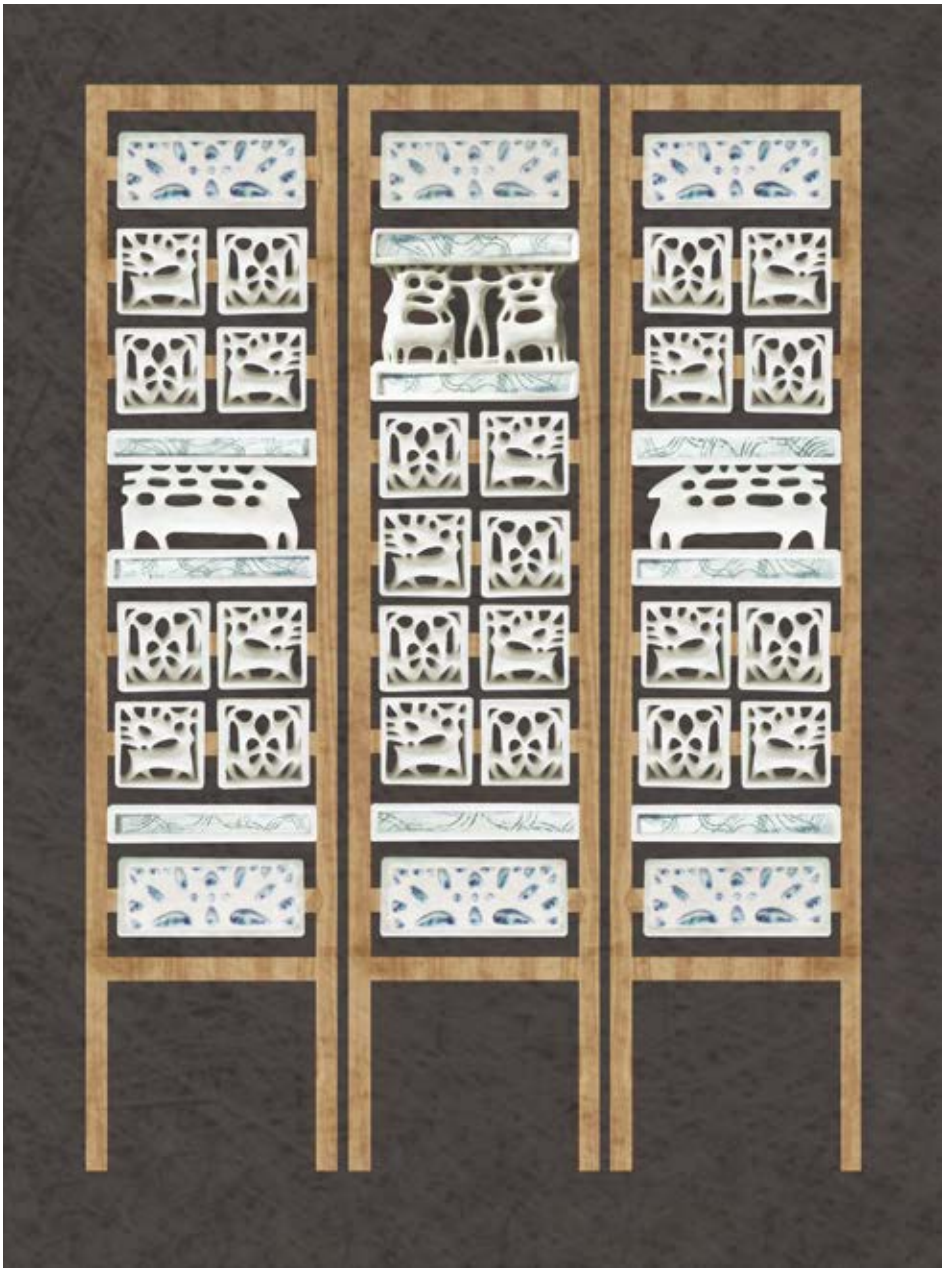

Figure 7. Nataliya Maramzina. *The Conquest of the Beast.* Blue pigment, wood. 190 x 40 cm. 2016.

used to greet and say goodbye to winter and celebrate the completion of works with a feast. Those people who know how to work well also know how to have fun. Holidays are a revived culture, with all its manifestations of songs, dances, national treats, folk artworks, and sports. A holiday is an opportunity to introduce young people to the cultural and spiritual heritage of their ancestors and remind them of their roots (Karnavaly & Prazdniki, 2005).

In the Khanty and Mansi culture, a festival called Bearish Game, a ritual cycle in honor of the bear, has always been one of the most striking phenomena. In the Khanty's worldview, a bear is not only a forest animal but also a spiritual creature. It used to live in heaven and was a sacred being. In the distant past, when it was prohibited to kill a bear, so the Northern peoples held cyclic festivals to celebrate this creature. The bear festival took place every winter for seven consecutive years, with a seven-year follow-up break. At the festival, the bear was represented by its skin, which was usually kept in a sacred barn. There was a sacred part to the festival when deities were called upon, performed by men in disguise, in masks, playing both male and female roles. On the last night of the festival, sacred performances were played out, with ritual dances and the main spirits such as Big Spirit, Kaltashch, Mir-susne-Khum depicted (Yugoria, 2000-2005).

The bear is considered a sacred animal, human ancestor, and patron. It is a cultural hero because it gave people fire and a bow. The Por people consider the bear to be their progenitor. The bear is like a stronger, more powerful brother, and the Por believe that humans still descend from it. The Mos and Por people are the ancestors of the Khanty and Mansi. They are divided into two clans, or phratries (brotherhoods), namely Mos (Moshch) and Por. Both phratries have their own sacred symbols and rituals, with individual systems of opposed symbols (i.e. gods, animal totems, cult objects). The Mos people were considered to be connected with the heavenly world, while the Por were connected with the earthly world (and hell). In the mythological world of the Ob Ugrians, there were two deities opposed to each other, namely, Kul-otyr - the god of the Por phratry, and Mir-susne-Khum of the Mos phratry. This opposition of two gods was not absolute: these two deities even became related through the daughter of Mir-susne-Khum, the "Merchant" with access to all the roads in the world, who became a daughter-in-law of the underworld god of the Por people. Mir-susne-Khum was also the main character of the bear festival, the most important festival of the Por phratry. The Bear Games are held in only a few areas, where the elderly who could perform the sacred songs and dances, are still alive. The ceremonies performed at the Bear Festival carry a sacred meaning. This is a folk festival. Currently, we can see traditional scenes of the Bear Festival performed at folk art festivals (Yugoria, 2000-2005).

Here we shall consider a tapestry called The Por People dedicated to the topic of the Bear Games, created by Svetlana Kravchenko (Professor, Candidate of Pedagogical Sciences, Honorary Worker of Higher Professional Education of the Russian Federation, Honored Worker of Culture of Khanty-Mansiysk Autonomous Area-Yugra, a member of the Union of Artists of the Russian Federation, a member of the Union of Designers of the Russian Federation). This artwork consists of three parts on a particular closed tapestry plane, with each part having a significant number of ornamental motifs and stylized scenes grouped and arranged so as to highlight the visual centre. The picture has active and passive zones of perception (Fig. 8).

The graphic elements are placed and distributed according to a certain pattern in a logical sequence. It is worth noting that there are basic principles for organizing a decorative composition, such as balance, line-to-spot ratio, the composition of space through the division of the plane into parts, and rhythmic organization of motifs and dominants (Kravchenko, 2012). The "Bear Game" scene, with "Por People" performing shamanistic rituals, is the dominant element in this composition. The figures of men in disguise, who sing sacred songs and perform sacred dances, are the same size, but the shape and rotation of the figures are different, which creates a feeling of dynamic tension and emphasizes the concentration of elements along the edges and their rarefaction to the centre. Each fragment of the overall composition has its own "small" accent enhancing the plot and decorative content of the compositional centre. The upper part of the composition is a life scene of a forest, taiga, whereas the lower part is a sacred scene with a bear and ritual deer, which are guides to the heavenly world.

Another holiday of the northern peoples is Vurna hutl" (Khanty), or "Urna-ekwa khotal" (Mansi), the so-called Corvine Holiday. It is celebrated in spring, on the day the ravens arrive. The Corvine Holiday is the favorite holiday of the Ob Ugrians and is therefore widely celebrated in all national villages of the Khanty-Mansiysk Autonomous Area - Yugra. The Ob Ugrians associate the crow with the female spirit, and the Corvine Holiday is associated with the sun. The crow is seen as the messenger of life and the patroness of women and children [11]. This idea was used as the base for the diploma tapestry work The Corvine Holiday created by Elena Belova (supervised by Svetlana Kravchenko) (Fig. 9). The decorative composition of the tapestry is a rhythmically organized division where all the ornamental and graphic elements are made in the same artistic and technical techniques and are subordinate to the general decorative concept. The central part of the composition is given to people of the north who are singing, having fun, playing the tambourine. This is how they are rejoicing at the arrival of crows. The upper right cor-

ner depicts a crow as a symbol of the holiday. The whole composition is enclosed in an ornamental frame. The warm green-brown colour composition emphasizes the natural colour features of the people living in the North (Kravchenko, 2012).

One more example of the tapestry work devoted to the Ob-Ugrian folklore motifs is The Goddess of Kaltash, a decorative composition with stylized elements created by Irina Makrushina (supervised by Svetlana Kravchenko). The central part of the composition depicts the image of Kaltash-Ekwa, the heavenly goddess of the Ob Ugrians. She is a many-sided goddess of motherhood embodied in the image of a bird, with her wings protecting life, bringing mercy, compassion, care, and support. Kaltash is surrounded by birds and animals symbolizing human souls. Thus the artist has created a new original image of Kaltash-Ekwa uniting the archetypal Ob-Ugrian ideas of the Mother Goddess. The composition is framed with an ornament based on the Khanty decorative symbols. The artist used the alternation of threads and rags of various colours as the main technique of tapestry weaving to transmit a gradual change in colour tones. There is a combination of warm and related, mostly complex secondary colours. The artists took into account the symbolic meanings of colour formed in the traditions of the Ob Ugrians and the natural colourist features of Yugra region (Fig. 10).

Many artists, including applied artists, turn to the archetypes of the Ob Ugrians. One of the major figures in the national artistic tradition is a shaman mediator between the worlds (Yugoria, 2000-2005). For instance, the diploma work The Shamans of the North created by Olga Fomina (supervised by Svetlana Rashitova, Assistant Professor, a member of the Union of Designers of the Russian Federation) embodies the historical image of Selkup shamans. The technique of artistic doll allows the artist to reflect the outstanding features of shamans, the position and movements of their bodies during sacred shamanistic rituals, their essential attributes, attire, and natural environment (Fig. 12). The figure of a shaman is unique and polysemic. Performing his rituals, he travels to the upper world of heavenly spirits, which is here shown through certain symbolic elements and various shapes (conic, triangle, elongated, etc.) standing for different energy channels like world tree, mountain, and river. The atmosphere of a sacred ritual is projected through such elements as the chum, shaman's costume, drum, and other attributes of shaman's art, his environment, and attire.

Speaking of the colour composition, it is very symbolic and used to reflect the idea of a Selkup shaman traveling from the earth of humans to the opposed heavenly world of spirits, which is seen through the use of contrast colours and their traditional symbolic meaning of the Selkups.

Figure 8. Svetlana Kravchenko. *The Por People*. Tapestry. 184 x 90 cm. 2015.

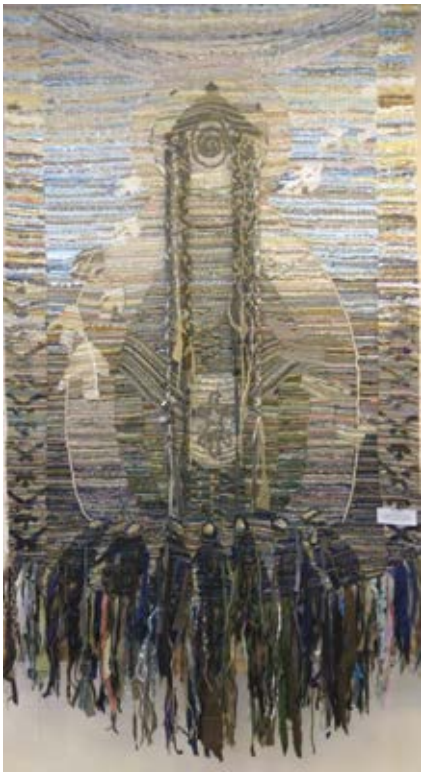

Figure 9. Elena Belova. *The Corvine Holiday.* Tapestry. 97 x 126 cm. 2010.

Figure 10. Irina Makrushina. *The Goddess of Kaltash.* Tapestry. 100 x 140 cm. 2013.

Thus, the doll composition is based on a very delicate choice of colour and composition rules and techniques. With all these aspects taken into account, the artist's idea was to reflect the image of the Selkup shaman and its sacral ritual of traveling to the heavenly world of spirits.

The environmental design takes a major place in modern architectural and design activities. Environmental design is a synthesis of compositional solutions for organizing a harmonious, comfortable, and aesthetically expressive urban environment. In our post-industrial society, the importance of preserving the cultural traditions and images of the indigenous peoples of the North is increasing. Open-air museums are a great solution for exploring and preserving local history and culture. Such museums are now widespread in many world countries, and their popularity and attendance are growing over time.

Here we would like to consider a design of the first open-air local history museum in Nizhnevartovsk created by Tatiana Zhuyko, a member of the Union of Designers of the Russian Federation, a lecturer at Nizhnevartovsk State University. The museum is to be located in a suburban area of Nizhnevartovsk (Khanty-Mansiysk Autonomous Area - Yugra) surrounded by forests and river basins. The designed chose the English style with a free landscape layout of gardens and parks for arranging and zoning of the museum territory. The museum will have five zones, each reflecting a certain activity of the indigenous peoples of the North: Museum Administration zone for public recreation; zones of Hunting, Daily Life, Reindeer Husbandry, and Fishing. Every zone includes architectural and ethnographic objects, museum collections, and natural landscapes. The museum activities will include an ethnographic theatre and a display of traditional crafts (Fig. 13).

The design is based on warm and complex natural shades. The Museum Administration has a central building (a raw-hide tent or a chum) and elements of landscape design (shops, bins, flower pots, lanterns). The tent frame is made of durable wood (cool brown-coloured bars) covered with stretched dressed animal skins and fixed with poles. The landscaping includes coniferous, deciduous trees, and shrubs (raspberries, birch, spruce, pine, hedge rose, and moss). Pedestrian areas are covered with birch wooden flooring. The Daily Life zone has an agricultural corner for planting vegetables, herbs, etc. The illumination equipment includes spotlights, floor lamps, and a hearth located in the centre, the latter creating a cozy and warm atmosphere.

Figure 11. Svetlana Rashitova. *Khanty souvernirs.* Textile plastic. 35 x 20 cm. 2018.

Figure 12. Olga Fomina. *The Shamans of the North.* Doll composition. 70 x 75 cm. 2011.

The fishing zone has areas of fishing, a temporary settlement, storages for fishing tackle and fish, and an area for drying of fish. Small architectural forms include a raised shed (labaz), a fence rack, a storage hut (suvan), sacred objects, and a raw-hide tent. All museum exhibits are fenced and equipped with information plates. The fence rack (sized 2.5 × 1.5 × 1.5 meters) made of durable wood (cedar, pine, larch) is a place to display the drying of fish. A suvan (2 × 3 × 2 meters) is a place to store fishing tackle (gear, nets, hooks, boats, fish traps, etc.). The frame of the suvan is made of larch, the roof is made of pine beams with flooring (soft roof of brown colour). The labaz (3 × 2 × 2 meters), a place to store caught fish, is made mostly of pine. The sacred zone (1 × 2 meters) contains pagan deities (idols, 1.2 meters high, and 0.3 meters in diameter) standing in the centre.

The landscaping plan includes additional planting of trees and shrubs, as well as preserving a natural forest belt of deciduous, conifers, and shrubs. The pavement is made of birch wood flooring and a mound of sand for the coastal area. The Fishing zone has a wooden bridge enabling the visitors to observe or even join the Khanty fishing. The area with benches to rest, lighted with small and large lamps at night time and spotlights used for museum objects, will be a comfortable place for visitors wishing to plunge into the history and culture of the Ob-Ugrian peoples.

Exploring the culture and life of the indigenous Yugra peoples is impossible without direct contact with the people who bear and preserve this way of life. The members of NVSU Department for Architecture, Design and Decorative Arts have been privileged to be acquainted with a representative of the Nenets people, a poet, an active public figure, ethnographer, and researcher Yuri Vella (Ayvaseda) (1948-2013). A member of the Union of Writers of Russia, Yuri Vella worked together with university members for many years, sharing his experience, worldview, and ideas and acting as a bridge towards the traditional Nenets culture. Yuri Vella was the one who created the first open-air museum in the Yugra, in his native village of Variegan, by bringing the houses and outbuildings from abandoned ethnic camping grounds. He made all the efforts for the museum to achieve its current official status. After that, Yuri Vella revived an ancestral camp on the Tyuytakh River and developed reindeer husbandry. Over time, this camp became a meeting point and the working place for many Russian and foreign Finno-Ugrian researchers, ethnographers, writers, and artists. As a poet and writer, Yuri Vella left behind a large, invaluable literary heritage reflecting the aspirations of his people, their character, and way of life, traditions, history, and challenges.

Here we would like to consider a series the graphic works of Ramazan Shaikhulov (Candidate of Pedagogical Sciences (Ph.D.), a member of the Union of Designers of the

Figure. 13. Tatiana Zhuyko. *An Open Air Local History Museum.* Design Project. 2016.

Figure. 14. Ramazan Shaykhulov. *A Camp Shelter At Tyutyakh* (Dedication To Yuri Vella). 3-sheet series. Digital collage. 2004.

Russian Federation, Assistant Professor) called A Camp Shelter of Tyuytakha (Fig. 14). These works were created using photographs taken during the first visit to the camp of Yuri Vella in 2004 (processed in Adobe Photoshop). The idea of digital collages was preceded by the years of technological experiments resulting in a thematic combination of several photographs allowing the artist to create photo compositions and to connect all fragments by colour, tone, and meaning.

Sheet 1. Meditations (Yuri Vella). This is a photo portrait of Yuri Vella himself, which is a dominant part of the composition. He is dressed in working malice and is sitting absorbed in his thoughts. The red-eye effect, which is left intentionally, conveys an alarm, perhaps a reflection of distant fires or oil torches. Deer seen in other parts of the compo-

sition are active "participants" of camp's life. The composition also includes some details and outbuildings of the camp and a characteristic landscape with a lake located behind the camp in the background.

Sheet 2. The Departing. This collage is devoted to the environmental problems of the North caused by the "invasion" of the oil civilization. Most of Yuri Vella's poems are filled with the feelings of pain and regret that oil companies are increasingly seizing the territories of tribal camps and polluting their surroundings, crowding out indigenous people from the lands of their ancestors, condemning them to a boring and meaningless life in modern towns and cities separated from the traditional way of life. The composition reflects two receding figures of the camp owners. The atmosphere of anxiety and instability of camp life is conveyed through the orange sky with reflections of fires, as well as an oil spill destroying trees, fish, and deer. This artwork makes a particularly intense impression on the viewer, knowing the fact that Yuri Vella has passed away and the future of his camp is in question. It is uncertain whether Vella's grandchildren can continue his works.

Sheet 3. Camp Hostess. This is a portrait of Elena, Yuri Vella's widow, pictured against the background of various natural and household objects representing her world. Elena has always been Yuri's faithful companion, the keeper of the hearth, a resilient and experienced hostess, and a reliable supporter of Yuri's creative and economic endeavours.

All three sheets of the series are united by an alarming, red-violet colour. A journalist Elena Khrapova once wrote in her review The Ancient World in New Art. Meditations of the Nenets, meditations of the Bashkirs published in Yugra magazine in 2009, "… When I look at them (on the sheets of the series), I feel worried about the people shown here. It seems that the wind will blow and second later their ghostly and unique world will disappear forever like a mirage in the desert..." (Yugra: regionalniy obshchestvenno-politichesky zhurnal, 1991).

The triptych *The Poet's World (Yuri Vella)* (Fig. 15), also created in Adobe Photoshop, has two major parts. The upper part is dedicated to the bright world of life in the camp, while the lower one is for the black world, the world of oil fields. The background reflects Yuri Vella's manuscripts and poems expressing his attitude to the problems of his people.

Another triptych of Ramazan Shaykhulov, called Three Worlds (Fig. 16), is based on Ob-Ugrian myth that the whole world is divided into three parts, with the middle part inhabited by humans, the upper world, where everything is made of gold, occupied by the supreme deity of Num-Torum, and the lower part being the dark underworld. The

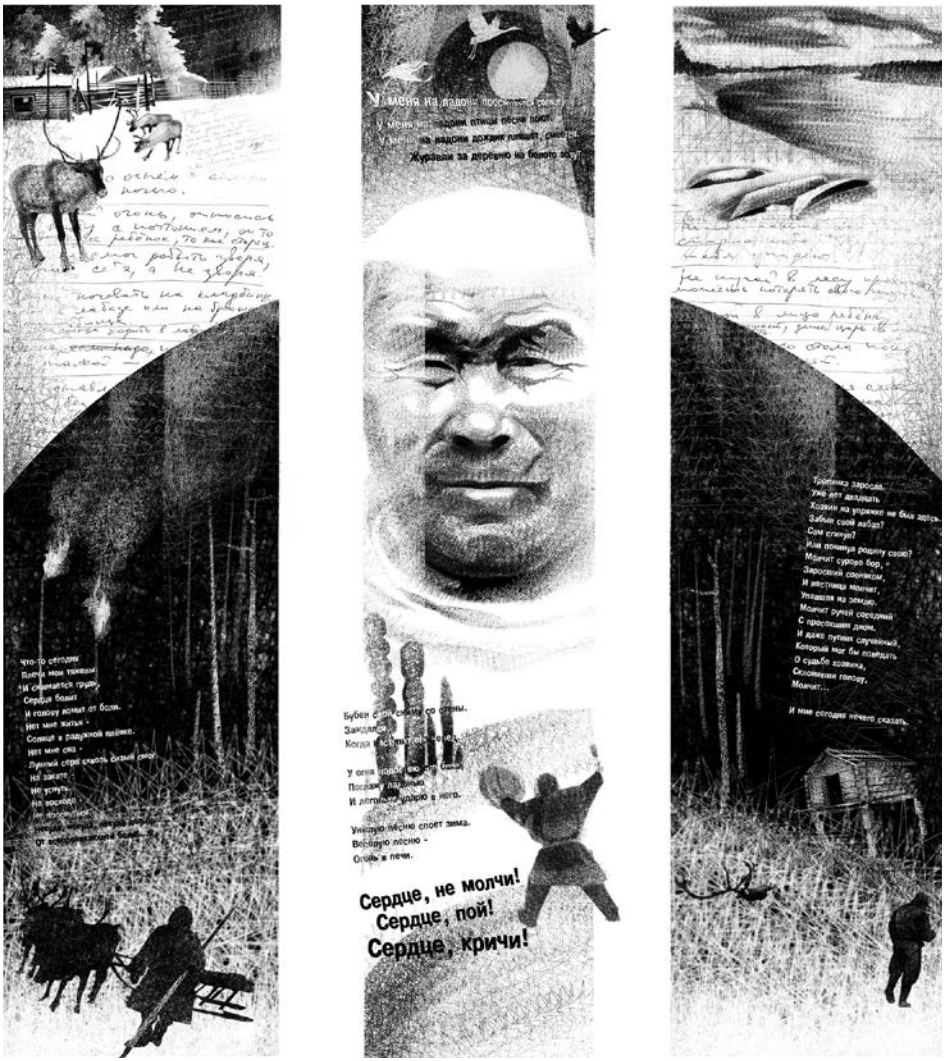

Figure 15. Ramazan Shaykhulov. *The Poet's World (Yuri Vella).* Triptych. Computer graphics. 2012.

Figure 16. Ramazan Shaykhulov. *Three Worlds*. Tryptich. Digital collage. 2007.

triptych, created in Adobe Photoshop, unites the photographic materials developed at the camp of Yuri Vella. The images are combined in a collage digital composition and processed with several filters. As we see, the Yuri Vella's poetry, way of life, and efforts as a bearer of the traditional culture of the North became a great source of inspiration for Ramazan Shaikhulov. Yuri Vella died in 2013. To commemorate his life and devoted work in favor of his native village of Variegan, the authorities founded the House Museum of Yuri Vella, and the works of Ramazan Shaikhulov became a part of the permanent exhibition.

A novice artist Lyudmila Ryabaya, a master student supervised by Ramazan Shaykhulov, created an interactive book draft design called *Following the Trail of a Taiga Dweller*.

Figure 17. Lyudmila Ryabaya. *Following The Trail Of A Taigan Dweller*. Book draft design. 2019.

The project was an attempt to visualize the main aspects of the Khanty culture – the territory (terrain features), lifestyle (housing, everyday life, traditional activities), original national clothes, and religious outlook (the main sacred holidays).

The main idea was to create an interactive children's book *Following the Trail of a Taiga Dweller* which would carry a certain cognitive value and teach about the unique socio-cultural experience of the various indigenous peoples of the North, including the Khanty. The book's illustrative material is based on volume-plastic modelling allowing one to arouse children's interest in reading, and also involve the young readers into learning and interacting through a game. The book is aimed at readers of primary school age (6-8, 9-10 years old) who keen learners of everything new and are ready to perceive complex information.

As we see, the world, culture, and artistic traditions of the indigenous Yugra peoples are seen as a great source of artists' inspiration and are reflected both in the creative and educational activities of academic supervisors and students at the Faculty of Arts and Design of Nizhnevartovsk State University.

References

A complete collection of Russian chronicles. (2001). V.1 "Lavrentevskaya letopis'". 2nd edition. Moscow. (pp. 234–236). (In Russian).

Demyanenko, I.V. (2016). Ethno-mythological images and symbols in the decorative-plastic composition "The Legend of Sikhirtya": A Theoretical Aspect (part 1). In Proceeding of International Research and Practical Conference "Art as a cultural phenomenon: moderate process in research, art and education" 11(5) (pp. 156–158). (In Russian).

Fokina, L.V. (2005). *Ornament: A teaching aid.* 3rd edition. Rostov on Don. (In Russian).

Golovnev, A.V., Zaitsev, G. S., & Pribylskiy, Y. P. (1994). *History of Yamal*. Yar-Sale Ethnographic Bureau. (In Russian).

Kashirina, T., & Evseeva, T. (Eds). (2005). *Carnavals. Festivals.* The world of encyclopedias. (In Russian).

Kravchenko, S. N. (2012). The modern experience of decorative composition in a tapestry (as exemplified by the thesis of graduates of the Faculty of Arts and Design). In Proceedings of the Russian Research and Practical Conference "Decorative arts and design: the edges of contact". Nizhnevartovsk, February 7, 2012, (pp. 50–56). (In Russian).

Novikova, M. M., Adametskaya, T. N. (2019). *Essays on the artistic life of Yugra: a Monograph.* Nizhnevartovsk. (In Russian).

Turutina, P. G. (2004). *Forest Nenets: Tales of the Purovsky land.* Novosibirsk. SB RAS, Geo Publication. (In Russian).

Vasiliev, V. I. (1977). The historical traditions of the Nenets as a source in the study of ethnogenesis and the ethnic history of the North Samodic peoples. In R. Lipetsk (Ed.) *Ethnic history and folklore* (pp. 113–126). Nauka. (In Russian).

Vizel, G. M. (2010). *Ceramics, painting, sculpture.* Tvorcheskaya masterskaya Zyraba Tsereteli Publication. (In Russian).

Yugoria (2005). *An encyclopedia of Khanty-Mansiysk Autonomous Area – Yugra.* 4th Volume,. Sokrat. (In Russian).

Yugra (2009). *A Regional Public and Political Magazine.* № 3, 2009 (pp.92–95). Established by the government of Khanty-Mansiysk Autonomous Area – Yugra. Khanty–Mansiysk: Center "Open region", (In Russian).

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Learning-by-making as a Tool for Provoking Placemaking Initiatives in Yakutsk, North-Eastern Siberia

This research-through-making is a part of a PhD by design currently in progress, which is a continuation of an Master of Arts dissertation. The research investigates the possibilities of learning-by-making as a tool for participatory placemaking that might bring innovative proposals to the contextual issues of Yakutia (Subarctic climate and landscape, identity of the Sakha). The main research questions are:

a) How can participatory placemaking processes provoke and facilitate tangible changes, directly answering the needs of the residents within and responding to the Subarctic?

b) To what extent can participatory placemaking processes contribute to the development of civic places through time and at both the city and neighbourhood scales? How can this approach address and loosely fit within the issues of the context?

This article is a reflection on the following two case study projects:

(1) The Green Link Project (February – April 2019).

This project suggests developing primary contextual features of Yakutsk - the City Canal and Centralised District Heating System (CDHS) built along it. The design imagines the city canal area as the city's civic pedestrian space with new shared civic structures built above and around the existing heating system pipes. Firstly, these shared spaces would use the surplus heat from the pipes to obtain additional warmth for themselves (reducing the warmth loss of the existing heating system and providing some heat for new civic structures). Secondly, these spaces would be strategically located within Yakutsk city centre, making them easily accessible public spaces owned by local community groups and institutions. Thirdly, these structures could also benefit the pipes, working as additional protection from the wind and cold temperatures.

Figure 1. Illustrative map of the Green Link created by the author.

(2) The Growing Structures Project (July 2019).

In July 2019, members of the local community in Yakutsk and other volunteers carried out a collaborative architectural workshop "Growing Structures" involving the hands-on construction of a Green Common Space for the Nursing Home for the Elderly and

Figure 2. The hands-on construction process *Growing Structures*. Photograph taken by the author, Yakutsk, July, 2019.

Disabled (a summer conservatory-library for the residents). The workshop project was considered from social, cultural, educational and climate perspectives. The aim was to explore and test the possibility of civic engagement, through construction: not only literally growing plants and buildings but also growing networks and institutions for civic action through collaborative architectural making.

The process and the outcomes of this MA research were critically analysed and referred to further study at the PhD level. The PhD research methods are intended to dig deeper within the topic, studying further contextual issues of the republic (currently addressing the issue of stray animals in collaboration with the Yakutsk School of Architecture, participatory designing a city park of Lensk, and developing a paper "Pipe Dreams") to find a point where the affordances of the context[1] and abilities of the researcher and the local community of Yakutia will meet and lead to further possibilities of testing research questions.

Physical Context

The research is currently concentrated on Yakutsk, the capital of the Sakha Republic and one of the largest permanently inhabited settlements in the conditions of continuous permafrost[2] with the continental Subarctic climate. The climate of Yakutia is characterised by the extreme change in temperatures during the year: severe cold winter seasons with temperatures dropping below -50C on average and high summer temperatures rising above +30C. Due to its distinct inland location, Yakutsk's climate is dry, develops heavy fog during the winter (after temperatures drop below -40C) and dust in the summer. The landscape of the region consists of taiga[3] and tundra[4]. Thus, issues relevant to cities on permafrost are not only geo-technical (melting and destabilisation of the ground), but also related to sustainability (a lack of green vegetation that could absorb pollution from heating systems).

The topography of the major cities in the republic are identified by the Lena riverbank location. The Lena river not only forms the linear structure of the settlements along it, but provides an important transport link from Yakutia to the rest of the Russian Federation and the world. During the winter season, the river is a frozen tundra (Ma et al., 2005) that supports a vehicular road whilst in the summer season ferries and ships operate up and down the river. However, during the transition periods when the river begins to turn frozen (from mid-October till mid-December) and unfrozen (from the beginning of April till the end of May), the road and river connections are closed. Additionally, the riverbank location brings makes the city vulnerable to flooding in the spring (melted snow accumulated during the long winter seasons).

Yakutsk is based in the Tuymaada valley, on the Eastern riverbank of the Lena River, surrounded by the Chochur Muraan hills, that can be distinguished by their insignificant slope and a large number of ponds. The City Canal of Yakutsk was designed and built in 1938 (Dmitriev, 2017) to solve the issues of water disposal in the city and to sustain the natural environment of the ponds. At the start of the 1990s, the City Canal became blocked (due to unauthorised and chaotic construction processes) and has been abandoned for the last 20 years. Nowadays, the route alongside the pipes is used as a pedestrian shortcut (desire paths). However, this route is not continuous due to obstacles: garages, industrial sites, and the shelters of homeless people underneath the pipes.

Architecture and infrastructure in the climatic conditions of Yakutia have particular features which require significant regulation. All the large-scale buildings and city-wide

Figure 3. The Sakha Republic on the Map of Russian Federation created by the author.

heating pipe infrastructure are raised above the ground to prevent melting of the permafrost, which would destabilise the ground. Although, the pipes of CDHS are considered to be an eyesore, they are still a unique urban feature of Yakutsk, which can provide an opportunity to design and build new types of social civic infrastructure. The Yakutsk's centralised district heating system, built along a city canal, mainly developed during the Soviet period, is unprecedented in its size serving both the city centre and the suburbs. The main line of CDHS consists of 5 pipes, each approximately 1.5m in diameter with the total length of 61 km (Gavrilov, 2009). In contrast, in Northern Canada and Svalbard, the centralised heating system serves only a few buildings.

A combination of the climate and the landscape has moulded the socio-cultural context of Yakutsk and has shaped its architectural and infrastructural features through time and history. Whilst the climate and landscape have remained much the same through time, following the dissolution of the Soviet Union, the socio-political situation continues to change and this brings out different problems relating to civic engagement. Understanding of the context should lead to a better understanding of the nature of the issues present now within the city and help to respond to the needs of the residents and accommodate their matters of concern.

Socio-Political Context

The socio-political history of Yakutia can be roughly divided into four time periods: the early independent years (800- 1632), the Russian invasion (Years under Russian imperial rule: 1632-1921), the Soviet period (1922-1991) and the post-Soviet period (from 1991). The Yakut people (Sakha) are of Turkic origin that settled in the Far North-East of Siberia in the 13th century (Stepanov, 2008). The Sakha are one of the most populous groups of the native peoples of Siberia and occupy the largest territory within it. The traditional culture of the Sakha is based on their lifestyle (cattle and horse breeding, fishing and hunting) that formed their religious beliefs: Shamanism and Animism.

Originally, the Sakha used to live remotely from each other, typically settling a few clans per *alaas*[5] (Nikolaev, 2009), and had a semi-nomadic lifestyle, alternating between permanent winter and summer settlements (Takakura, 2010, p.54). Subsequently, the social habits of the Sakha are different to Western ones: the Sakha have a big social gathering only in the summer during the national festival "Ysyakh" (celebration of the summer solstice and the new year). However, the Russian invasion and urbanization processes changed the Sakha way of life and communication.

The Russians invaded Yakutia in the 1620s in order to collect "yasak" (fur tax). One of the first Russian invaders, Pyotr Beketov founded a fortress on the banks of the river Lena in 1632, that later developed into the city of Yakutsk (Tichotsky, 2000, p. 73). Several Yakut rebellions between 1634 and 1642 were brutally suppressed and led to further conflicts. The conquest of Siberia also resulted in the spread of diseases among the native population: smallpox and other diseases reduced the indigenous population by 70% (Richards, 2003, p.538). The period of terror ended in the 18th century, with the Tsar reducing pressures and granting freedom to the native people of the land. Later on, the discovery of gold and other natural resources led to the building of the Trans-Siberian road (Tichotsky, 2000), brought increasing number of Russians to the region and started the rapid expansion of the city of Yakutsk.

The Soviet regime reached Yakutia in 1922 (Forsyth, 1994). On the one hand, this period is characterised by the repression of traditional Sakha culture, malnutrition and poverty amongst the population, and the use of the land as a place of exile for political activists (exile was practiced during the imperial time as well, but Stalin built Gulags - camps) and the large scale mining of natural resources. On the other hand, the mining incursions contributed to the growth of the economy and the diversity of the region.

The Soviet time and its politics brought stronger equality to the population of Yakutia, converted everyone into the same culture of communism, changing the mentality and life views of the indigenous people. However, the traditional culture of the Sakha and shamanist rituals have continued up to the present time.

The modern period in the socio-political context of Yakutia is characterised by the Perestroika period after the collapse of the USSR (an uncertain chaotic time), the establishment of the republic with its own president, the growth of the urban fabric, travelling opportunities to foreign countries, the implementation of new technologies and the introduction of social media in the 2010s (social involvement platforms). The socio-political realm of urban design and architecture needs to be embraced still further. One of the new approaches is the introduction of the participatory design of public spaces initiated by Irina Alekseeva, the Chief Architect of the republic (LETO, 2019). That gives an opportunity to test the effectiveness of learning by making as a participatory methodology on three scales: that of the city, the neighbourhood and the building.

Affordance of the Context and Horizons of Involvement

The constraints and opportunities afforded by a city's context, such as physical or cultural topography (social institutions or political structure of the local community for instance) can offer a variety of responses to a range of intentions or ambitions. In their paper entitled *The River & The City*, Mitchell and Roca Iglesias (2019, p.14) interpret Gibson's Affordance Theory (1977) as a way of firstly spatially imagining change and then acting to analyse the theory through a speculative process. It is a way of matching the potential of the context to the needs of the local community groups (makers and users). For example, the idea of the Green Link proposes to use the unique infrastructure of the city, which could answer the need of shared spaces in Yakutsk.

One could argue that the affordance of a situation also depends on the person, time and context. However, Jones (2003, p.108) highlights Gibson's (1979/1986) argument that the perception of an object's qualities and its affordances are not the same. In addition, Michaels (2003, p.136) argues that affordances exist objectively and do not depend on their perception by a subject. Nevertheless, each particular context can have different affordances at the same time and it is a matter of perception by those engaged as to which affordances are perceived and engaged with. Therefore, a process of collaborative

Figure 4. The centralised heating system of Yakutsk in late autumn. Photograph taken by the author, Kalvitsa Street, Yakutsk, April, 2019.

Figure 5. The centralised heating system in the spring. Photograph taken by the author, Kalvitsa Street, Yakutsk, May, 2018.

design and making, can broaden the horizons of involvement and perception of the affordances of a place through the participation of the users.

Although, the top-down approach[6] is initially set up for working on a bigger scale and impact, the bottom-up[7] approach can lead to more appropriate answers to the urban issues as it is answered by its direct users. Mitchell and Tang interpret the work of the mathematician, G.F.R. Ellis when linking scale and horizon, "how hierarchies of form based on size and scale resolve themselves into different levels of horizons" (2018, p.163). Any scale is made up of modules that interact with each other, for instance at the structural scale a family is extending their house, which can affect the next scale level of a neighbourhood if neighbours decide to try the same type of extension. The initiative might scale up further and change the whole appearance and function of a settlement. Each scale has its own tools of actions that depend on the available choices - horizons, for example managing natural resources according to politics at the city scale.

Strict plans leave no space for self-growth and experimentation, taking away imagination and the opportunities provided by local affordances for change. In the *Placemaker's Guide*, Hamdi discusses the problems of mainstream architectural/urban practice: "practice is simplified and reduced to a few safe and well-tried routines, so that it can be replicable" and "the result: a false sense of quality in the exactness of plans and a bureaucratic dreamland of place and community" (Hamdi, 2010, p.143). It is especially relevant in settlements with strict linear structures, such as Yakutsk that developed rapidly during the communist regime (washing away the identity of the city).

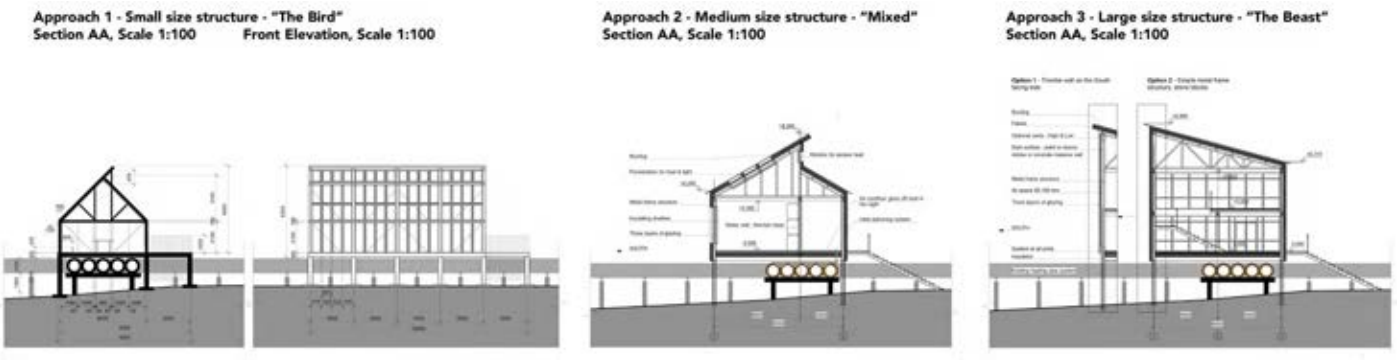

Figure 6. Speculative proposals of the community greenhouses on the Green Link created by the author.

Hamdi's "Providing, enabling, adapting and sustaining" (PEAS) program offers an insight into participatory making as a placemaking tool, where all the contradictions are, in fact, complementary (2010, p.141). For example, when a practitioner proposes a rigorous modern design and the local authorities/regulations confront it – it might lead to some other modern proposal but designed in a way which fits the local context. Thus, strict local regulations can be taken as contextual constraints relating to continuous permafrost for instance, and used to offer something new: the idea being that all restrictions have the potential to open new, more fascinating opportunities.

Learning-by-Making as Removing Barriers to Change

In recent years, there has been an increasing amount of literature on learning-through-making phenomena. In 2012, Seel argued that 'learning-by-making' is an expression that emphasizes the fact that in any situation of learning, people are actively engaged in making sense of the situation – the frame, objects, relationships – drawing on their history of similar situations and available cultural resources (2012). Moreover, the transformative learning theory of Taylor (2017) interprets the adult learning process as construction and appropriation of the meaning of experience within a frame of reference.

Learning-by-making is a continuous process of creating and changing the urban context and its meaning through imagination and hands-on practice. Perhaps, these small initiatives can validate and prepare the ground for other more imaginative approaches (Green Link) that seem impossible due to restrictions at the present time (political regulations on the built environment made by the local authorities). As stated by Na-

Figure 7. Speculative proposals of the shared civic spaces on the Green Link created by the author.

beel Hamdi (2004, p.116), learning-through-making is not only about placemaking, it involves designing both spatial and organizational structures, where people can 'remove barriers to knowledge and learning, find partners, build networks and open lines of communication'. These habits of people and their behavioural patterns frame structures of meaning and are dynamically adjusted as people experience new social activities.

A combination of separately existing approaches and theories that are being implemented in a unique context might lead to a different kind of knowledge. McFarlane (2011) conceptualised learning as a political and practical domain through which the city is growing and functioning, and as a tool for developing progressive urbanism, using

the term 'assemblage'. McFarlane refers to Ingold (2000, p.155) who compares learning to "wayfinding" a process of learning as you go. In the same way as Ingold, McFarlane extends his argument through different scales and discusses the philosophical meaning of urban design and structure, and its possible impact on the residents through the processes of design and making. According to his central focus on "translocal learning", learning is place focused but not restricted to that place: "translocal learning involves an ongoing labour in forging and developing connections between different sources, routes and actors".

In order to test that, the participants of the Master's hands-on workshop included: youths from the local agricultural and architectural design schools, students from the architectural and engineering universities, experienced architects and civil engineers (who were advising on the design), local authorities (who provided permission for construction and media coverage), local businesses (who supported through funds and construction tools), and residents of the nursing home. The diverse mix of volunteers of different backgrounds and age groups became the focal point in this case study, showing the new ways of collaborative building (in Yakutsk) starting with only one idea, carried out intuitively.

Through the provocation of local initiatives small changes can provoke and interest the local community, inspire for further initiatives through validation of the small ones and lead to possible scaling up. Stevenson and Petrescu (2016) touch on the bigger questions of how to provide urban resilience and sustainability through empowering bottom-up change at the neighbourhood scale. Stevenson and Petrescu argue that "This (co-production) politico-ecological approach goes much further than previously discussed notions of 'user involvement' or 'participatory design' by engaging directly with the principle of equal partnership", which can be more appropriately accessed at the neighbourhood scale (2016, p.695). The 'co-production' approach can be identified as a context-based approach: existing resources are identified and new ones are created based on the needs of a particular neighbourhood.

Methods of Learning-by-Making

Small community workshops can empower people and show them what can be achieved starting only with an initial idea and some excitement. Ingold, in his book *Making* (2013), describes his way of looking at the making processes. The author evaluates aspects of learning-by-making and gives examples from his work with the students. Through the

book, Ingold explains why he links the four A's: Architecture, Art, Anthropology and Archaeology. These four fields combined and merged create a different way to look at things (the ideology of design). For instance, Ingold compares the meanings of building and growing processes, looks at design as a creation and discusses the meaning of the architect's role. In the same chapter, Ingold argues: "On the contrary, it (anthropology) would be free to bring ways of knowing and feeling shaped through transformational engagements with people from around the world, both within and beyond the settings of fieldwork, to the essentially prospective task of helping to find a way into a future common to all of us" (2013, p.6). This is an idea of collaborative learning through processes where people can "grow into knowledge" (2013, p.13). For instance, the Growing Structures workshop at the Nursing home opened new opportunities for further initiatives (offers of support from the local authorities and institutions in the future).

Furthermore, Ingold describes different relationships between material and shape, how they form each other and the context. He discusses form-taking activity, referring to Simondson's postulate of individuation: "a process of morphogenesis in which form is ever emergent rather than given in advance" (2013, p.25). The person who organises some process should have an image in the head (the intention), which will eventually transform into something different (be fined tuned/adapted) in the process of creation. The participants can also walk away after the process with some other thoughts that might lead to different forms in the future. It lines up with Ingold's thought on making: "Making, then, is a process of correspondence: not the imposition of preconceived form on raw material substance, but the drawing out or bringing forth of potentials immanent in a world of becoming" (2013, p.31).

In the chapter '*On building a house*' (2013, p.55), Ingold analyses different methods of practice, such as drawing: "drawings were as essential for the transmission of ideas from the designer to the workmen as is musical notation to the performance of complex polyphonic music". This statement was demonstrated during the Master's summer workshop: the organiser explained the process to the participants through hand-drawing. Although printed copies of the technical drawings and step-by-step diagrams were available, the participants understood the process most easily through live hand-drawings and oral explanations. These two methods seemed not to work separately, only in combination. Also, during these explanations of how to build a certain part of the structure the expression of problems perceived by the participants, led to solutions that participants found together through quick "brainstorming" sessions. Thus, it was a process of collaborative thinking through drawing.

Figure 8. Spatial imagination of the shared civic spaces on the Green Link created by the author.

A rule of thumb (simplified approximate measurement) is the possibility of error is also the possibility of another way of doing it. This rule played a big role in the construction process of the Master's workshop. The author had no previous experience in managing live construction projects so that whilst all the windows were designed the same – they were actually bespoke windows as each window ended up a different size. This happened because of the simple way the building was laid out and due to the natural qualities of the material (Siberian larch wood is quite bendy). However, the rule of thumb

Figures 9–10. The "Growing Structures" workshop and completed structure. Photographs taken by Aileen Ling, Yakutsk, July, 2019.

approach helped to build a stiff good-looking structure. The not-so-precise structure echoes another saying of Ingold: "the designer is a trickster. Far from striving after perfection, his field is the management of imperfection" (2013, p.63). In the chapter Round mound and earth sky, Ingold quotes (2013, p.85) an interesting saying of Turnbull: "people perform objects of all kinds, but especially buildings, by moving through and around them but buildings also perform people by constraining their movements and by making likely certain kinds of encounters between them and others" (2002, p.135). This saying links back to the theme of affordance of the context that approached from the certain ways can offer solutions through the praxis.

Conclusion

The changing socio-cultural context of Yakutia requires a new approach in civic place design to address the issues of identity embedded within the issues of physical and cultural context. The bottom-up approach to urban design development might contribute to this new approach. As solutions coming directly from users and fine-tuned by them can bring more appropriate design solutions. Furthermore, collaborative learning-by-making can provoke more tangible changes and a deeper discussion within the context for the future. Learning-by-making can empower a local community's broad perception of the affordances of a place by a continuous process of creating and changing the urban context and its meaning through imagination and hands-on practice, when the change itself can become a facilitator of other new processes where the users can grow into and create new knowledge.

The questions of provocative engagement with local initiatives and power division within the realisation processes are linked to their scales. In order to provoke tangible change at a large scale, small changes need to be tested. The results of which might impact on the perception and character of future changes, both providing an example and validating the approach. However, there is a gap in the knowledge of how to provoke such changes. The research will continue to investigate the top-down approach combined with the elements of bottom-up in the case study in the city of Lensk (participatory city park design), located in the Sakha Republic. In order to scale back to the neighbourhood and building scale in the following case studies in Yakutsk (hands-on building workshops). This will lead to the evaluation of participatory placemaking as an urban design tool and its potential impact in creating civic spaces in the Sakha Republic that can be further used in the other regions of the Subarctic and places that experience Arctic climate conditions.

Endnotes

1 **The affordance** is a specific combination of the properties of its substance and its surfaces taken with reference to an animal (Gibson, 1977, p. 67).

2 **Permafrost** is perennially frozen ground. More specifically, the International Permafrost Association defines permafrost as ground that maintains a temperature at or below 0C for at least 2 years. Frozen water need not be present for soils or rocks to meet this definition (Marshall. 2012, p. 166).

3 **Taiga**, also called boreal forest, biome (major life zone) of vegetation composed primarily of cone-bearing needle-leaved or scale-leaved evergreen trees (Juday, 2019).

4 **Tundra**, a major zone of treeless level or rolling ground found in cold regions; is known for large stretches of bare ground and rock and for patchy mantles of low vegetation such as mosses, lichens, herbs, and small shrubs (Hu & Bliss, 2020).

5 **Alaas** is a circular area of grassland with a slight depression, like a plate, and a small lake or marsh at its centre; these basin areas range between 5 and 40 metres in depth and have a diameter between 15 and 50 kilometres (Takakura,2015, p.26).

6 **Top-down** approach starts with the big picture. It breaks down from there into smaller segments (Pereira et al, 1993).

7 The term '**bottom-up**' first appeared in relation to its opposite 'top-down' in 1942 in a journal of economics. In an urban context, this approach has two key, complementary directions: first, a trend that encourages social, cooperative models of city organisation; second, a growing interest from government officials, academia, and the professional sector in resorting to digital, open-sourced data and models as key resources for understanding urban interactions. (Pogaèar, 2014, p.190)

References

Carl, P. (2017) City, Horizons of involvement, praxis. Internal London Metropolitan University Report. Unpublished. https://modeverso.files.wordpress.com/2017/02/city-horizons-praxis-webpost.pdf.

Dmitriev, A. (2017, August 30). The City Canal: The new milestone in Yakutsk History. *Sakha Press*. https://xn--j1aaude4e.xn--p1ai/press-tsentr/news/?ELEMENT_ID=50838.

Forsyth, J. (1992*). A history of the peoples of Siberia: Russia's north Asian colony, 1581-1990*. Cambridge University Press.

Gibson, J. J. (1977). The theory of affordances. In R. E. Shaw&J. Bransford (Eds.), *Perceiving, acting, and knowing: Toward an ecological psychology* (pp. 67–82). Lawrence Erlbaum Associates, Inc.

Gibson, J. J. (1986). *The ecological approach to visual perception*. Lawrence Erlbaum Associates, Inc. (Original work published 1979).

Hamdi, N. (2010). *The placemakers' guide to building community*. Earthscan.

Hamdi, N. (2004). *Small change: About the art of practice and the limits of planning in cities*. Earthscan.

Hu, F.S., & Bliss, L.C. (2020, March 21). Tundra. *Encyclopaedia Britannica*. https://www.britannica.com/science/tundra.

Ingold, T. (2013). *Making: Anthropology, archaeology, art and architecture*. Routledge.

Jones, K. S. (2003) What is an affordance?, *Ecological Psychology*, *15*(2), 107–114. https://doi.org/10.1207/S15326969ECO1502_1.

Juday, G. P. (2019, September 30) Taiga. *Encyclopaedia Britannica*.https://www.britannica.com/science/taiga.

Kharkov, V.N., Stepanov, V.A., Medvedeva, O.F., Spiridonova, M.G., Maksimova, N.R., Nogovitsina, A.N., & Puzyrev, V.P. (2008). The origin of Yakuts: Analysis of the Y-chromosome haplotypes. *Molecular Biology, 42*, 198–208. https://doi.org/10.1134/S0026893308020040.

Laros, A., Fuhr, T., & Taylor, E. W. (2017). *Transformative learning meets Bildung: An international exchange*. Sense Publishers.

LETO - The Centre of Competence on the issues of urban environment of Yakutia, Yakutsk. [website] (2019, November 6). http://letoyakutia.ru/.

Ma, X., Yasunari, T., Ohata, T., & Fukushima, Y. (2005). The influence of river ice on spring runoff in the Lena river, Siberia. *Annals of Glaciology*, *40*, 123–127. https://doi.org/10.3189/172756405781813744

Malisz, B. (Eds.) (1970). Implications of threshold theory for urban and regional planning. In H.W. Richardson *Regional Economics,* (pp. 220–230). Palgrave Macmillan. https://doi.org/10.1007/978-1-349-15404-3_17.

Marshall, S. (2012). PERMAFROST. *The Cryosphere*, (165–179). Princeton University Press. doi:10.2307/j.ctvcm4g6p.11.

McFarlane, C. (2011). *Learning the city: Knowledge and translocal assemblage*. Wiley-Blackwell.

Michaels, C. F. (2003) Affordances: Four points of debate, *Ecological Psychology*, *15*(2), 135–148. https://doi.org/10.1207/S15326969ECO1502_3.

Mitchell, M., & Roca Iglesias, R. (2020). Urban agriculture on the banks of Kathmandu's river Bagmati as a catalyst for the civic inclusion of sukumbasi migrants and the making of a greener city. *Frontiers of Architectural Research*, *9*(1), 169–190. https://doi.org/10.1016/j.foar.2019.07.007

Mitchell, M., & Tang, B. (2018). *Loose fit city: The contribution of bottom-up architecture to urban design and planning*. Routledge.

Pakendorf, B. (2007). Contact in the prehistory of the Sakha (Yakuts): Linguistic and genetic perspectives. PhD Thesis, Landelijke Onderzoekschool Taalwetenschap, Utrecht. https://openaccess.leidenuniv.nl/bitstream/handle/1887/12492/Thesis.pdf?sequence=1.

Pereira, L. C. B., Maravall, J.M., & Przeworski, A. (1993). *Economic reforms in new democracies: A social-democratic approach*. Cambridge University Press.

Pogačar, K. (2014) "Urban activator" – Participatory and bottom-up tool of urban change: Definition and selected examples. *Prostor, 22*(2) 189–200. https://www.researchgate.net/publication/296833201_'Urban_activator'_-_Participatory_and_bottom-up_tool_of_urban_change_Definition_and_selected_examples.

Richards, J. F. (2003). *The unending frontier: An environmental history of the early modern world*. University of California Press.

Stevenson, F., & Petrescu, D. (2016). Co-producing neighbourhood resilience. *Building Research & Information, 44*(7), 695–702, DOI: 10.1080/09613218.2016.1213865

Takakura, H. (2015). The social and symbolic construction of Alaas Landscapes in the Siberian forest among the Sakha. *Acta Slavica Iaponica*, 28, 51–69.

Takakura, H. (2015). *Arctic pastoralist Sakha: Ethnography of evolution and microadaptation in Siberia* (English edition.). Trans Pacific Press.

Tichotsky, J. (2000). *Russia's diamond colony: The republic of Sakha*. Harwood Academic; Marston.

Turnbull, D. (1993). The ad hoc collective work of building gothic cathedrals with templates, string, and geometry. *Science, Technology, & Human Values, 18*(3), 315–340. https://doi.org/10.1177/016224399301800304

Zittoun T., & Brinkmann S. (2012). Learning as meaning making. In N.M. Seel (Ed.) *Encyclopedia of the Sciences of Learning*. Springer. https://doi.org/10.1007/978-1-4419-1428-6_1851

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The Cultural Landscape of Komi Art and Design Before and After the Relate North 2019 Symposium and Exhibition

Systems of art education can be very different in different countries and/or cultural traditions. Although there is a widespread belief that a cross-cultural exchange in the field of Art Education is very useful and important, there is no accepted recipe for how such an exchange can be organized. International education projects have a variety of designs and a design that works in one cultural setting can well prove useless in another. Therefore, an analysis of concrete examples of international projects and of the reasons they worked (or failed to work) in concrete cultural and/or institutional settings is very important.

In this paper, we use the example of various art and design projects realized by artists from the Komi Republic to discuss how the artistic traditions of this Republic interact with the system of Art Education under the influence of international art and design education projects. By the means of this analysis, we attempt to demonstrate how concrete cultural and institutional peculiarities can contribute to the success (or lack thereof) of concrete projects and, which is probably even more important, how international projects can shape and enrich local traditions of artistic education. Our analysis proceeds in three stages:

In the first stage we will briefly observe the development of the art and design education in the Pitirim Sorokin Syktyvkar State University, the only university providing such education in the Komi Republic. This is used as a context to make the reader familiar with the main traits of the art education tradition in Russia.

In the second stage the impact of international projects on the art and design education in Syktyvkar will be examined from different methodological aspects as well as on different participatory levels. We are going to analyze the role international projects have been playing in the development of art and design in the Komi Republic since 2013, particularly by giving birth to new artistic forms and by promoting penetration of art into different spheres of science and technology.

Finally, in the last part of the paper, the experience of the Relate North Symposium and its consequences will be observed and discussed on the example of various artistic works it inspired. The Art and Design projects analysed in this section were a part of the art exhibition organized in the framework of the Relate North-2019 International Symposium in Syktyvkar. It is important to stress that young artists get inspired in their work not only by the history, mythology and cultural tradition of the territory – the usual sources of inspiration for the older generation of artists – but also by natural landscapes and even family traditions. The new generation of artists responds to the challenges of modern art by creating interactive art objects. This is one of the distinguishing traits of modern art and design as it exists in the Komi Republic.

The History and the Basic Traits of Art and Design education in Syktyvkar

The Institute of Culture and Art (ICA) of the Pitirim Sorokin Syktyvkar State University (former the Syktyvkar State University) was created in May, 1999 by the Rector Vasily Zadorozhny to be the first Faculty of Art in the North of European Russia. The Dean of the Faculty and, lately, the director of the ICA has been Liudmila Gurlenova. The professors have been recruited from Ph.D.s and D.Scs as well as members of the Russian Union of Artists and the Russian Union of Architects, who had been educated in Moscow, St. Petersburg, Izhevsk, Krasnoyarsk, Kursk, Orel, Yaroslavl as well as in other faculties of the Syktyvkar University. Some professors affiliated in different periods with the faculty and the institute had titles of the Folk and Honorable Artists of the Komi Republic and the Folk Artists of Russia. Some of the first professors of the Faculty, e.g. Sergey A. Bocharov, the head of the Visual Art Department, and Irina V. Zemtsova, the head of the Arts and Crafts Department, are still working in the ICA. Among the professors of the Design Section, one can mention the members of the Russian Union of Designers Leonid Shadrin, Nadezhda Korotaeva, and Konstantin Ivshin. The first application round was organized in September 2000. By now, more than 1000 students have successfully graduated from the Faculty/Institute. They are employed as heads of Folk Culture Centers, art school teachers, teachers at private schools of art as well as develop their businesses related to producing and promoting arts and crafts. Some graduates have become renowned artists and craftsmen, members of professional unions. There are several design companies organized by the former students and some graduates of the Department of Design are employed as designers and illustrators by international companies abroad.

The Russian system of high education was reformed several times since the mid-1990s. The most important change came in November, 2007, when Russia moved to the two-tier education in line with the Bologna Process (Alexeeva et al., 2011). These changes made a significant impact on the educational programmes of the ICA.

The continuing agenda of incorporating Russia into the European political realm has been reflected, among other things, in assimilating the basic EU ideas on education, society and sustainable development: the idea of creativity as the key theme in the European Union (2006, 2012) and the UNESCO's educational agenda of 'Rethinking Education' (UNESCO, 2015). The main ideas of all these programmes have been transferred to the Russian context in a "soft way": the state policy defined only mandatory frameworks for the partly-revised educational programmes. For example, after the transition from the specialist degree programmes (which included five years of education and gave the right to apply to Ph.D-level programmes) to the two-tier educational programmes (bachelor and master programmes), most teacher training programmes are offered at the Bachelor level and they last four years (including the six months long obligatory practical training at schools). The same happened to programmes in *Applied Art, Folk Arts and Crafts, and Design*: the whole art education was downgraded from the Specialist to the Bachelor level, which damaged teachers' practices and some minor craft courses. Indeed, since the length of the programmes decreased from five to four years, the time for teaching professional subjects decreased significantly. Thus, courses of drawing, painting, and composition had to be shortened by more than 50%. Furthermore, the time reserved for students to perform diploma projects and diploma studies has shortened from five to two months. Of course, this has negatively affected the quality of diploma projects.

It is also important to understand, that another feature of the Russian university system is the "solidity" of curriculum. By "solidity" we mean that all the students who are enrolled in a certain education programme have a unified study curriculum, which leaves very limited space for them to choose courses in accordance their own interest. In fact, only 1 or 2 minor courses can be chosen by a student, while 95% of study courses are the same for the whole students' group. Judging from a rational viewpoint, this fixed system is favorable for the majority of the academic staff because it can guarantee them a stable salary during their job contract, the stable and fixed amount of academic hours in accordance to the study curriculum, and the fixed list of courses every year. Besides that, since all students of the group have almost equal curricula, an employer can be sure that everyone holding, let's say, a diploma of a Designer issued by the Syktyvkar University has certain skills and competencies irrespectively of his/her personal interests.

It is also to be noted that due to certain historical, demographic, and socioeconomic factors most Russian students get enrolled in University immediately after finishing their 11-year school education. The percentage of Russian school alumni who continue their education at a university is almost as high in Russia as in the Northern Europe: 69% in 2006 and 76% in 2013 (compare to 88% and 94% respectively in Finland and 81% and 76% respectively in Norway). However, students themselves are much younger – 18-19 years old at the moment of university enrollment – and almost all of them do not have any work experience and depend on their parents/relatives financially. Most students get their bachelor's degree when they are 22 years old and immediately proceed to the master level. Thus in 2017, 84% of master students joined their master-level programmes immediately after finishing the bachelor level and 65% of students, who finished their bachelor-level studies, immediately joined the master-level programmes (Stukalova, 2018). Therefore, in contrast to Finland and Norway, where it is common for young people to live on their own money while studying at a university and to finish the university programmes having a considerable working record, most Russian university graduates do not have any working experience at the moment of their graduation.

Apart from these features, which are shared by all Russian universities and education programmes, there are some minor, but very crucial (in our opinion) features, which distinguish Russian education in the sphere of art and design. Thus, in comparison to European art and design education, the Russian system is based on a deeper study of academic realistic art. All the institutions involved in art education, from the art schools for children to the Academy of Art, use the academic school of drawing and painting as the basic part of their teaching. In the Syktyvkar University, both the former specialist level and the current bachelor level programmes in art include, besides drawing and painting, also courses in sculpture with elements of anatomy, graphic and color studies, ceramics, history of art, folk costume, projecting, basics of museum work, artistic tricot, and artistic knitting. The design studies programme includes courses in propaedeutic, projecting, computer technologies in design, layout in environmental design, constructing environmental design, technical drawing, typographic, and typographic fonts.

Probably the most detectable mark of the Russian art education is the decorative stylization in painting. We believe that only those students who have learned graphic skills (i.e. who can draw using different techniques and materials) can be successful in computer-based design. Painting improves their color vision and color perception; a special course in color studies fulfills their education in this sphere. All the 1st and 2nd year students have courses in composition (named "propaedeutic" in the design study

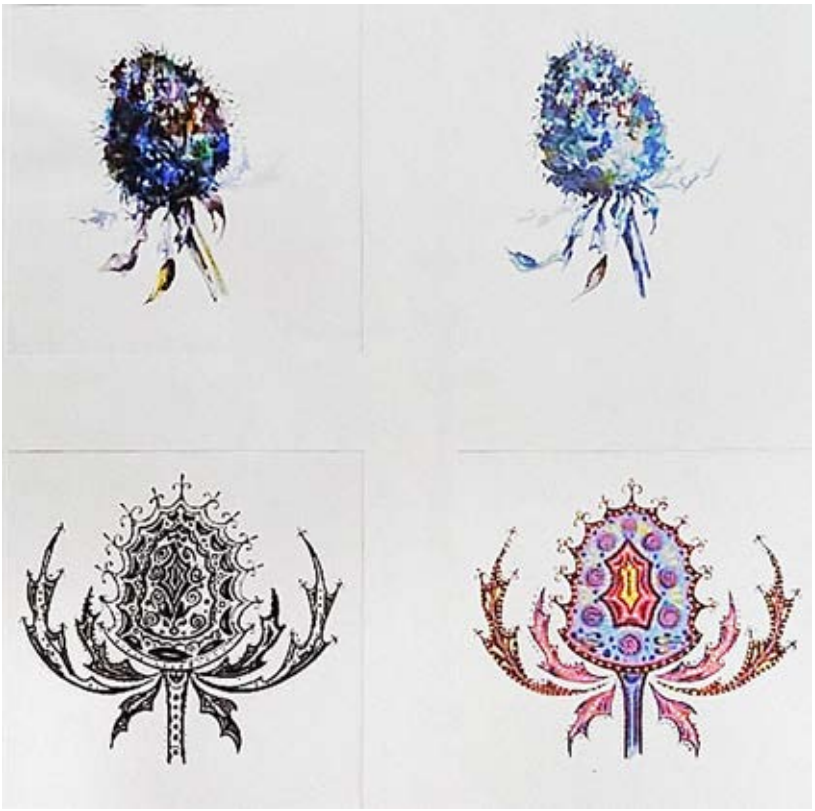

Figure 1. Creative task of a 1st year student, 2015. Paper, gouache, watercolors, gel pen.

Figure 2. Anastasia Luzhiskaya (1st year bachelor student, Design). Front page of the multimedia project *Ulianovo Cloister*, 2018. Currently this project represents a part of the museum's website as well as of its permanent exposition. This project was also presented in Moscow as a part of the *Intermuseum 2019* exposition design festival.

programme), where they are taught basic principles of constructing a composition of an artwork. Initially students are taught to build abstract compositions and then, a bit later, to stylize realistic forms (floral and faunal objects) into elements and motives of decorative compositions and ornaments (Figures 1 and 2).

All students are required to prepare works like those presented by figures 1 and 2 as their 1st year course projects. They proceed to studying specialized subjects and techniques only after they master the basic skills and techniques by the end of the 1st – middle of the 2nd year of their education.

There are specific requirements for those who can be enrolled in the art and design education programmes:

- They should have basic art education (e.g. should finish an art school for children, a college of culture or accomplish special preparation courses. They should also pass entrance exams. Before the transition to the two-tier system, these were exams in drawing, painting, and composition. Nowadays, we have a single entrance test, which includes tasks on academic drawing and on painting.
- They should demonstrate a strong cultural background. Thus, those who took part in professional artistic competitions and/or exhibitions have a priority in enrollment.

Almost all students who have applied to the Art and Design faculty/institute during the 20 years of its existence are from the North-West of Russia. Furthermore, most of those whose application was successful have accomplished all the levels of Russian art education: they started from an art school for children, then continued their education in a college of culture (which provides a specialized education of the secondary school level) and then got enrolled in the university program of a Bachelor level. Furthermore, as it has been already said, most of them proceed to the master level studies after completing the bachelor level.

Therefore, all the students who wish to proceed through the Russian Art Education have to master certain artistic skills, which are needed to pass entrance tests on each of the succeeding levels. Those who wish to proceed through the Design Education have to demonstrate the same skills, but also a flexibility in thinking and communication as well as an ability to solve tasks presented quickly and efficiently. Indeed, a good designer has to be quick and efficient in solving the tasks a customer presents to him/her, while for an artist, an ability to concentrate on small details, such as composition elements, for a long period of time is more important.

The so-called regional component – the studying of artistic and cultural traditions of the local peoples – can be present in different disciplines and courses of the educational

programmes. Generally, it accounts for 10% of the course. This means that the bachelor-level programmes necessarily include studying traditional arts and crafts. Students also study the regional component during their practical training periods. There are four such periods, one in each year of study, and each period lasts two to three weeks.

As can be seen from the whole discussion made so far, in Russia the existing study programmes specify quite rigidly what the students have to study, when they have to do this, how they have to do this and what basic teaching methods should be applied for the study. Previously it was not possible to make even slightest changes in the programmes, because all the programmes had to be approved by the Russian Ministry of Education and no deviations from them were allowed after the approval. Nowadays additional courses not specified by the educational standards can be included in the programmes. However, the basic part of the programme is still rather rigid in its structure as a sequence of courses, and times, when students should be given these courses, are fixed.

International Projects: Achievements and Problems.

Since 2013, several international projects have been realized with the participation of teachers, professors, and students of the ICA of the Syktyvkar University. Some of the projects were initiated and leaded by the ASAD network, others were based on other agreements and networks. In this section, we present the information about these projects in chronological order.

In April, 4 -10, 2013, the workshop *Northern Places – Tracking the Finno-Ugrian traces through place-specific art and photography* was held in Syktyvkar (Hiltunen & Zemtsova, 2014). The project was organized by the FIRST-ARTSMO network and involved four Finnish Universities: the Institute of Design and Fine Arts Lahti; Aalto University School of Arts, Design and Architecture; University of Lapland, Faculty of Art and Design and The Academy of Fine Arts of the University of the Arts Helsinki as well as the Syktyvkar University, the ICA. Finnish teachers and coordinators were responsible for the application and selection process in the case of students from the Finland Art Institutes. The curator of the Syktyvkar team, which consisted of students and professors, was Irina Zemtsova, one of the authors of this paper. After a long conversation with colleagues, she decided to make all the students of the first, fourth, and fifth years of study from the Department of Arts and Crafts and students of the first, second, and fifth years from the Department of Design involved in the project. From

the viewpoint of the Finnish curators Mirja Hiltunenm (University of Lapland), Kirsti Nenye (Institute of Design and Fine Arts Lahti) and Timo Jokela as a leader ASAD network, this dramatic disproportion (12 Finnish student VS 22 Syktyvkar students) was not a particularly good starting point for the project taking into account its initial purpose (Hiltunen & Zemtsova, 2014). This was particularly evident because few Komi students could fluently speak English and even those students had a strong language barrier (especially the students of the first year) in addition to the "ideological artistic barrier," that is feeling (not surprising taking into account the academic basis of the Russian art education) that artist should create an art project personally rather than in a group. As was reflected in the article (Hiltunen & Zemtsova, 2014), the feelings of the Russians about the differences in the educational backgrounds were similarly negative. This can be explained not only by the differences in educational standards between our countries, but also by the fact that the majority of the Finnish students were from the Design and Visual Art programmes, while most of the Komi students were from the Department of Arts and Craft. This can explain the vision of Finnish colleagues that "the Finnish students themselves were significantly more interested in using cultural traditions in a contemporary way" (Hiltunen & Zemtsova, 2014, p.73). Nevertheless, as it can be seen from the photo of the final exhibition, the different kinds of the "traces" jointly created and presented by the mixed groups were quite inspiring. Despite all the obvious hindrances and imagined boundaries, the dialogues between the two cultures were realized on different levels (those of teachers, students, local peoples, local artists) and gave rise to a set of different works.

Vladimir Durnev, one of the professors from the Syktyvkar University who took part in the project, has recently said the following in an on-line dialogue:

"I have already worked as a teacher for about five years, and my goal as an educator and artist was to promote and devote myself to local topics: history, crafts, mythology, folklore. At that time, those topics were, so to speak, not extremely popular among young visual art and crafts artists. Honestly, I cannot even remember a single name among my peers who were interested in such an "old-school" subject. This fact, therefore, not discouraged me. I was aspiring to bring a new meaning, to find a further visual reinforcement for the local themes and topics. And coincidentally, the arrival of international students who showed a genuine interest in our city, history, and culture, served as an incentive for us and our students to take a serious look at something we might disregard. In general, the *Tracking the Finno-Ugric Traces* project has given us not only the opportunity to participate in international exhibitions and conferences but also

to focus our attention on the issues discussed at those conferences. For example, every year I managed student summer practices, and I reoriented them from the usual summer Plein-air painting practices into collaboration with the National Museum of Komi and the Institute of Language and Literature at the Ural branch of the Komi Scientific Centre. The results of this work were presented in conference reports at the *Relate North* symposium in 2016 and 2017".

The next large international project of the ICA was the set of specialized workshops for the arts and crafts students organized and supervised by Scott Thoe from the Nord University. On October 7, 2014, within the framework of the Norwegian-Russian Cultural Forum, Scott Thoe opened his solo exhibition *Above the Arctic Circle* at the National Museum of the Komi Republic. During October, Thoe held a series of lectures for students at the university and one for the general public on art in architecture. The special workshop for students on the theory and practice of the Land Art has been held in the Ethno-Cultural park in the village of Yb. 15 students and two teachers were divided into three groups. After the theoretical part, the practical hours were aimed to understand how we can express our feelings using natural materials and the landscape. It was a challenge for all the participants to create a Land Art object by the means of a group brainstorming and in a way that was not "childish" (because it is typical for the Russian pre-school activity with children to do different things using the natural materials). In Russia it is common to believe that real art and the natural materials can hardly be combined. Besides this belief, selecting materials and combining them was also initially quite difficult. It is important to note that most of the participants in the Land Art workshop also took part in the previous project. This was revealed during the group brainstorming. The initial layouts had to be changed several times after the natural materials were selected and the participants attempted to place them in the open field under a strong wind in the way specified by those layouts ("it was not only a time pressure, but also a weather pressure"). After the art objects had been finished, the participants proceeded to defending their ideas and discussing how their objects were perceived by others. The final stage of the project work involved the visitors and the staff of the Ethno-cultural park. These visitors initially were rather suspicious about our "running around with twigs and sticks" as they named it. However, after we had explained our project ideas to them, they took part in our discussions and helped organizing a photo-session with the objects created. For all the project participants, this was the first experience of creating Land Art objects they ever had in their lives. The professors could see how the ideas of Ecological Art were perceived by their students

and then creatively re-interpreted by them in their own layouts. It was amazing to see how the natural materials, which had been always perceived as natural background, suddenly became the objects of their own to be re-interpreted and re-thought for an art-objects creation. This experience was very positive for the students; indeed, it has broadened their concept of Art. Many of them later used the techniques and methods of Land Art when working with children during their summer pedagogical practical training.

In March, 22 - 28, 2015, the ICA was visited by Roxane Permar and Susan Timmins, professors from the Shetland College, University of the Highlands and Islands. They

Figure 3. Artwork by a group of the participants of Land Art project (group 312). Yb village. Photo: Nadezhda Bazhenova, 2014.

made the students of our institute involved in the international project *Future through Art*; the artworks created in the framework of this project were presented at the Relate North 2015 symposia exhibition. During their visit, the Scottish colleagues made us familiar with the ways art and design are taught in the Shetland College of the University of the Highlands and Islands. They also organized an on-line video lecture, which was attended by the students of our institute as well as master students of the four colleges of the University of the Highlands and Islands. This video lecture gave our students a chance to see how their western "colleagues" work on their diploma projects and which artistic themes and topics are believed to be important in western universities. The glance into the "domestic life" of a western university was useful also for our professors: it gave us a chance to compare teaching techniques and methods used in different educational traditions. Besides that, the on-line lecture allowed our students to see for the first time in their lives how a personal negative experience can be transformed into an art project of social significance. Among our students, the topics of social insecurity and social discrimination had not been particularly popular before that lecture. The reason probably was that they tended to associate these topics with the classical art, such as that of Peredvizhniki (the Russian art school of the 19th century, which raised social topics in its art), or with modern scandalous art-performances. The way the western student managed to present these topics in a textile work and the self-reflection involved in this project represented a lesson, which was very useful for our students to be able to understand the modern Arctic art.

In October 2016, the University hosted a large public lecture, where the already mentioned Scott Thoe from the Nord University was invited to openly analyse the architecture and planning of North Russian cities from an artist's perspective. The lecture *Environments and Spaces of Northern Cities on the example of the 'City Legends' project* was attended not only by students and professors, but also by industrial and environmental architects. The discussion provoked by the lecture continued in the ICA: the *City Legends* project initiated by the city administration was a vibrant topic of discussion among professional artists as well as inhabitants of Syktyvkar at that time. After the open discussion, the mayor of the city invited Thoe to take part in the project as a professional artist with experience in international sculpture projects. In January, 2017, the Norwegian professor applied for a Barents Cult grant of the secretariat of the Barents Region to realize a sculpture project in Syktyvkar (the application was supported by the Syktyvkar University). The work on the project started in June, 2018 and involved the Syktyvkar University as well as the National Gallery of the Komi Republic. From November, 2018

till May, 2019, Scott Thoe and his partner Makta Doraev worked on the granite and marble monument, which was officially opened for public in June, 2019 (Thoe & Daraev, 2019). The opening ceremony was accompanied by a master class the sculptors organized for the students of the Institute of Culture and Art. This was a great experience for the students, because they could directly observe how two sculptors speaking different languages, having different citizenships and cultural backgrounds are working together on the same art object. Furthermore, the students had a chance to take part in the final polishing of the sculpture, which gave them a rare experience of working with granite and marble.

Finally, in the period between May, 23, 2018 and September, 23, 2018, the Syktyvkar University hosted the first innovative international project *Living in Landscape* (LiLa). The LiLa project was financed by the Norwegian Centre for International Cooperation in Education (SIU) and coordinated by the University of Lapland, Finland.

The main purpose of the project was to work out an operation model of an interdisciplinary international summer school on the basis of four universities: the Pitirim Sorokin Syktyvkar State University, The University of Tromso (Tromso, Norway), The Uppsala University (Uppsala, Sweden) and the University of Lapland (Rovaniemi, Finland) (Härkönen & Stöckell, 2019). The multidisciplinary format of the project allowed a visual dialogue between different scientific disciplines, countries, and cultures based on methods and techniques of modern art.

The Summer School *per se* took place between May, 23 and June, 1, 2018. The summer school programme included lectures on different topics by the participating professors, visits to the ethnographic and geological museums in Syktyvkar, and fieldwork in the Knazhpogost district of the Komi Republic. Initially, the Udora District of the Komi Republic was planned as the fieldwork place: this choice was insisted upon by Werner Bigell, one of the authors of the project, who had a fieldwork experience in this district (Bigell, 2018). However, the spring flood, which was surprisingly large that year, made the Udora district virtually inaccessible. Therefore, we decided to choose the village of Kozlovka in the Knazhpogost district (about 200 km away from Syktyvkar) as our fieldwork base. It is a really remote and rural area with only one stable mobile company, lack of Internet, old wooden houses with stove heating, old wooden churches, and only a small food shop. We were to stay in three old wooden buildings, have our meals outside (the students also had to participate in cooking), prepared sauna for ourselves, like at the end of the 19th century. It was really an excellent place to understand, perceive, and reflex on the cultural heritage and living in the Komi landscape.

Apart from Kozlovka, the fieldwork included visits to neighboring villages: the upper and lower Otlas, Shoshka and Onezhye. These traditional villages are situated on the high bank of river Vym, which zigzags through the hilly landscape in the proximity of the Timan Range. The population of the district is only 18, 711 persons, 70% of them are ethnic Komi. This population occupies the area of 24, 615.6 square kilometers, which gives the population density of 1.31 persons per square kilometer. All the participants of the project took part in creating artworks, which were displayed in the ICA on May, 31st. The individual and group work on art projects continued after the participants returned to their countries. The results of this work were presented in an art exhibition, which was opened in Syktyvkar on September, 18th. This exhibition involved two exhibition spaces: the exhibition hall of the ICA, the Syktyvkar University, and the hall of the National Library of the Komi Republic.

As Elina Härkönen and Antti Stöckell wrote in their article about this project, in the four-field model of cultural heritage and dialogue, "interdisciplinarity is required, and even interdisciplinary interactions cannot be realized without dialogue" (Härkönen & Stöckell, 2019, p. 640). This article describes several examples of the artworks and art dialogues resulting from the "LiLa" project. To these examples we would like to add the work *Signs of the Place* by Aneliya Lyantsevich, one of the authors of our paper. This work, which is based on a re-thinking of the artists' own cultural heritage, reflects how the reimagine aspects of cultural heritage actively interacted with the joined Finno-Ugric past of Finns and Komi (Lyantsevich, 2018). Another interesting example of the dialogue between the art and the natural sciences is the work *Beautiful Traces* by Vladimir Durnev (Durnev, 2018). During one of the fieldwork master classes, Vladimir offered the participating ecologists to make clay prints of different surfaces. The aim was to demonstrate to the students that one has to apply any material in different situations in order to learn different ways of working with it. However, the planned demonstration of different ways to apply clay has developed in a much bigger project when the students started to make clay prints of plants, their stems, and leaves. Once the prints were properly fired, the detailed three-dimensional structures of the stems and leaves became visible and could be used for documenting information about plant tissue. This imprinted information was important equally for artists and ecologists. The main contribution of the ecologists to the project was their demonstration of how the ecological situation in the whole region can be assessed by single samples without applying any modern technologies like a digital microscope or a computer. This knowledge allowed the artist to visualize Cultural Landscape and engage in a dialogue with the spectators about the sustainable development of the arctic.

In the already mentioned article, Elina Härkönen and Antti Stöckell correctly pointed out that the dialogue between the local participants and the visiting participants continued throughout the whole project and that the artworks that resulted from this dialogue themselves became the objects of dialogue, this time between the participants and the exhibition visitors (Härkönen & Stöckell, 2019).

Another important result of this project for the Komi Artists was their learning the ways to build up a multi-layered exhibition that includes artistic works of different artistic groups (mixed anthropology-ecology-art projects). Indeed, some of the objects were to be displayed in the National Library. This seriously restricted the ways these objects could be visually presented as well as the conditions of the exhibition functioning. For example, a video or audio streaming was impossible, because it could distract the library visitors from their work with books. This challenge however represented a new stimulus to rethink the exhibition organization methods and to build the new exhibition space, which would be open for the cultural dialogue. The interdisciplinarity of the exhibition also represented a challenge. The need to respond to it led to a new dialogical look on the objects to be displayed and on the cultural landscape of our Republic in general.

Relate North 2019

As can be seen from the previous discussion, by November, 2019, when the international symposia *Relate North-2019: Tradition and innovation in Art and Design Education* was opened in our city, we already had some experience of hosting international projects. However, hosting a specialized international conference in English was a completely new experience for us. Drawing on our experience of intercultural dialogue since 2013, we decided to organize two rather than one Relate North exhibitions. These exhibitions were to display artworks by the symposia participants as well as by professors, students, and graduates of the art and design divisions of our Institute (all the students who took part in the exhibitions participated in at least one international project). Each of the exhibition spaces had its history: the old exhibition hall of the ICA was popular among students, professors and professional artists of our Republic, while the *Revolt-center* exhibition hall represents a modern exhibition space suitable for a range of activities, from modern dance-performances to a lecture for old people. Each of the exhibition spaces has an established audience. One of the main aims of the exhibition was to bring new cultural contexts to the artistic environment of the Republic.

As demonstrated by the exhibition catalogue (Hiltunen et al., 2019), the artworks represented different techniques and levels of artistic skills. As the exhibition coordinator, Aneliya Lyantsevich attempted to create the exhibition spaces fit for demonstrating both traditional and innovative art (Hiltunen & Zemtsova, 2019). Those participants, who brought their works with them, had to put them up in the exhibition space during the night before the opening ceremony. Although the preliminary plan of how the works were to be distributed in the exhibition space did exist, the final decision about the placement of the display objects was made during the night before the opening. Nevertheless, all the participants managed to find a place for their artworks and to put them up for the display, which by itself signifies, in our opinion, that the dialogue of cultures in the context of sustainable art was successful.

In a certain sense, the symposia and the exhibition could be viewed as a pilot test of the international projects' impact on the cultural landscape of the Komi Art and Design. Here we are going to discuss this impact on two different levels: the level of professors who are also professional artists and designers capable to modify (up to a certain limit) the content of the educational programmes and the level of students and graduates of the IAC, who are or have been enrolled in these programmes to become professional artists and designers.

We base our discussion on interviews with five professors of art and design working at our Institute. It should be stressed our professors took part in the *Relate North* symposia since 2015 and this participation played an important role in their interpretation of the *Sustainable Arctic Art and Design* (ASAD) ideas. Therefore, their interviews reflect not only the impact of the *Relate North - 2019* or the international projects organized in Syktyvkar in general, but of the whole ASAD-based cooperation. The interview disclosed the following ways the international cooperation influenced art and design education:

1. The most important consequence of the international cooperation stressed by all the interviewees was their inclusion into the international English-speaking artistic community. This inclusion proceeded both through publications and through establishing private contacts with artists and professors in the framework of the ASAD. The direct effect of this inclusion was the awareness of different teaching methods and techniques. Taking into account the state's spending on education is decreasing in Russia, while the workload on the professors is increasing (since 2007, the full employment of a professor presupposes 900 hours of lecturing and practical works with students), the professional developments become a difficult task. The international cooperation helps to achieve it

2. International cooperation allowed to modify the study programmes. For example, the course of folk and traditional arts in our Institute is now enriched by the elements of traditional techniques of working with wood and cloth borrowed from Finland. We also use examples from Finland, Norway, and other northern countries to demonstrate the ways traditional ornaments can be transformed into modern fashion and used in information materials. This knowledge can later be used for creating souvenirs and other art objects by those students, who would choose to work at local art shops. Another example is our recent rethinking of the notion of recycling as the second processing of already used materials for creating art objects and promoting the idea of ecological sustainability. We have also included a regional component with a special focus on arctic ecology into our design courses.
3. The international cooperation, particularly the participation in symposia and masterclasses, made our professors manually (rather than visually) familiar with the traditional cultures of the arctic peoples. This is very important, because in the case of studying popular books and museum collections one can gain only visual familiarity with a culture. During the masterclasses, one can experience not only visual images, but the objects themselves and learn the skills and techniques involved in creating them.
4. An important result consists in applying the community art methods to the students. Indeed, our education tradition is built on the interaction between the student and the teacher and does not include interaction among the students. Now, on the basis of our experience from the workshops and particularly of the LiLa project, we have recognized the value of group work, where the initial idea of an art object gets rethought several times in the process of its creation. Even the skeptically thinking professors now recognize the value of such an approach. The group work methods and the brainstorming were first applied during our students' practical training in summer, 2018. Another innovation in the Institute's approach to education is the space-based education as a tool for understanding the local culture, landscape, and ecological environment. As a result of its implementation, the rare, but very effective small workshops outside the lecture rooms were organized several times in the course of teaching folk arts and crafts
5. Collective art as a professional dialogue between the teacher and the student was also stressed. This particularly concerns the exhibition construction, when different display objects should be organized in a single display space. The exceptional

professionalism of the foreign professors participating in the project allowed our students to take part in this work and become the participants in the co-creation process. This is very important and not usual at all for traditional education in Russia. Indeed, Russian exhibition organizers usually avoid "mixing genres" that is they do not mix video, audio, and traditional art objects. For us, the process of preparing the exhibition and then discussing it, when each participant could present his or her ideas, was particularly valuable.

6. The ecological issues became the key factor for understanding the local landscape and representing ideas through Art. In this context, the problems of climate change and the garbage pollution now became the start point for presenting different modern art practices for the students.
7. A completely new practice spreading among our professors now consists of making the local population involved in art projects, particularly those based on local traditions and practices. Thus, our institute has created plans for several vocational schools for elder peoples to study the regional folk arts and crafts and folk toys. They are not yet realized but the idea was supported by the local organizations.

Apart from these positive impacts, the professors pointed out several serious problems, which hinder the participation of students in international projects:

1. The students do not recognize that despite all the promises of modern technologies and the apparent universality of the language of art, they still need to study English. Many students joining the art section of the Arts and Crafts institute have studied German or (less frequently) French as their main foreign language at school. However even those who have studied English, are afraid to speak it. Therefore, they perceive taking part in a cross-cultural communication as a stress rather than an opportunity to learn something from a dialogue.
2. For many students, the aesthetic aspect of art objects prevails over its concept. They believe that the visual presentation is more important than the idea or the process behind the art object presented. If these students are presented with modern art objects, their inability to attend to the process rather than an aesthetic manifestation behind them leads to their failing to understand the whole idea behind the exhibition. Partly this problem is related to the students' inability to understand the project annotation and/or the video accompanying the project due to their poor mastery of English.

3. The students do not know how to combine and use natural and artificial materials for creating an art object. Therefore, they fail to recognize that the process of creating an art object, in the case it involves the locals and takes into account the landscape, can become a part of an aspect of the resulting art, which becomes the part of the environment and does not damage it. A good example of such art is the snow sculptures by Timo Jokela. However, the very idea of such an art remains completely alien for the people in Komi, despite the many snow sculptures standing every year near Christmas trees on central squares of every city or town of the Republic. Most of these sculptures are created by artists from other regions and they often provoke a lot of criticism on the internet.
4. Many students are not able to work with local communities and fail to accept the local cultural elements significant for the people living in the north. Therefore, the art objects they produce are purely aesthetic artefacts created for a limited cultural environment, the art for itself rather than the art for community.

Figure 4. Maria Bolshedonova: Glaciers, 2013. Colored glass, clay. Photo: courtesy of the artist.

Figure 5. Agniya Shangina: Dress collection *August*, 2016-2018. Stitching, linen, embroidery, textile application. Photo: courtesy of the artist.

A close look at the student projects exhibited at the Relate North-2019 as well as at our annual student exhibitions reveals the following trends:

1. Those art students, who have taken part in international workshops, frequently choose Arctic as the topic of their works. These works represent the present Arctic as a region where different peoples with specific cultures live and specific social and ecological conditions prevail. The Arctic topics are chosen not only for the fine arts, but also, for example, for ceramics, which almost never happened before.

   For example, Agniya Shangina, an alumni of the ICA (her supervisor is Irina Zemtsova) creates a fashion collection based on the peasant folk decorations of the Russian North. Linen monochrome dresses, shorts, and skirts feature colors of the autumn northern skies and forests as well as bright embroideries.

   Every such student along with his/her supervisor started to search for an artistic understanding of the North. They rely not only on the traditional handicrafts, but also on their knowledge of history and mythology, ecologic situation, natural landscape, and even on the traditions of their own families.

   The process of broadening the range of topics as well as of shifting away from the Eurocentric design towards the arctic-focused design is evident among the students of the design department. Thanks to the ASAD, Arctic Design has emerged as one of the directions of design projecting and an object of study in our University. Thus, in the 2019-2020 academic year, several diploma projects will be devoted to the Arctic and its ecology

Figure 6. Yana Kulikova: *Norherners*, 2019. Dried flowers, glass, aluminum foil. Photo: Aneliya Lyantsevich.

Figure 7. Ksenia Filimonova: *Memory of the tree*. Clay, 2013. Chamotte, mirror. Photo: Aneliya Lyantsevich.

2. Students present their pre-project materials as well as their resulting projects using much more liberal techniques of installation and visualization of their ideas. This was particularly visible when they prepared the *Relate North-2019* exhibitions (see figure 8). The students' participation in the Lend Art projects influences their choice of materials for course and diploma projects (usually, final evaluation projects after the basic courses use the same materials as those used for demonstrations during the courses). The students have learned to place their artworks in wider contexts: for

Figure 8. Part of the Exhibition *Relate North-2019* in the Institute of Culture and Art, Syktyvkar. Photo: Aneliya Lyantsevich.

example they attempt to relate them to the natural landscapes. These changes were noted by the professors who worked with the former participants of the Land Art workshops.

3. The students have learned to combine materials and techniques, which, as they previously believed, could not be combined in the traditional and classic art or the given cultural context.

Of course, the authors' vision of the results of the international cooperation presented above can reflect their subjective perception rather than the objective reality. To check for this, we asked an independent observer Olga Orlova, a researcher at the National Gallery of the Komi Republic, a member of the Komi division of the Russian Union of Artists, and a member of the state examination committee of the ICA, to assess this impact. Her opinion was:

"The international projects have certainly led to an actualization of the process of teaching (i.e. the teaching now includes new techniques and methods). During the last 5 years, the course and diploma projects by the students demonstrate an increased in-

Figure 9. Natalia Kazankova: *Endless Inspiration*, 2019. Hand-printed textile, embroidery. Photo: Aneliya Lyantsevich, 2019.

terest towards the issues related to the Barents Region and the North: their ecology, cultural landscape, humanization of their environment, ethnic peculiarities of the regions. The international projects of the Syktyvkar State University do not only lead to a positive exchange of experiences, but also contribute to the development of the united information and cultural space of the northern peoples".

Another respondent, Vladimir Durnev, who was involved in almost all the international projects described here (after his graduation from the ICA, he worked there as a lecturer before moving to Taiwan to take a post-graduate position in the National Taipei University of Education), replied:

"I cannot deny the fact that all this work and participation in international conferences and residencies had an impact on my personal growth and my creativity. I became more active in applying for international competitions and achieved the success that I could not imagine a couple of years ago. I mean my participating in one of the world's prestigious and competitive exhibition for ceramic artists *Mino 2017* in Japan and becoming a member of the International Academy of Ceramics ICA. I have learned from

colleagues, read their papers, and inevitably become more experienced in the field of sustainable art and design.

Students and young colleagues-artists and teachers, in my opinion, were also inspired by what they saw and learned during joint projects with the University of Lapland. We also published a collection of articles on the results of the conference *Shaping creativity through art education* in 2013, right after our first encounter with the ASAD network projects. We translated the most exciting and inspiring papers by Glen Coutts,

Figure 10. Aneliya Lyantsevich, Anastasia Overina, Elena Naddaka, Dariya Pershina: *Marfa. Ust-Tsilma* (fragment), 2018. Mixed media. Photo: Aneliya Lyantsevich.

Tim Jokela, Roxane Permar & Susan Timmins, Herminia Din, Mette Gårdvik, Karin Stoll & Wenche Sørmo into Russian. This conference book was indeed an essential and breakthrough moment for the promotion of the ASAD network ideas in the Komi Republic.

One can find the influence of our international cooperation in students' art projects. This influence is reflected indirectly through teachers who lead graduation projects focusing on the problems of culture, history, and ecology of the Komi Republic. Not all our graduates have developed creatively as artists. Still, many of them become art teachers in the cities and suburbs of Komi and of the Arkhangelsk region where they transmit all the knowledge they gained during the study. Although research is needed to make a promising conclusion that our international collaborations have had an impact on the creative activities of our graduates, I believe that there is a positive effect. I think it is enough to make a list of themes of art projects and exhibitions in Syktyvkar to see how those inspiring ideas articulated by a young generation of artists, which mostly consists of Syktyvkar University alumni. I can only list a few names and projects: Aneliya Lyantsevich *Marfa*; Inga Popovskaya & Sasha Poroshkina *Room for two*, Agnyia Shangina - Linen clothing Collection; Vera Petrovskaya *L... confession* and many others.

Conclusion

It is to be concluded, therefore, that the international cooperation has had a significant impact on the process of teaching, and on all people involved in it, both at the ICA and in the artistic community of the Komi republic in general. Young artists and designers of the Komi Republic developed a new and modern artistic environment under the influence of the ASAD activities and the ideas of sustainable arts and design. This new artistic environment promotes the process of re-interpreting the history, mythology, natural landscapes, and territory through the prism of arts and design. When we overview and evaluate the eight years of our international cooperation, we can assess better the role our colleagues from the ASAD partner universities have played in it. We wish to express our great gratitude to them for their support and understanding.

References

Alexeeva, L. L., Byhhovskaya, I. M., Kochelaeva, N. A., Martynova, V. V., Olesina, E. P., Fedorova, T. S., & Shkholar, L. V. (2011). Russian Institute of Cultural Studies. https://unesdoc.unesco.org/ark:/48223/pf0000212073. (In Russian.)

Bigell, W. (2018). Udora: The beauty of mowing the grass together. In T. Jokela, M. Hiltunen, E. Härkönen & A. Stöckell (Eds.). *Living in the Komi landscape* (pp. 98– 103). University of Lapland.

Durnev, V. (2018). Beautiful traces. In T. Jokela, M. Hiltunen, E. Härkönen & A. Stöckell, A. (Eds.). *Living in the Komi landscape* (pp. 16–17). University of Lapland.

European Commission (2006). *Recommendation of the European Parliament and of the Council of 18 December 2006 on key competences for lifelong learning* (2006/962/EC). https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1591350722041&uri=CELEX:32006H0962

European Commission (2012). *Rethinking education strategy*. https://ec.europa.eu/commission/presscorner/detail/en/IP_12_1233

Härkönen, E., & Stöckell, A. (2019). Cultural sustainability in art-based iterdisciplinary dialogue. Special Issue: Visual Art-Based Education Research*, International Journal of Art and Design Education 38*(3), 639-648, https://doi.org/10.1111/jade.12246

Hiltunen, M., & Zemtsova, I. (2014). Northern places - tracking Finno-Ugric traces through place-specific art. In T. Jokela & G. Coutts (Eds.) *Relate North: Engagement, art and representation* (pp. 60–81). Lapland University Press.

Hiltunen, M., Zemtsova, I., Bazhenova, N., Lyantsevich, A., & Tupenko, T. (Eds.) (2019). *Relate North 2019: Tradition and innovation in art and design education.* University of Lapland and Pitirim Sorokin Syktyvkar State University.

Jokela, T., Coutts, G., & Huhmarniemi, M. (2020). Tradition and innovation in Arctic sustainable art and design. In L. Gurlenova L. (Eds.) *Human. Culture. Education 1*(35), 84–99, DOI: 10.34130/2233-1277-2020-1-84-99 http://pce.syktsu.ru/publes/1_35_8.pdf

Thoe, S., & Daraev, M. (2019). Sculpture "The loneliness of being human". In M. Hiltunen, I. Zemtsova, N. Bazhenova, A. Lyantsevich & T. Tupenko (Eds.). *Relate North 2019: Tradition and innovation in art and design education (*pp. 40–41). University of Lapland and Pitirim Sorokin Syktyvkar State University.

Stukalova, I.B. (2018). Развитие магистратуры в России: предпосылки, проблемы и перспективы [Development of the Master Programms in Russian: preconditions, problems and perspectives]. Современное образование [Modern Education] 3. 1-8, DOI: 10.25136/2409-8736.2018.3.26892 URL: https://nbpublish.com/library_read_article.php?id=26892

Lyantsevich, A. (2018). Signs of the place. In T. Jokela, M. Hiltunen, E. Härkönen., & A. Stöckell (Eds.) *Living in the Komi landscape* (pp. 10–11). University of Lapland.

UNESCO (2015). *Rethinking education: towards a global common good*? https://www.sdg4education2030.org/rethinking-education-unesco-2015

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Living in the Near North: Insights from Fennoscandia, Japan and Canada

More than a billion people around the world see snow falling every year. Winter in countries south of the circumnorthern world therefore presents itself as one of the major fields of total nordicity.

— Louis-Edmond Hamelin[1]

There exist many ways of examining and understanding circumpolarity and what characterises life in the North. Louis-Edmond Hamelin, a French-Canadian geographer economist and linguist was a great thinker of the northern world who changed our understanding of the globe's cold regions. This is particularly true in the Canadian province of Quebec where Hamelin's extensive body of work, written in French, encouraged Quebeckers to perceive and describe their environment in a different way, a northern way. The most influential of Hamelin's ideas is his concept of *nordicité* (in English – nordicity; see Hamelin, 1975, 2000, 2002, 2012). By introducing the word nordicité, Hamelin hoped to express the 'perceived, experienced, and even imagined state of a cold area located in the boreal hemisphere'[2] (Hamelin, 2000, p. 8). Hamelin invented hundreds of new French words to describe northern conditions, creating a holistic yet complex vocabulary that also acknowledged the fundamentally different and co-existing ontologies of Indigenous and Western societies living in the North. He contributed critical perspectives on the relationships Quebeckers have with winter and the North and, perhaps most famously, introduced a *northern index* to define and compare the degree of northernness of specific regions. By expanding the lexical dimensions of the words *nord* and *nordique*, Hamelin's legacy resonated outwards through a wide range of disciplines including linguistics, indigeneity, culture, politics, geography, tourism, sports, literature, art and design.

Figure 1. Heated sidewalks alongside a snow playground in Umeå, Sweden. Photo: C. I. Beaulé, 2018.

Instead of using latitude as the sole indicator, Hamelin's northern index combined multiple factors to measure a place's degree of northernness. These factors included latitude, length of summer (+6 °C), length of winter (–0 °C), presence of ice, precipitation, vegetation, terrestrial mobility, air services and accessibility, population size and economic activity (Hamelin, 1975; 2000). Each factor is measured in polar values (vapos) where 1,000 is set as the maximum level achieved only at the North Pole itself. A vapos of 200 delineates the southern boundary of the 'real North'. Hamelin used his index to subdivide the north into three distinct zones: the *Extreme North*, which is typically uninhabitable, the *Far North*, defined as the biogeographical Arctic, and the *Middle North* where a subarctic climate reigns and winter typically lasts around six months (Hamelin, 2000). Hamelin also defined a fourth zone lying just outside of the 'true North' where human activity and human inhabitation increase but where the vapos measure dropped below 200[3]. He called this region the *Near North* – a place where strong winter conditions still take hold - where nordicity emerges as a seasonal manifestation.

Figure 2. Approximation of the Global Near North, extrapolated from Hamelin (2002). Illustration by the authors.

In the years that followed, Hamelin used his index to map nordicity across the northern hemisphere. In 2002 he produced a map of international nordicity (Hamelin, 2002) that traced an undulating line across the world's circumpolar countries. This map sought to encourage circumpolar discussion and comparison between disparate northern regions. Unfortunately, Hamelin's 2002 map did not include any mention of the Near North and as such, it left a great number of cities, towns and regions off the map and arguably out of the nordicity debate. With this in mind, we have attempted to delineate an approximate representation of the global Near North that we have extrapolated from Hamelin's international nordicity map (2002). To do this, we have delineated a zone for the Near North lying immediately to the south of Hamelin's nordicity line (see Figure 2).

This new cartography acknowledges that although northernness is often associated with remote ways of life and sparsely populated areas, the North also includes important urban and semi-urban regions located in more temperate zones. Indeed, the Near

North's seasonal nordicity (i.e. winter) can be short yet intense and radically alters these regions with visual meteorological characteristics of the 'real North' (Hamelin, 2002). The combination of having a small percentage of the world population living in the cold regions of the globe and the ease with which cultural exchanges occur today (facilitated by globalisation and technological developments) can have major influences on how projects and other initiatives are imagined and designed. By living in the Near North, we observe many objects and environments that are designed and produced in places with totally different climates and environments. This longstanding phenomenon of how southern designs influence and dictate northern designs seems almost ubiquitous. We are strongly reminded of this truism when we observe the extent to which southern Italian designs influenced even the most accomplished "northern" architects like Alvar Aalto with his Mediterranean piazzas. Closer at hand, we have our lovely California iPhones which unfortunately shut down at 50% when taken out of our pockets in temperatures below zero degrees Celsius. Looking upward, the skylines of our big cities also seem to mirror the ubiquitous designs of southern cities throughout the world despite great differences in meteorology and local culture. These points have been raised periodically by designers, for instance Victor Olgyay who pointed out the disturbing similarity of urban landscapes despite radical differences in geography and meteorology in his 1963 book *Design with Climate*.

Indeed, the idea of rethinking how urban societies can better 'live with winter' is not new. The topic saw its apogee in the 1980s and 1990s with the *winter cities* movement. Despite contemporary interest in the topic, it must be noted that the subject is only rarely explored in our time – despite the colossally negative effects that result when winter and questions of the northern environment are put aside or overlooked. This brings us to the central question addressed in this chapter: What should winter cities look like today, and what relevance should this topic occupy within contemporary design practices and in design education?

The theme of this book is tradition and innovation in art and design education. The term *tradition* is broadly defined as 'a belief, principle, or way of acting that people in a particular society or group have continued to follow for a long time' (Cambridge Dictionary, n.d.). In turn, *innovation* is described as 'the use of a new idea or method' (Cambridge Dictionary, n.d.). Although tradition and innovation can often be perceived as conflicting concepts, they are here understood as being rather deeply intertwined. Innovating itself is arguably an intrinsic tradition amongst human beings and is not bound to recent technological advancements. As Jokela, Coutts and Huh-

marniemi (2020) have suggested, '[there] may be fruitful ground to be explored in the intellectual and pragmatic space between the two notions just as there is much to be gained from locating theory and practise at the confluence of art, design and education' (p. 87). In the field of design, a similar idea is presented through the idea of 'neo-local design' which sees local cultures and traditions as potential resources for sustainable innovations (Ceccarelli, 2019).

In the context of this chapter, we consider local traditions as being not only a catalyst for more innovative design concepts, but also ones that are place-based and contextually appropriate. We also value the act of sharing a diversity of traditions amongst northern societies to foster collaboration and exchange in facing common challenges. Given that circumpolar regions have similar yet unique contexts (traditions, cultures, histories), we must determine in what ways we can value and share the multiple approaches of communities that live with winter throughout the globe. The following sections take on a socio-climatic perspective on living in the Near North and will provide insights on how different cultures live with winter in urban contexts. Specifically, we draw on examples that emerged from projects exploring the topic of 'circumnorthern' design, focusing on Fennoscandia[4] (mostly Oulu, Finland and Luleå, Sweden), Japan (Sapporo), and Canada (Montreal). By presenting these cases involving winter cities, we seek to inspire designers and design educators living in the circumpolar Near North to re-examine their local contexts and traditions and see them as resources for innovation, in order to develop creative and sustainable solutions that meet contemporary needs.

Winter Cities: A Socio-Climatic Exploration

So, what is a winter city? The World Winter City Association for Mayors (WWCAM) defines a winter city as having 'harsh winter climatic conditions' including an annual minimum of 20 cm in accumulated snowfall, and where the average January temperature is 0 °C or colder[5]. Winter cities can be compared based on different factors, for instance, the number of days below 0 °C per year, January's average temperature, rainy days in January–February, average snowfall and number of days where the darkness is more than 13 h (Vivre en Ville, 2018). The winter city movement that emerged in the 1980s and 1990s, predominantly in North America, was led mostly by urban planners, researchers, engineers and city leaders address the topics of winter cities and the *climate-sensitive design approach* (Culjat & Erskine, 1988; Mänty & Pressman, 1988; Pressman, 1995, 2004; Rogers & Hanson, 1980). The movement was highlighted by the creation of the

Liveable Winter Cities Association in 1982 in Minnesota (USA) and the WWCAM in 1982 in Sapporo (Hokkaido, Japan). A more recent wave of interest has been observed, particularly in Canada, where cities such as Edmonton and Montreal have developed their own extensive winter city strategies (Vivre en Ville, 2018; Winter City Edmonton, 2012). Moreover, new events continue to emerge, such as the Winter City Shake-Up event, which was first held in Edmonton in 2015, bringing together experts in 'winter design, winter business, and winter fun' or the creation of the Winter Cycling Congress[6]. For winter cities, like other cities around the world, the role of design in making sustainable, liveable, healthy and prosperous societies is increasingly being advanced. For example, the Finnish city of Rovaniemi, located within the Arctic Circle, has recently been promoting their competence in this area in the very identity of their town, branding it as the Arctic Design Capital of the world in 2015. This title was claimed partly because of its fluid seasonal transitions throughout the year by the means of architecture, urban planning, art and design, snow maintenance, winter technologies, transportation and active mobility infrastructures.

The following sections seek to contribute to the discussions about winter cities by including them within the wider discussions on the topic of design in the circumpolar North. How do people live with winter in different urban cities? Are there similarities, common challenges or inspiring ideas? The next sections present some insights that emerged from visiting, living or working in various cities located in the global Near North. Most of the material was collected as part of exploratory fieldwork on the topic of northern design in the winter of 2018, where multiple winter cities were visited over several weeks. These have been organised to highlight the predominant approaches found in Fennoscandia, Japan and Canada.

The Fennoscandian Approach – Winter Is Fundamental

The Nordic countries (Iceland, Finland, Sweden, Norway, Denmark) are located in high latitudes, yet have considerable populations living close to or within the Arctic Circle, in contrast to most circumpolar countries. This liveability is primarily due to the warmth brought in by the Gulf Stream. In this sense, the cities such as Luleå in Sweden or Oulu in Finland, which are all about 65° N in latitude but on the Gulf of Bothnia's coast, would be on the border between the Near North and the Low Middle North in Hamelin's 'nordicity' index (Cabouret, 1989). Thus, even cities located in the high latitudes of Northern Europe can be valuable subjects for cultural and practical exchanges amongst global winter cities.

The idea that Nordic countries are masters of living harmoniously with winter in urban environments is commonly held. The popular Scandinavian idiom, 'There is no such thing as bad weather, only bad clothing,' conveys this attitude towards the winter. To say the least, Nordic countries are often cited as inspirations by North Americans, for whom winter is frequently portrayed as a seasonal and unpredictable catastrophe. In this investigative project, some general observations on the way Nordic countries live with winter emerged. In fact, from a North American point of view, it does seem that many Fennoscandic cities have winter as a fundamental part of their daily life. Cities rarely seem to be in the on /off season when it is winter, but rather, they make use of what the winter brings. This is particularly observable through the multiple options for citizens to get around in an active manner as well as the various winter activities that are made freely accessible. The snowy and icy conditions that come along with the cold winter season can bring on meteorological events that can make mobility in urban cities a challenge, from icy roads and slippery sidewalks to slush puddles. These can increase road accidents, ice-related falls and injuries, and contribute to isolating those who would rather avoid setting foot outside. The elderly and inhabitants with reduced mobility are the most vulnerable. Hence, design problems in winter cities are also public health problems.

Figure 3. Winter cyclists in Oulu, the winter cycling capital of the world. Photo: C. I. Beaulé, 2018.

Circumnorthern Finnish and Swedish cities are great examples of how extensive systems of pedestrian and cycling paths, which are typically independent from the roads for cars, can allow citizens to safely navigate from point A to B on foot, bike or with a kick sled when the climate and path maintenance allow. This is observable in most (if not all) Finnish cities, even those located within the Arctic Circle. Moreover, these paths allow citizens to easily be active in their daily activities as well as accessing some level of nature although they live in urban areas with sections designed to go through small sections of forest. Addressing the increasing health issues related to inactivity in youth, winter cycling advocates (or rather year-round cycling) in the city of Oulu created the Winter Cycling Federation which hosts international congresses each year to address the world challenge of reduced number of cyclists in the wintertime. In fact, Oulu has been deemed the winter cycling capital of the world due to its extensive cycling paths and regularly maintained cycling paths during the wintertime (Perälä, 2015). In a discussion, the founder of the association emphasised that, with the proper mindset, any winter city could see more cyclists on their streets during the wintertime, noting the fact that Oulu only started developing these infrastructures in the 1970s. Moreover, observations in the fieldwork found that winter cities in Fennoscandia rarely use salt on their pedestrian walkways and cycling paths, opting for a variety of methods depending on the weather conditions: sand, small rocks, machinery that breaks icy covers and various ploughing techniques that leave flat layers of snow on the ground. Leaving snow on the paths, to the surprise of some, provides traction and does not require expensive gear or special bikes to navigate on them. Less salt also reduces the rusting process caused by excessive salting. In addition to the functional and active winter mobility infrastructure, the common routine activities that can be said to reflect Finland's deeply rooted 'winterness' are multiple: sauna and ice swimming, cross-country skiing as a fundamental winter activity in school curricula, and perhaps the fact that they have a national holiday (*Laskiainen*) that revolves around sledding and eating pastries.

In the Swedish city of Luleå, the sea surrounding the city centre becomes a hot spot for anyone seeking to enjoy winter sports. Free of charge, the city transforms the frozen body of water into a long ice track (see Figure 4). During a winter festival, all imaginable winter activities take place at the same time in groups of people of all ages: ice hockey matches, curling, kick sledding, ice skating, snowmobiling, fat biking, ice sculpting activities and even a winter obstacle race. Although eclectic, these activities form a dynamic and organic setting for citizens to enjoy time outdoors on a

Figure 4. In Luleå (Sweden), a frozen river becomes an accessible playground for all winter activities. Photo: C. I. Beaulé, 2018.

Figure 5. A parking infrastructure doubles as a winter sledding slope in Piteå (Sweden). Photo: Åke Eson Lindman; Design by White Arkitekter and Henning Larsen Architects, 2015.

regular basis in the heart of the city. Other than designing cities that facilitate winter mobility and outdoor activities, designing with the winter in mind can lead to innovative infrastructures with multiple uses. For example, a large parking building in Piteå doubles as a sledding slope in winter (see Figure 5). In a similar manner, a hospital in the city of Sundsvall has been using snow collected during the winter as a natural cooling agent for two decades, directing meltwater from the storage space into the hospital (Skogsberd & Nordell, 2001). Snow's potential for energy efficiency could be further explored.

It can be readily observed in multiple cities in the Fennoscandian Near North that living with winter in urban settings is something that seems innate for most and is a long-standing tradition. The local contexts serve as sources of inspiration to develop solutions for citizens to enjoy their environment all year long, using naturally available resources, such as frozen rivers and seas or snow, which comes naturally.

The Japanese Approach – Snow as an Asset

Sapporo is the largest city on the Japanese's island of Hokkaido. Although Japan does not always come to mind when speaking about the circumpolar North, some cities located in polar regions receive an incredible amount of snow during winter. In fact, this city gets an annual average of almost six metres of snow per year. It comes as no surprise that the area is said to be one of the best places for downhill skiing. Similar to the Fennoscandians, the Japanese living in Sapporo embody the slogan of the WWCAM which was founded in the city in 1981: 'Winter is a Resource and an Asset' (wwcam.org). The Japanese approach primarily promotes winter as an asset for economic growth through winter tourism. This is reflected, for instance, in Sapporo's annual snow and ice festival, the Sapporo Snow Festival, which occurs primarily in the 1.5 km long Odori Park, attracting more than two million visitors a year (www.snowfes.com). The festival includes hot food stalls featuring Hokkaido specialties such as ramen soups, impressively large snow and ice sculptures (see Figure 6), stages and structures for performances that are almost entirely made of ice and snow, winter sports performances and much more. Large snow structures are also used as giant projection screens where the combination of the structure and dynamic projections create compelling stories with superheroes or anime. These snow infrastructures characterised Sapporo festival style by the size, detail, and various functions throughout the event. Sapporo's winter festival success is an example of how winter can be used as a way to increase tourism in a winter city. Additionally, during a 2018 WWCAM meeting in Sapporo, which consisted mostly of East Asian city representatives presenting their winter city strategies (e.g. from China, Korea, Japan), there were also Finnish representative members from Rovaniemi. The contrast between the Asian and Nordic representatives was notable, the former focusing mostly on tourism and entertainment, and the latter on mobility and functionality. This distinction also highlights the different winter design approaches presented in this chapter.

Figure 6. Impressively large and detailed snow sculpture in Sapporo, Japan. It doubled as projection screens for entertainment in the annual Sapporo Snow Festival. Photo: C. I. Beaulé, 2018.

Sapporo's strategies focused mostly on using its 'winterness' as an asset and resource for tourism in the area, similar to those of the other Asian cities represented.

Moreover, as they see their large amounts of snowfall as an asset, similar to the cooling system devised in Sundsvall, Sweden, snow is also used as cooling agent for Sapporo's New Chitose Airport (Nordell, 2015). Receiving such large quantities of snow does create interesting opportunities for winter tourism in urban contexts; however, it also presents challenges for designing cities that can easily manage such amounts of snow in terms of mobility. In Sapporo, large quantities of snow are left on the edge of streets and sidewalks, as inconsistencies created by variable snow levels on paths make it difficult for individuals with reduced mobility and elderly people to get around. On the other hand, the way Sapporo involves their citizens in the snow management process is noteworthy. Sapporo relies on its citizens' input to function, and much of the snow removal in residential areas is done by the citizens.

This approach was reflected in an inspiring example provided by the WWCAM in Sapporo, where children's comic books designed to teach youngsters how to get involved in the snow removal process in a fun and playful way were developed (see Figure 7). The Japanese teach their children snow management skills and knowledge at a young age. Through a specially developed comic book, starring a snowman superhero, youngsters are taught how to manage snow through fun stories. Moreover, bags and bottles filled with small stones are made easily accessible for citizens to actively participate in winter maintenance by covering slippery or dangerous areas with the stones to improve traction (see Figure 8).

Walking around residential areas of the city, the evidence of the citizens' hard work is visible (see Figure 9). As Japan has the oldest population in the world, much of this work is done by elderly citizens. One retired Sapporo citizen mentioned that his daily shovelling helped him stay in shape, but that he was worried about how he would manage when his health would not no longer allow him to do it himself. This observation foreshadows major challenges regarding snow management in Hokkaido's near future.

Figure 7. Japanese children learn how to get involved in snow management through comics and illustrations. Document provided by a representative of the World Winter City Association for Mayors of Sapporo in 2018. Photo: C. I. Beaulé.

Figure 8. Small stones are accessible throughout the city to allow pedestrians to disperse them when needed. Photo: C. I. Beaulé, 2018.

Figure 9. Snow management in Sapporo depends heavily on citizen involvement. Traces of someone's hard work. Photo: C. I. Beaulé, 2018.

The Canadian Approach – (Un)Shielding from Winter[7]

As mentioned previously, the winter cities movement became quite popular in North America where a considerable number of cities positioned in the Near North were able to benefit from greater attention paid to their northern specificities. The North American approach to winter is often characterised by an – often unconscious – desire to be shielded from the cold season. In Canada, cities located in the Near North such as Montreal, Toronto, Calgary and Winnipeg are often quite low in latitude but experience intense winter climates.

Canada's second-largest city, Montreal (Quebec), is said to be the coldest metropolis in the world. Indeed, Montrealers experience a short but extreme winter climate compared with other large cities located further north, as the city receives freezing air from the Arctic Basin throughout the winter. With annual temperatures ranging from +40 °C to -40 °C, Montreal's climate is surprisingly extreme, even bipolar. The city recently published winter city principles and strategies which describe the city's winter climate as being 'wet' and increasingly marked by irregular episodes of 'crystallisation, snow cover, melting, refreezing, recasting, new snow, rain, ice, until the final melting

which gives an impression of agony' (translated from the French, Vivre en Ville, 2018, p. 10). Describing winter as an agonising phenomenon may be a strong statement, but it reflects the effect of temperature fluctuations on the population's relationship with winter. Hamelin noted that only a minority of the Quebec population loves or somewhat accepts winter, stating that many are even 'winter-phobic' (Hamelin as cited in Chartier & Désy, 2014, p. 36). This attitude towards winter is partly conditioned by the urban and car-centric lifestyles, where a 9-to-5 work model imposes a rhythm of activities on many that leaves little room for interruptions caused by 'bad' weather. The manifestations of winter (cold, snow, slush and ice) are thus perceived as inconveniences affecting the daily activities of most Quebeckers living in cities and suburbs, and perhaps many people living in poorly designed winter cities across the globe. This phobia is exacerbated by a historical tendency to design and organise exterior environments of big cities first and foremost for summer rather than for all the seasons. This phenomenon perpetuates frustrations related to winter. When winter design does become a priority, its goal has often been limited to merely protect against, rather than to fully exploit and celebrate, winter conditions.

That said, in recent years, there appears to be a revival of interest in celebrating Montreal winters. Drawing on a rich history of winter festivals dating back to at least the late 19th Century, Montreal has begun to invest more seriously in festivities and events throughout the darker months of winter. Some notable examples include the Lunminothérapie light festival that lights up the Quartier des Spectacles areas during wintertime, or the popular Igloofest, a one-of-a-kind outdoor music festival where international live music performers bring an electrifying and colourful atmosphere to the old port of the city. These are inspiring examples, but they only target certain populations groups. In a similar vein, we are beginning to see increased support for winter mobility particularly by way of dedicated winter bike corridors and accompanying protected bike storage. These are exciting developments, but their use remains limited to a small demographic. When looking at the everyday life of Montrealers in the winter, and particularly more vulnerable groups, many challenges specific to the winter season are still to be addressed.

Montreal's winter city principles strategies (2018) have highlighted this shortcoming and the need for winter design to be further explored as well as emphasising the importance of developing an approach that reflects the local climatic and cultural contexts for specific cities in the Near North. Thus, design is positioned as a central element in developing innovative solutions. The winter city principles document prioritised ideas

Figure 10. Montreal's LabHiver (Winter Lab) weekly activities. Photo: Courtesy of Laboratoire de L'hiver (2019).

and challenges that touch on active mobility in a four-season perspective, as well as the design of collective and public spaces. These strategies were particularly motivated by the societal impacts of reduced physical activity during winter, snow and ice-related injuries, and the loneliness that can result from isolation. Indeed, for citizens with reduced mobility, the cold season can be synonyms with a loss of autonomy. For this reason, many people simply avoid going out in winter.

Inspired by its fellow Canadian city Edmonton and its 2012 winter city strategies, Montreal's proposed approach sought to include regular community-level activities that aimed to develop concepts adapted to the winter context of Montreal. In parallel to the strategic guidelines, a new action research platform was created: Le Laboratoire de L'Hiver (The Winter Lab). The Winter Lab is driven by a multidisciplinary approach which brings together stakeholders from various sectors, such as public administrations, organisations, citizens, designers and planners as well as private organisations. Amongst

its partners, the project collaborates with the Université du Québec à Montréal's École de design and the N360 Northern Design Lab. In the winter of 2020, The Winter Lab hosted multiple activities in parks, where citizens were invited to come and invent new games that could be played outdoors during the winter in urban settings. In addition to top-down strategies created at the city level, innovative winter strategies can also be developed through citizen-led initiatives or by neighbourhoods. For instance, a few Montreal districts are seeing the emergence of citizen-based actions, such as La Brigade neige (The snow Brigade), a free snow removal service for older residents with reduced mobility.

In addition to the challenges that are brought by snow in urban environments, the cold appears to be the determining factor when it comes to comfort and safety during the winter. As such, Montreal has long been recognised for its underground pedestrian network that provides a sheltered space for people working or studying in the downtown area as well as for tourists and local shoppers. Known colloquially as 'the underground city', this 32 km network of corridors and shops more resembles a mall than a city but is still greatly appreciated by those who shelter within. For many, Montreal's winter is lived indoors. For people in wheelchairs, the cold is particularly intense given their movement limitations. The same goes for parents with children in strollers, the elderly and even young people waiting for the bus. In sum, the case of Montreal strengthens the notion that Canadian urban centres are taking innovative approaches to developing their own winter city life.

If young northern designers further explore traditions that are appropriate for the North, what new possibilities could this uncover?

Concluding Thoughts

All in all, the 'Scandies' are inspiring in the way they combine urban life and winter climates, reflecting a cultural 'winterness' that is innate. The Japanese are masters at developing snow-related tourism and seeing snow as an asset, and Canadians, who previously typically shielded from winter, are showing an increasing change in perspective, as demonstrated with recent strategies developed in Montreal. Further exploring the topic of living in the Near North highlights the design challenges that are presented by melting snow, such as water and slush puddles which are still common and have not been fully 'mastered', even in the Fennoscandian winter; these seem to be universal. With a changing climate, increasingly unpredictable weather and wetter winters, these challenges will

become even more prominent in the near future. Recent research on soft mobility in winter cities (walking and cycling) suggests winter cities will also need to adapt their strategies to a changing climate (Chapman et al., 2018).

Thus, the previously developed winter city principles might soon be outdated (if they are not already). For instance, a city designed to use the reflective properties of snow to illuminate the dark winters might face challenges as snow comes later in the season. A city that relies on a frozen river as a primary space for winter activities, such as the activities on the frozen sea in Luleå described above, might need to find alternatives as the ice becomes thinner each year. Cities with aging populations, such as Sapporo, which greatly relies on citizen participation in snow removal, will be faced with snow management challenges. An island city like Montreal, which receives a significant amount of precipitation in the winter in the form of snow, might now encounter that precipitation as rain, thus causing it to radically change its weather management strategies. This, in turn, suggests winter cities around the world could benefit from more collaborations and exchange opportunities.

Perhaps these issues begin during the basic studies of future designers, where the great accomplishments of European (e.g. Italian design) and Euro–American design are presented as aspirations. How many students will be designing their mock-ups and prototypes in settings reflecting perfect green grass and warm summer days? What type of projects would emerge if students were required to look north for inspiration, rather than south[8]? This strengthens the value of having design students look at their own local contexts and cultural traditions as potential resources (Ceccarelli, 2019). Climate change and general reflections about the role of design in addressing sustainability brings us to challenge what has previously been taught as 'golden rules' in the various fields of design.

Looking at a designed and built environment with a holistic perspective highlights the way in which environmental and cultural specificities are not always considered when doing and teaching design, especially in the North. Nordicity, as imagined by Hamelin, is a fluid state that can fluctuate over time; it is a holistic and inclusive concept that connects inhabitants around the circumnorthern world. We strengthen Hamelin's nordicité concept as a powerful framework for designers navigating the topic of design in Northern environments (Beaulé & De Coninck, 2017), and stress the necessity of including areas located in the Near North as part of the conversation. There is therefore a great need for local innovation, a need for projects developed for the reality of the people here and hence, a need for design students to have tools that enable them to see their own contexts in a different light. In opposition to a *one-size fits all* perspective, one

that allows future designers to see the importance of contextually appropriate projects (i.e. climate, culture, socio-historical settings) could lead to innovative and long-lasting projects. What could future winter cities look like?

Through the topic of winter cities, this chapter argues that design education could put more emphasis on exploring traditional elements specific to the circumpolar North context that could inspire students to foster creativity as well as a sense of place. Northerners could draw from ways of knowing and doing that are specific to the North, similar to what is implied by Hamelin's nordicité or more recently by Huhmarniemi and Jokela with the term 'Northern knowledge system' which also presents itself as an interesting laboratory in which to develop art and design education (Huhmaniemi & Jokela, 2020; Jokela et al., 2020). Inhabitants of the Near North, including designers and design educators, must acknowledge their northern specificities and develop urban solutions that reflect these characteristics. The discussion around winter cities in the twentieth-first century should be anchored in local traditions and cultures and explore the new possibilities and challenges presented by globalisation and technological developments to create innovative solutions that reflect current societal contexts and challenges.

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Endnotes

1 Translation from French, original quote: 'Dans le monde, plus d'un milliard d'individus voient, chaque année, tomber de la neige. L'hiver des pays situés au sud du monde circumnordique se présente donc comme l'un des champs majeurs de la nordicité totale'.

2 Translated from French, original quote: 'La nordicité fait donc référence à l'état perçu, réel, vécu et même inventé de cette zone froide qui est sise à l'intérieur de l'hémisphère boréal'.

3 Two of Hamelin's Nordicity maps (1994, 2002) were included in a previous publication (see Beaulé & De Coninck, 2017).

4 Fennoscandia is the geographical region that includes the Scandinavian Peninsula, Finland, Karelia, and the Kola Peninsula.

5 See wwcam.org/en.

6 See wintercitiesconference.com and wintercycling.org.

7 Some elements from this section were discussed previously in a magazine article (see Beaulé, 2019).

8 Looking north for inspiration was an idea strengthened in a discussion with Tarja Outila, Finnish architect and professor at the University of Oulu, Finland.

References

Beaulé, C. I., & De Coninck, P., (2017). The concept of Nordicity: Opportunities for the design fields. In T. Jokela & G. Coutts (Eds.), *Relate North: Practising place, heritage, art & design for creative communities* (pp. 12–35). Lapland University Press.

Beaulé, C. I. (2019). Montréal attache sa tuque [Montreal straps its winter hat on]. *Relations*, *805*, 23–24.

Cabouret, M. (1989). Proposition d'une délimitation des zones 'Nordiques' en Fenno-Scandie (à l'instar du Canada) [Proposal for a delimitation of 'northern zones' in Fennoscandia (like Canada)]. *Hommes et Terres du Nord*, *3*(1), 154–160. https://doi.org/10.3406/htn.1989.2221

Ceccarelli, N. (2019). Neo-Local design. Looking at 'our local contexts' as potential resources. *The Design Journal*, *22*(1), 931–946. https://doi.org/10.1080/14606925.2019.1595409

Chapman, D., Nilsson, K., Rizzo, A., & Larsson, A. (2018). Updating winter: The importance of climate- sensitive urban design for winter settlements. *Arctic Yearbook 2018*. University of Lapland. In L. Heininen & H. Exner-Pirot (Eds.), *Arctic Yearbook 2018 : Arctic development in theory and practice* (pp. 86-105). Northern Research Forum. here: https://issuu.com/arcticportal/docs/arctic_yearbook_2018

Chartier, D., & Désy, J. (2014). *La Nordicité du Québec: Entretiens avec Louis-Edmond Hamelin* [Quebec's Nordicity: Interviews with Louis-Edmond Hamelin]. Presses de l'Université du Québec.

Culjat, B., & Erskine, R. (1988). Climate-responsive social space: A Scandinavian perspective. In J. Manty & N. Pressman (Eds.), *Cities designed for winter* (pp. 347–363). Building Books.

Hamelin, L.-E. (1975). *Nordicité canadienne* [Canadian Nordicity]. Hurtubise HMH.

Hamelin, L.-E. (2000). Le Nord et l'hiver dans l'hémisphère boréal [The North and winter in the boreal hemisphere]. *Cahiers de Gé*ographie du Québec, *44*(121), 5–25. https://doi.org/10.7202/022879ar

Hamelin, L.-E. (2002). *Discours du Nord* [Northern discourse]. Collection Recherche 35. Université Laval.

Hamelin, L.-E. (2012, June 18–19). L'application au Québec du concept de nordicité [Applying the concept of nordicity in Quebec]. Presented at the *Mobilisés pour le Nord durable* conference. Québec, Université Laval.

Huhmarniemi, M., & Jokela, T. (2020). Arctic arts with pride: Discourses on arctic arts, culture and sustainability. *Sustainability 2020*, *12*, 604. doi:10.3390/ su12020604

Cambridge Dictionary. (n.d.). Innovation. In *Dictionary. Cambridge.org dictionary*. Retrieved September 4, 2020, from https://dictionary.cambridge.org/dictionary/english/innovation

Cambridge Dictionary. (n.d.). Tradition. In *Dictionary.Cambridge.org dictionary*. Retrieved September 4, 2020 from https://dictionary.cambridge.org/dictionary/english/tradition

Jokela, T., Coutts, G., & Huhmarniemi, M. (2020). Tradition and innovation in Arctic sustainable art and design. *Human Culture Education*, *1*(35), 84–99. https://doi.org/10.34130/2233-1277-2020-1-84-99

Mänty, J., & Pressman, N. (Eds.). (1988). *Cities designed for winter*. Building Book.

Nordell, B. (2015). Using ice and snow in thermal energy storage systems. In L. F. Cabeza (Ed.), *Advances in thermal energy storage systems* (pp. 187–200). Woodhead Publishing. https://doi.org/10.1533/9781782420965.2.187

Olgyay, V. (1963). *Design with climate: Bioclimatic approach to architectural regionalism*. Princeton University Press.

Peralä, T. (2015, May 22). Oulu – The winter cycling capital of the world. Finland. Etlis: The Urban Mobility Observatory. https://www.eltis.org/discover/case-studies/oulu-winter-cycling-capital-world-finland#:~:text=Finland,-By%20News%20Editor&text=The%20City%20of%20Oulu%20(190,%2C%204.3%20m%2Finhab

Pressman, N. (1995). *Northern cityscape: Linking design to climate*. Winter Cities Association.

Pressman, N. (2004). *Shaping cities for winter: Climatic comfort and sustainable design*. Winter Cities Association.

Rogers, W. C., & Hanson, J. K. (1980). *The winter city book. A survival guide for the frost belt.* Dorn Books.

Skogsberg, K., & Nordell, B. (2001). The Sundsvall hospital snow storage. *Cold Regions Science and Technology*, *32*(1), 63–70.

Vivre en Ville. (2018). *Ville d'hiver: Principes et stratégies d'aménagement hivernal du réseau actif d'espaces publics montréalais* [Winter city: Principles and strategies for the planning of the active network of Montreal public spaces]. Vivre en ville.

Winter City Edmonton. (2012). *For the love of winter: Strategy for transforming Edmonton into a world-leading winter city*. City of Edmonton.

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Tupa Dome: Arctic Design with Snow and Ice

Snow and ice are design materials, which are quite unusual in the scale of global design education, but reflect the northern environment and give special possibilities for design schools situated in the sub-arctic region. This book chapter describes a student project, where a University of Lapland student group, supervised by the teaching staff, took part in the *International Ice and Snow Innovation Design and Construction Competition* in Harbin, China, in December 2019. The competition, hosted by Harbin Institute of Technology (HIT), had the theme of Polar Dwelling - Design and Construction Competition of Contemporary Arctic Igloos. In the competition, aspects including environmental impact, cultural heritage and technological innovation were all taken into account. 43 competing teams, seven teams were chosen to attend the final phase in Harbin. The chapter describes the design and construction of *Tupa*, a 12m x 12m dome construction with three layers of snow, ice and slush, with interactive sound and light design (see Figure 1). The concept consisted of two igloo-like dome constructions joined together. In the *Tupa* concept, tradition and innovation are brought together.

The educational framework for the competition participation was the Arctic Design Project course, which is completed by bachelor students across different design disciplines at the Faculty or Art and Design at University of Lapland. In addition to the snow design, the chapter also describes the setting for the educational context of the course, which focuses on different aspect of Arctic Design. The *Arctic Art and Design* approach has been integrated into the different aspects of the art and design education (Jokela & Coutts, 2018). Whereas the field of Arctic Design is still in the process of taking its form (Tahkokallio, 2012), it includes a wide selection of different viewpoints addressed in the project course. Integrating interactive technologies in the ice and snow constructions is one of the innovative design exploration directions with arctic materials (Colley, Yliharju & Häkkilä, 2018). The Harbin competition continues the series of international

exhibitions of University of Lapland design students, where the use of nature materials is combined with the design visions of simplicity and sustainability (Häkkilä & Johansson, 2018), in the spirit of *Arctic Design*.

Related Work

Arctic Design as an Approach

Arctic Art and Design is a strategic priority of the Faculty of Art and Design, University of Lapland. The faculty has a long-standing history with addressing topics that are related to its northern location, and Arctic Art and Design is shown throughout the art, design and research that is conducted at the faculty. The topic has been addressed in numerous art and design projects which have been conducted in collaboration with the local communities producing, e.g. environment art installations (Jokela & Coutts, 2018), and showcased in design exhibitions in Finland and abroad (Häkkilä & Johansson, 2018). During recent years, within the Arctic Design approach, interactive technologies have been explored. Integrating interaction design with traditional product design has inspired new representations, which draw their origin from northern nature, the harsh winters, and Lapland landscapes. Interactive components, such as different sensors, lights, and sound have been integrated with design installations using wood, water, glass, or textiles. Examples of these interactive pieces reflecting Arctic Design are the Solar Shirt (Roinesalo et al., 2016), a reindeer leather coat integrating solar cells, and a reindeer head shaped virtual reality headset. Both pieces have been exhibited internationally.

The viewpoint to Arctic Design can be through the design contexts and materials, as with snow and ice. Considering that the snow and ice constructions are gaining an increasing amount of interest in the tourism industry in Lapland (Miettinen et al., 2019), the choice of design material is also very topical. Winter tourism sites are setting up hotels, bars and activity parks created from snow and ice. Experiencing the purity of the authentic winter materials is an essential part of the fascination experienced with large snow and ice constructions, bringing the arctic nature materials at the fingertips.

General Background on Snow and Ice Construction

Figure 1. *Tupa* snow dome in Harbin. Photo: Manne Martikainen, 2019.

In Finland, snow and ice structures are built according to official regulations and every snow building construction project requires approval from the authorities (Design and

Construction Guidelines for Snow Construction, 2001). The construction process and use of structures is also supervised during the life-span of the end product. The main reason for the uniform guidelines and strict regulations is to guarantee the safe use of these temporary structures, where many variables have to be considered by both the builder and the end user (Ryynänen, 2011).

Snow and ice can be formed into structures of variable sizes and utilizations. Large-scale structures and complete snow designed environments have been built in Lapland since the mid 1990's. Snow is one of the main attractions that draws tourists to visit Lapland, and in recent years, there has been a growing interest in established winter tourism attractions. This has led to a growth of the business and the world-wide recognition of the industry. For instance, a well-known case which gained media publicity around the world has been Snow Village - Game of Thrones.

Every snow and ice structure needs to be designed on a case-by-case basis to ensure the execution of the project in the most feasible and safest manner possible. Naturally, a small-scale project requires a smaller set-up, whereas large projects need a more detailed approach to the specific design problem. Most projects have a relatively short life-span, and reach from project planning through several design phases to the melting or destruction of the outcome. After all, snow and ice are water in its solid crystalline state, and thus susceptible to temperature and climate changes among other external factors. It is possible to extend the structures' life-span but this would require constructs to be built in places where the climate is controllable. In practice this means a consistently cold and breeze-free context, or the use of traditional and unsustainable cooling equipment. Recent developments in this area have made year-round snow constructions somewhat feasible as both the Ice Hotel in Jukkasjärvi, Sweden and Kemi Snow Castle have constructed parts of their attractions indoors making use of solar power to run their vital cooling equipment. This move has allowed visitors to these attractions to experience the snow and ice constructions outside the winter months.

The Lapland University of Applied Sciences together with the University of Lapland are offering education in the areas of snow construction and snow and ice design. These courses are attracting now a large number of professional people from all parts of Finland. The University of Lapland and Lapland University of Applied Sciences have extensive experience and long-standing collaboration on the topic (Härkönen, Jokela & Yliharju, 2014), and a history of several European Union (EU) and nationally funded joint-venture projects developing the key areas of the snow construction and the snow and ice design.

Interaction Design with Snow and Ice

The materiality in interaction design has gained increasing amount of attention during recent years (Wiberg, 2018). The user experience with different material qualities can be examined e.g. with material probes technique, which is a methodology involving physical samples of different materials, and a procedure to examine them (Jung & Stolterman, 2010). An exploratory study on how different natural materials are perceived reveals how they bring up different associations, and, for instance, water is perceived as pleasant and fun, and stone as serious (Häkkilä, He & Colley, 2015). Tangible user interfaces, where the interaction with the system is happening through a physical contact (Shaer & Hornecker, 2010), are an interesting area of interaction design. With tangible user interfaces, the material characters of the user interface design play a big role in the overall user experience.

Colley and his colleagues have formulated a design space for interaction design with ice (Colley, et al., 2018). This framework distinguishes between optical, thermal and materiality as the physical properties. In addition, the design space addresses different contexts for the ice, as well as dynamic properties of it, including melting and freezing. Research has used the snow and ice as part of interactive installation design, for instance as a 'gamified' projection wall element in an architectural urban space (Yliharju, Mori & Häkkilä, 2018). Earlier, Häkkilä's research group has created an interactive installation of an ice-wall. Here, an ice-wall construction was configured to operate as a large touch screen with a back-projected graphics user interface. This was first demonstrated outdoors (Virolainen et al., 2010), and then later constructed in an indoors event, where it functioned also as part of the interior design set-up (Ventä-Olkkonen et al., 2014).

The Education Set-up

Taking part in the Harbin snow and ice competition was organized as a part of a bachelor level course *Arctic Design Project* at the Faculty of Art and Design, University of Lapland, where it was done as a group project, amongst six other projects addressing various topics related to the north and Arctic Art and Design context. The course is organized as a two-semester course, i.e. over the winter, and its aim is to teach students project working skills through a multidisciplinary design project. The students work in a project in groups of 6-12 people, and represent different design education disciplines of the faculty, i.e. industrial design, graphics, audio visual media, textile and interior design, and clothing design. The course has a long-standing history in the faculty, but was recently re-focused to address specifically topics related to northern aspects, reflecting the

faculty's focus on Arctic Art and Design. Every year, some projects aim for an exhibition at Arctic Design Week, organized in Rovaniemi in February/March. Over the past years, the projects have included collaboration e.g. with the Roki Hockey ice hockey team, and the Pilke museum in Rovaniemi. The course has also contributed to international design exhibitions e.g. at Milan Design Week (Häkkilä & Johansson, 2018). Since 2017, the course has also included a snow construction project, where the students create a large-scale snow installation. In February 2019, a snow installation was set-up at an internationally recognised event, *Sapporo Snow Festival*, Japan, with Antti-Jussi Yliharju as the supervising teacher.

The Arctic Design Project course is an example of how the design education seeks to combine tradition and innovation, similarly to the Arctic Design approach in general. The topics and collaborators of the course are bound to today's actors, events, and society. The projects take advantage of the technology, and typically include a multimedia element entwined with other design deliverables. On the other hand, the projects apply traditional design techniques and prototyping, and appreciate the hands-on skills applied. The outcomes of the course always seek to have a fresh design outlook.

Other snow and ice design courses organized every winter by the Faculty of Art and Design are typically collaborative snow and ice design workshops conducted at the location of different tourist attractions in Lapland. The works have been seen, for example, at Ruka and Salla ski resorts. These workshops attract both local and exchange students from different design and art disciplines, and are a great way for the students to get a hands-on introduction to Arctic Design through the medium of snow and ice. A major element in these courses is to get inspired by the Arctic. Students who may not have experienced (sub)arctic conditions beforehand can learn new ways to use their own design skills in a totally new context, and get vital experience in operating as part of a creative multidisciplinary team.

The Design Process

In our snow and ice construction project, we followed a design process that can be divided into four phases: the design initiation, design exploration, design implementation, and design realisation phase.

The Design Initiation Phase consisted of making the project plan and establishing the core design team. In practice, this was carried out by choosing a balanced multidisciplinary student team by the instructor. Each student was given a role in the team with main

responsibilities shared among the group. Next, the competition brief was analysed, and the major aims and relevant specifications were identified. The general scale of the structure, lighting design, interior design, functions of different elements of the environment and also the overall theme were the main design variables identified during this phase. An important part of the initial phase was also to secure funding for the project.

In the Design Exploration Phase the team started ideating around the given theme "Contemporary Arctic Dwelling". Each participant shared their thoughts that had sparked from it. The ideas were evaluated against the design team's desires and the competition guidelines. To come up with more polished ideas, and for the team building, the team spent few days at a cottage with sauna to sketch ideas. During that trip the idea of four elements, and use of the traditional building technique with a new twist (a two-domed air-mould) was developed. The content planning for the snow and ice environments was also carried out in the Design Exploration phase. The environments include not just the physical building exteriors, but the complete concepts are a combination of scenography, art and architecture, events, lighting, multi-media design, etc. Analysis of the context and culture is entwined with the plans in order to allow concepts to be designed for a specific place and its characteristics.

In the third phase, Design Implementation, the chosen design concept was developed into the final concept through testing and prototyping with the materials and techniques. As the material for the mould, we used plastic sheeting (the material which in agriculture is used to cover piles of feed). The mould was put together with a standard sewing machine and a special tape made just for that type of plastic. Before the competition, we wanted to try and learn about the three-layered building technique already in Finland. We built a 1:2 scale model of our final version in the University of Lapland's backyard. Here, warm winter weather temperatures were a challenge while working with the scale model, and the first ice-layers took some time to freeze.

In this particular case, part of the Design Implementation phase was also making an application in order to get in the competition. For the application, textual descriptions as well as both technical drawings (cross-section images, dimensional drawings, electronics plans, etc.) and conceptual images of our construction were needed.

The fourth, and last, phase covered the realisation of the design in the pre-defined place. The construction process is organised by drawing the execution timeline, obtaining required permissions from officials and other necessary parties, signing contracts with the contractors and other service providers and sourcing electricity and water suppliers. Renting equipment including lighting gear, electrical cabling and signage

has to also be taken into consideration. Largely depending on the scale of the project, well-functioning logistics can play an important role on the successful execution of the construction phase. Snow moulds and possibly even pre-fabricated snow elements and harvested ice need to be transported to the location at a specified time. There is also the need to obtain certain basic equipment such as heavy machinery and scaffolding for successfully running the building site.

Assembling cables, wiring and other electrical appliances, installing lights and audio-visual equipment, directing traffic in urban areas and possible setting up the warning signs are also part of the Realisation phase. In addition, the security and surveillance can be a major issue during and after construction, depending on the location of the construction site. The requests of possible event organisers have to be taken into consideration, and enough time has to be allocated for rehearsals.

A typical snow and ice environment project ends in dismantling the structure after the event has finished or the structure is not needed anymore. Obviously, this is the case latest at the springtime, when snow starts to melt and the design starts to lose its pleasing appearance. Great care has to be taken while cleaning-up the environments. For instance, in the urban area, there can be little space for manoeuvring heavy machinery and the snow has to be transported away to the outskirts of the city. Depending on the scale and nature of the project, different approaches to the disassembly may be required. The main concern must always be the safety of the unused structures. If the structures are safe and the location allows, it is also possible to leave the destruction for nature. Sun and a breezy wind will melt the structures quickly.

The Tupa Concept

The Overall Idea

The *Tupa* concept consisted of two igloo-like dome constructions joined together. Our construction consists of two intersecting domes, which both get their form from the geometric catenary curves. When inside the dome, the visitor experience was sought to be cosy and calming. This was reflected also in choosing the name "*Tupa*", which is a Finnish word for a hut or cottage. The word is also often used for wilderness cottages, located alongside hiking routes, in which you can sleep free of charge. We also wanted to bring elements both from Finnish and Chinese culture into our concept, and developed the different parts of our design with this target in mind.

Figure 2. Ice construction for *Tupa* doorway. Photo: Manne Martikainen, 2019.

For the outside, we were inspired by the traditional igloo design, the use of catenary curves in architecture, and ice & snow construction techniques used earlier in Lapland projects. As the construction method, we used an air-filled mould and a three-layered wall structure. The three layers in this structure were ice as a structural support, slush as a bonding, and snow as an insulating layer. The air-tight mould was filled with air, and the innermost ice layer was formed by slowly spraying water over the mould. When the ice layer was approximately five (5) centimetres thick, artificially made snow was blown simultaneously with water on the surface to form the slush layer. When the slush layer was about ten (10) centimetres thick, the water spraying was stopped. Snow was blown on the surface until the layer was 30-50 centimetres thick. For more details and an in-depth description of the method, see the book by Kai Ryynänen (2011).

The doorway was carved through the wall of the smaller dome, which functioned as a hallway. To more clearly separate the two spaces, we designed a curtain which was then attached between the domes. Fabric for the curtain was later purchased in China, from a local tailor's shop. An aesthetic door frame outside of the dome was created from ice, see Figure 2.

Inside the Dome

The interior design of the dome was inspired by the (so-called) four elements of nature, known e.g. from ancient Greek philosophy: earth, water, air, and fire. With this theme, the soundscape and a light-shadow installation were created and displayed inside the dome. In the initial plan, we considered including multiple different interactive elements to control the lighting and soundscape, e.g. ice-blocks as capacitive switches and PIR sensors to detect visitors coming in. The plan was to create a user experience with a surprise element when walking in, and have the lights and sound to fade on. Cycling through the different atmospheres (i.e., the four elements) would have been done by physically touching different ice sculptures or sitting in different places. However, as the overall concept evolved and some technology issues occurred, we decided to switch from using interactive technology solutions to a looping light and sound scheme. Lights were programmed to change the colour and blink, dim, and brighten according to which element they were representing. For example, the light scheme for fire was orange and red, moving in a flame-like pattern. At the same time, ambient campfire sounds were played on the background. Combining a multimedia installation with the snow and ice construction is a good example showcasing how tradition and innovation meet in the concept.

The Harbin Competition

The *2019 Harbin Institute of Technology (HIT) International Ice and Snow Innovative Design and Construction Competition* was co-organised by the School of Architecture of HIT, UArctic-HIT Training Centre, Polar Architecture Research Center; and co-sponsored by HIT and the Working Group 21 of the International Association of Shells and Spatial Structures (IASS Working Group 21). The aim of the competition was to stimulate academic research and to strengthen cultural exchanges and promote academic cooperation in snow and ice architecture by inviting outstanding talents and professionals in relevant fields to realise a small-sized dwelling.

The competition comprised of five phases starting from registration which started on August 30th, 2019. The second phase was conceiving the scheme design. Here, the contestants were given one month to come up with one or multiple design proposals including overview of conceptual ideas, drawing of plans, elevations and sections, digital model, structural analysis, construction scheme and overall design description.

The theme of the competitions was *Polar Dwelling – Design and Construction Competition of Contemporary Arctic Igloos*. There were three key aspects that needed to be taken into account; environmental impact, cultural heritage and technological innovation. In addition, the design principles were as follows:

- Respecting the construction history of polar ice and snow architecture;
- Expanding the technological innovation of ice and snow architecture;
- Adapting the special polar climatic environment;
- Giving functions to ice and snow architecture;
- Applying efficient construction methods

Specifically, with regards to the architectural form, the design work required novelty, unique beauty, embodying the charm of ice and snow architecture, reflecting the current trend of the times and adapting to the theme of polar environment. In terms of space functionality, the design work was expected to have a usable space inside for interaction, for example, entering for a visit experience, as well as certain indoor living conditions. Attention was sought to the integrity of architecture and structure, the rational expression of architectural image, and the safety and rationality of the structure during the design process. There were no specific restrictions on construction methods, but the design work was supposed to be built by using ice, snow and ice/snow-based composites.

In the third phase, the organisers released the result of the selected work. From a total of 43 submissions, seven contestant teams from different countries and regions were chosen to participate in the field construction in which the design work could be realised. The seven teams were teachers and students from seven universities, i.e., the University of Lapland, Cambridge University, Kent State University, Xi'an Jiaotong University, Shandong University of Architecture, HIT, and a joint team of Eindhoven University of Technology and Leuven University. Each team consisted of 5-10 students and 1-2 instructors. In this phase, two months were given to each chosen contestant team to deepen technology and prepare construction.

The next phase was the actual construction, which was held from December 16th to 21st, 2019 on the campus stadium of the HIT in Harbin, China. This was part of one of the centennial celebration activities of HIT. The construction site was located on the campus of HIT. The size of each team's construction site was 12m×12m. Each team was given one week to build their work. To promote sustainable construction, each team was funded 7200 dollars as the maximum cost. During the construction, the team of University of Lapland divided the work and responsibilities among the team, based on each

Figure 3. The team of the University of Lapland working collaboratively on building the Tupa Dome at -25 Celsius degrees. Photo: Ella Kärkkäinen, 2019.

team member's existing skills and expertise. The team was made up of seven individuals, namely, two instructors who supervised and participated in the construction process; one coordinator who coordinated the schedule, resources, equipment, information and local liaison; two students who were predominantly in charge of the construction; and another two students who mainly took care of the interior design of the *Tupa Dome*. The team members collaborated with one another by taking turns to help the construction and offering assistance where needed, see Figure 3.

The final phase was the achievement exhibition, where the competition was concluded. After a week's efforts, the seven teams introduced their work to the organising committee which consisted of a group of experts, scholars, and designers in the field of ice and snow to review the seven works. Eindhoven University of Technology and Leuven University team gained the special prize with a 40-meter-tall ice tower using fibre-reinforced ice, the Harbin Institute of Technology team and Kent State University team won the first prizes, the University of Lapland team and Xi'an Jiaotong University team achieved the second prizes, and the Shandong Jianzhu University team and University of Cambridge team obtained the third prizes.

Discussion

The project provided many lessons for all those involved. The equipment and needed parts caused many difficulties, which could have been avoided with better preparations. Having brought the water-nozzle from Finland (or ordering a specific one) would have helped to get a finer mist and get a stronger ice-layer without cracks faster. Also, the placement of our main power source at the competition site turned out to be problematic, moving it to a better place in the beginning and casing it well should have been considered already when starting the work. Moreover, it is important that all electronics are tested with the actual components, lights, etc., beforehand. Backup parts help, if something gets broken, and should be available at hand. Programming and soldering on site is often very demanding. We have also noticed that including a team member who speaks the local language is extremely helpful for different kinds of practicalities, questions, and issues that can occur at short notice.

The Harbin project, together with the snow and ice construction project in Sapporo, Japan, the year before, acted as a new type of coursework that took the snow and ice design outside of the comfortable context of home ground. These pilot courses offered vital experience of the factors affecting planning and execution of future courses. The often surprising realities of working in a different cultural context and with different practical issues to face cannot really be foreseen without hands-on experience of organising a course this scale and form. These experiences will be used to continue such ventures outside Lapland and apply our Arctic designers' skill-set in an out of the ordinary setting. Through the Harbin competition, we also gained a deeper understanding of polar culture, regional materials, and work techniques, which we believe can pave the way to new innovations and possibilities that will contribute to sustainable developments.

Taking part on an international design competition as a course work is a huge motivational factor to push towards a solid goal and to put the best effort in the work. The competition sets high quality standards for the output, and each step of the design process has to be completed with ambition. The competition schedule also sets requirements for the process, and the keep the deadlines for submission and final construction, as well as for all the practicalities, require discipline and effort. In addition to these, also practical challenges take place. Especially with international competitions and exhibitions, organizing the travel, visas, and funding for the project take time and effort. Participating an international design competition requires also ability to take pressure and to work against hard deadlines. Altogether, the experience can be quite tough, and

the participating students have to learn many new skills both in design, project management, and team work. According to our experiences however, in the end, the hard work pays off.

Conclusion

In this paper, we have presented the *Tupa* snow dome construction design and construction for the student competition organized in Harbin, China, in December 2019. The team of students from University of Lapland, Finland, with their supervising teacher Antti-Jussi Yliharju, participated and won the second price in the internationally high-quality competition. We have described the educational setting of the project course, which included different student group work projects with various aspects on Arctic Art and Design, and conclude that participating to an international design competition is challenging and requires hard work, but is also rewarding as a learning experience.

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References

Colley, A., Yliharju, A.-J., & Häkkilä, J. (2018). Ice as an interactive visualization material: A design space. In *Proceedings of the 7th ACM International Symposium on Pervasive Displays* (pp. 1–6). ACM.

Design and construction guidelines for snow structures. (2001). RIL Finnish Association of Civil Engineers RIL 218–2001.

Häkkilä, J., He, Y., & Colley, A. (2015). Experiencing the elements{user study with natural material probes. In *IFIP Conference on Human-Computer Interaction* (pp. 324–331). Springer.

Häkkilä, J., & Johansson, M. (2018). Arctic design for a sustainable, technological future. In T. Jokela & G. Coutts (Eds.), *Relate North: Art and design education for sustainability* (pp. 32–51). Lapland University Press.

Härkönen, E., Jokela, T., & Yliharju, A. J. (2014). *Snow design from Lapland: initiating cooperation.* Lapland University Press.

Jokela, T., & Coutts, G. (2018). The North and the Arctic: a laboratory of art and design education for sustainability. In T. Jokela & G. Coutts (Eds.), *Relate North: Art and design education for sustainability* (pp. 98–117). Lapland University Press.

Jung, H., & Stolterman, E. (2010). Material probe: exploring materiality of digital artifacts. In *Proceedings of the fifth international conference on Tangible, embedded, and embodied interaction* (pp. 153–156). ACM.

Miettinen, S., Erkkilä-Hill, J., Koistinen, S.-M., Jokela,T., & Hiltunen, M. (2019). Stories of design, snow, and silence: creative tourism landscape in Lapland. In N. Duxbury & G. Richards (Eds.), *A research agenda for creative tourism*. Edward Elgar Publishing.

Roinesalo, P., Virtanen, L., Lappalainen, T., Kylmänen, A., & Häkkilä J. (2016). Solar shirt: design of an environmental awareness wearable. In *Proceedings of the 2016 ACM International Joint Conference on Pervasive and Ubiquitous Computing: Adjunct* (pp. 495–499). ACM.

Ryynänen, K. (2011). *Lumi-ja jäärakentamisen ohjekirja. Vinkkejä viranomaisille, ohjeita rakentajille* [*Snow and ice construction manual. Tips for authorities, instructions for builders]* Rovaniemen ammattikorkeakoulun julkaisuja C, 27. Rovaniemen ammattikorkeakoulu.

Shaer, O., & Hornecker, E. (2010). *Tangible user interfaces: past, present, and future directions*. Now Publishers Inc.

Tahkokallio, P. (2012). *Arctic design: Opening the discussion*. University of Lapland.

Ventä-Olkkonen, L., Åkerman, P., Puikkonen, A., Colley, A., & Häkkilä J. (2014). Touching the ice: in-the-wild study of an interactive icewall. In *Proceedings of the 26th Australian Computer-Human Interaction Conference on Designing Futures: the Future of Design* (pp. 129 – 132). ACM.

Virolainen, A., Puikkonen, A., Kärkkäinen, T., & Häkkilä, J. (2010). Cool interaction with calm technologies: experimenting with ice as a multitouch surface. In *ACM International Conference on Interactive Tabletops and Surfaces* (pp. 15–18). New York: ACM.

Wiberg, M. (2018). *The materiality of interaction: Notes on the materials of interaction design*. Cambridge: MIT press.

Yliharju, A.-J., Mori, T., & Häkkilä, J. (2018). Snow wall as an interactive display in urban environment. In *Proceedings of the 7th ACM International Symposium on Pervasive Displays* (pp. 1–2). ACM.

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Arctic and Traditional Textile Techniques as Inspiration for Electronic Textiles

In this chapter, we describe the selected artworks from our experience of teaching an electronic textile, or e-textile, course with the Arctic theme at the University of Lapland for the past five years. In each year of the course, the Arctic theme was emphasized in the project descriptions, for example, the use of local materials and/or Arctic nature as a source of inspiration. E-textiles are technological solutions blended with textile materials to design daily products such as interior elements, clothing, and accessories (Berzowska, 2005). They compete for the same spaces on our bodies and in our environment with existing products such as pillows, watches, glasses, bags, and shirts (Juhlin, 2015). A meaningful merger between technology and textile materials requires attention to both practical and aesthetical attributes of the design product. However, the field has developed rapidly on the technological front (Buechley et al., 2013). This situation leads the outcomes more towards practical functionalities (Tomico et al., 2017).

To overcome this, preparing designers in guiding the e-textile development processes is essential (Coleman, et al., 2011). Considering the intersection of design and technology could create more job opportunities for designers, in design faculties, educators have the challenging task of preparing students for this relatively new area. In order to cope with this, we suggest how the textile techniques and Arctic theme can provide inspirations for future designers to explore the aesthetic and social dimensions of e-textile products.

In this chapter and the course, the term ´Arctic´ is interpreted broadly. Arctic nature includes changing seasons and circumstances where nature´s colours, shapes, and patterns vary a lot. Living in the north develops people´s resourcefulness and resilience. People sometimes live on the periphery, which means sparsely populated areas and occasionally low access to public services and other resources (Miettinen, Laivamaa & Alhonsuo, 2020). The artworks from the course have been inspired by this Arctic nature and culture by imitating visuals, sounds and by highlighting cultural factors and sustainability from Arctic lifestyles. While the inspirations from the Arctic theme provided the students with broad directions for aesthetic explorations, traditional textile techniques

such as embroidery, lace, and rug making, together with interactive materials such as conductive threads, inspired students to implement novel use-cases and interactivity bits. The e-textile artworks from the course have been presented in the exhibitions in the university, in the course's Instagram account and even in international design events (Harjuniemi, Johansson & Pyrstöjärvi, 2019; Häkkilä & Johansson, 2018).

This chapter elaborates on how the future professionals of electronic textiles are capable of skilfully combining design and technology for aesthetic explorations starting from the Arctic as inspiration. In addition, we uncover how versatile methods and materials bring traditional techniques to the present day with technology integrations. In the following sections, we first discuss the design approaches to E-textiles, the role of inspiration in design, and introduce different dimensions of Arctic theme and traditional textile techniques that can inspire aesthetic explorations for e-textile products. We then present our course structure and how the inspirations are reflected in the E-textile course by describing selected artworks from the course in detail.

Towards Electronic Textiles

We are living in an age where more and more electronic technology is seamlessly integrated into our daily lives. Thanks to small and affordable electronic modules embedded in most of our everyday products are not just passive artefacts, but they are 'smarter' by detecting and reacting to us and environmental factors. Homes becoming capable of sensing our energy consumption, smartwatches not just showing the time but also enabling us to communicate with other people and cars being aware of the physical environment to drive themselves are just a few examples of those new experiences. In this new infrastructure, the term 'electronic textiles' is used to refer to a specific field where design professions that use textiles as design material (textile, fashion, interior, interaction, and product design) and engineering disciplines coincide with each other. The artefacts created combine textile and electronic materials to design interactive interior elements, garments, and accessories (Berzowska, 2005). The term *smart textile* is sometimes used as a synonym of e-textile. However, smart textiles can be seen as more of an overarching category. It refers to a novel category of textiles including, e-textiles, bio-textiles, shape memory textiles, cosmeto-textiles, high-performance textiles, photoluminescent and thermochromic materials. These textiles and materials have intelligent functions, but not necessarily embedded electronics (Wu & Li, 2019). However, those can react to external stimuli, e.g., mechanical, electrical, thermal, or chemical (Kettley, 2016).

While the e-textiles field recently became more accessible to designers, the idea is not new. The first speculations on making fabrics interactive were apparent in the late 1960s. In 1968, a group of artists exhibited smart garments with electronic heating systems integrated into jackets for body temperature control and with lights for cycling safety (American Crafts Council, 1968). Other early examples within the field were presented on the *Smart Clothes Fashion Show* at the first symposium on Wearable Computers (Rhodes, 1994). By collaborating with engineers from Massachusetts Institute of Technology (MIT), the designers of this show implemented proofs-of-concept for functional fashion pieces, for example, shirts with intercom units and hats that can charge a cell phone with solar power. However, the majority of early e-textile applications were focused on the practical functionalities, often neglecting the aesthetic aspects. This is also visible in the early conceptualization of technology design, where the design process is seen as a rational process that focuses on solving problems to optimize the efficiency of people beyond workplaces (Dunne, 2008).

More recently, as technology has become more accessible to everyone with easy-to-use prototyping tools (Buechley & Hill, 2010), designers have better opportunities to achieve novel applications around aesthetical issues (Ryan, 2009). With these toolkits and also conductive textile materials appearing in the field, designers started exploring social and cultural aspects of e-textiles for example, in augmentation of self-expression via kinetic textiles extending the body movements (Hartman et al., 2015), or in shirts revealing common interests among individuals as icebreakers (Kan et al. , 2015). Besides, the computable and interactive nature of e-textiles opened up new design spaces for sensory expressions such as designing with dynamic textile patterns (Nilsson, et al., 2011) or investigating audio generation via textiles during art performances (Skach et al., 2018).

The e-textile field also provokes much attention in Finnish industries. One of the promising Finnish e-textile start-up companies was *LeeLuu* Labs that developed soft nightlights for children inspired by animals. The interdisciplinary team included textile and industrial design experts and marketing specialists (Espoo Innovation Garden, 2020). *Clothing+* is a company that started as a result of a co-operation research project between the University of Lapland, the University of Tampere, and *Reima Oy*. It was a pioneer in body monitoring technologies, combined electronics and textiles innovatively, and successfully developed heart-rate-sensing shirts and other textiles for the sports and healthcare industry (Keskitalo, 2020). The company's earlier sales and marketing manager is a graduate of the Faculty of Art and Design, University of Lapland. As technology evolves, the textile industry should evolve as well. Internationally, there are a growing number of

examples as the big technology companies such as Google are investing large amounts of product development of wearable technologies and e-textiles (Tahvanainen & Pajarinen, 2014). The local and global industry attention towards e-textiles also points to the need for new design approaches and the importance of educating future design practitioners.

The artworks presented in this chapter exemplify the new design spaces and examinations around social issues. More importantly, they contribute to discussions around sources of inspiration in designing future e-textiles by highlighting the influence of Arctic and traditional textile techniques. In the next section, we elaborate on the role of inspiration in design processes.

Inspiration in Design

Inspiration is a tool in the creative process, leading the way from the world of imagination to the world of objects. It is a creative force which drives and motivates the designer to produce the best feasible result (Aspelund, 2015). Inspiration should be visible in the final product (Strickfaden, Stafiniak & Terzin, 2015), as the word itself is derived from the Latin verb *´inspirare´* meaning *to breathe into*. It can come from a broad range of sources, from comparable products to an object or a phenomenon from nature and daily lives (Aspelund, 2015; Eckert & Stacey, 2000). Inspiration should be actively sought, not awaited and it is not just limited to the beginning of the process. Being re-inspired throughout the creative process is important. But, the activity, in this case, can be just standing still and observing the immediate surroundings or reflective dialogue with the design outcomes. Since seeking inspiration is an active process, sociocultural factors such as traditional crafts, personal ideologies, and skillsets also have strong influences on inspirations (Strickfaden & Heylighen, 2010). Taking these factors into consideration, we use the term inspiration in a broader sense that it is not just visual sources that guide the design processes, but also the inherited knowledge and values coming from the experiences of the designers.

When it comes to creative studies in educational settings, students need guidance for their projects on, for example, where they should start and the needs of the project. They are advised to go to different places and seek inspirational designs or just stop in their everyday environments and survey. In the E-textiles course, students are guided to seek inspiration for their work from the Arctic, their knowledge of textile techniques, and what technology could enable. These combinations of inspirational sources have resulted in many interesting contrasts.

The Arctic as an Inspiration for Design

According to Jokela and Tahkokallio, *"Arctic Design should be understood as actions aimed at increasing well-being and competitiveness in the northern and Arctic areas. The Arctic design combines art, science, and design for solving the particular problems of remote places and sparsely populated areas"* (Jokela & Tahkokallio, 2015, pp. 120–121). In this regard, whilst the Arctic Design usually follows a generic design process (Ulrich & Eppinger, 2016), it might be differentiated from other design approaches in a sense that it is strongly tied to specific challenges and influences that the Arctic geography proposes (Miettinen, et al., 2014).

The Arctic is a region spread around the North Pole, but it has no unambiguous definition of a border as the southern boundary varies (Arctic Centre, 2020). Living in the Arctic means sometimes living in the periphery, extreme climate conditions and surrounded by natural phenomena, for example, the northern lights and midnight sun. The spaciousness of the wilderness forces individuals to focus on what is essential (Seppälä, 2012). Furthermore, the inhabitants of the Arctic region might be considered as being inherently connected to nature and the materials used to survive are mostly found nearby and from sustainable sources (i.e. reindeer leather, wood). In this sense, arctic nature is a substantial part of the cultural heritage. It influences the artefacts used in this region in terms of materials, forms, colours, and changing of the seasons.

Arctic Design takes the unique geographical context and culture of the Arctic into consideration. The diversity of nature and cultural heritage in Finnish Lapland reflects the design language of products (Ikäheimo, 2012). One example, also mentioned by Häkkilä et al., (2018), could be Tapio Wirkkala´s glassware, *Ultima Thule.* This project demonstrates how an inspiration could come from Arctic nature, more specifically melting ice. Northern nature is also a recognizable source of inspiration in the Finnish textile industry with nature-inspired printed and weaved patterns (Marimekko, 2020; Lapuan Kankurit, 2020). On the other hand, design in the Arctic takes inspiration from the Arctic cultural emphasis on using the local resources, materials, and people (Miettinen et al., 2020). In that direction, for instance, Usenyuk-Kravchuk, et. al., (2020) provided a detailed overview of how indigenous cloth-making processes in the Arctic region could provide insights to Arctic Design. Furthermore, Artic Design could be considered different from other design approaches as it also focuses on solving problems in the northern and cold areas with extreme conditions such as dark seasons or persistent ice on the ground (Häkkilä et al., 2018). These circumstances help designers to gain expertise which is built on exciting strengths of the region. The

academic discussion about Arctic Design started almost a decade ago (Tahkokallio, 2012) and the University of Lapland has a vital role in taking it forward as the Arctic and northern culture are at the core of the university´s research profile (University of Lapland, 2020). The Faculty of Art and Design has explored the traditional and contemporary applications in art and design projects and combined future visions under the theme of Arctic Design through context, materials, messages, and other aspects. Häkkilä and Johansson (2018) have showcased with the interactive fair stand examples of how Arctic Design meets technology and how Arctic Design could be a speciality and unique field of expertise.

Arctic design also attracts international interest as it is associated with global megatrends. Typically, at its core, Arctic design is based on simple, calm, and minimalist expressions which are also reflected in Scandinavian form and function principles (Seipell, 2012). This principle is often perceived as useful and globally popular to give a respite for people in a digital and busy environment. However, the way people are experiencing the Arctic is culturally related. As Jokela points out, people are affected by surroundings, and understanding of it is conducted by culture conditions (Jokela, 2012). Therefore, in order to be inspired by Arctic culture for design, it is important to experience it.

Traditional Textile Techniques as an Inspiration for E-Textile Design

Some examples of traditional textile craft techniques are weaving, knitting, needlework, and printing. Those techniques are taught in the Finnish comprehensive schools and learning those constitutes learning about Finnish traditions and cultural narratives (Garber, 2002). For generations, traditional textile craft communities have integrated their cultural narratives within their fabric and made functional textiles that are coded with meaning and purpose. Traditional textile craft processes are slow and long, and craftspeople worked long periods in their workshops. Repetition of patterns and rhythms are created in the making processes while craftsmen acquire knowledge about the materials and possibilities (Tharakan, 2011). On one hand, inspiration for craftspeople can be started by experimenting with traditional textile techniques and adapting the technique to concretize another inspiration point, for example, imitating clouds with embroidery.

On the other hand, textile design is a specific profession that creates patterns, motifs, or surfaces intended for knitted, woven, or printed fabrics. In textile design processes, the suitability of techniques, such as printing, knitting, weaving, embossing, and

embroidery, to the process defines the success of the outcome (Granger, 2015). In this regard, depending on the specific field, textile designers need to deepen their expertise on special technical knowledge, equipment, and materials. For example, a designer who specializes in printing on textile should know that the printed textiles are concentrated to fabric's surface, whereas a designer, working with fabrics, should acknowledge that woven, knitted, or constructed fabrics are created from the scratch and the process begins by selecting fibres and yarns. Also, working with mixed media needs knowledge about utilizing other techniques applied together with either print, weave, or knitting to create fabric. In addition to specific techniques and knowledge, the designs should be suitable for a given purpose such as for the body, product, or space. Current trends, colour awareness, and contemporary design issues are also themes that a designer needs to understand in order to create modern and suitable designs for end purposes. As highlighted above, the textile designers need to consider various parameters in the design process. However, it is common for all specialised fields to start design processes by collecting inspirational materials by gathering, recording, and analysing information. As an example, when designing textile prints, the focus of observation could be on surfaces, images, patterns and colours, or when designing constructed textiles structures, colours and patterns can be inspiring (Steed & Stevenson, 2012).

Designing electronic textiles can be considered as adding technology into the design and crafting processes of textile materials. Inspirations coming from both textile design and crafts are fruitful to explore in e-textiles. The integration of electronics and textiles has an interesting history as conductive materials, for example, metal threads and precious metals, have been used throughout the ages in the clothing and interior elements, like royal costumes, armour and wall textiles. Digital technology and textiles have also an intertwining history as the first computer was inspired by the Jacquard loom (Buechley et al., 2013). These historical connections between E-textiles and textile design practice highlight the importance of having knowledge in textiles when designing and building e-textiles.

In the contemporary view of E-textile design, a typical implementation process includes five stages (Lovell & Buechley, 2010; Hamdan, Voelker & Borchers, 2018): (1) Designing or choosing an artwork, (2) planning the layout of electrical components and traces, (3) creating the artwork and fabric circuit on the base fabric, (4) insulating circuit traces where necessary, and (5) attaching electronic components. Among these steps, especially exploring the attachment of electronic components on fabrics with traditional techniques is often highlighted as a fruitful strategy that yields novel use-cases and ap-

plications (Genç et al., 2018). In this regard, just to name a few innovative approaches, electronic circuits can be printed straight to the fabric (Roinesalo, et al.; Khan et al., 2019). Fibre optic threads, which can transfer light efficiently. can be woven into the traditional tartan weave and illuminate a pattern on fabrics (Bigger & Fraguada, 2016). Similar illuminating fabrics can be created also by knitting optical fibres into the textiles structure (Chen, 2020). Embroidery machines could be used when created patterns and soft circuits (Hamdan et al., 2018). Furthermore, there are new techniques for fabricating textile materials e.g. 3D printed fabrics offered (Takahashi & Kim, 2019). Finally, combining textile and conductive materials gives designers the opportunity to implement fabric sensors and switches (Kobakant, 2020). All in all, these examples demonstrate the novelties that can be achieved by incorporating the textile knowledge into E-textile design processes.

To support young designers in their material explorations, the universities, where e-textiles are taught (the Eindhoven University of Technology, and the Swedish School of Textiles), often include workshop facilities where students experiment with digital printing facilities, weaving machines and the Jacquard loom, knitting, embroidery and sewing machines and 3D printers (Coleman et al., 2011). In our work, in addition to providing workshop facilities, we include workshop sessions, in which the students explore their knowledge on traditional textile techniques with the digital materials, under the guidance of e-textile experts.

The E-textile Course at the University of Lapland

In the following sections, we present an overview of the E-textiles course and describe the selected artworks. The e-textiles course has been taught at the University of Lapland for the past five years. The course was given by two experts: Emmi Harjuniemi, who is a teacher in design technology and has her background in clothing design and Piia Pyrstöjärvi, who is a lecturer of interior and textile design. Also, postdoctoral researcher Pradthana Jarusriboonchai gave guidance for students in programming and building electronics. The interdisciplinary team of teachers and co-teaching have provided different viewpoints and a productive learning environment for the students and peer-learning situation for the teachers (Harjuniemi, Johansson & Pyrstöjärvi, 2019), and it has adapted to the situation in working life, working in multidisciplinary teams.

Participants of the E-textiles course have mainly been master students of interior and textile design, but also a growing amount of industrial design and clothing design stu-

dents have attended to the course after it was included in the *Creative Technologies* minor studies in the Faculty of Art and Design. The aim of the course is to teach the basics of building electronics and programming so that students can build working interactive prototypes from their designs. They are integrating arts, design, and technology and the course is giving them good starting points working and communicating later with programmers and electronic developers. As pointed out earlier, working in interdisciplinary teams is necessary when developing e-textile products. The fields differ in terminology, goals and product development processes. Working in the cross-section of design and technology offers possibilities and challenges to both students and teachers.

The outcomes from the E-textiles course were exhibited in a joint exhibition in the *Arctic Design Week*. The exhibition was arranged together with the course of Product Design for Tangible Interaction. This course was taught Harjuniemi and Milla Johansson, who is an industrial design teacher. The *Arctic Design Week* event takes yearly place in Rovaniemi and gathers people internationally to discuss Arctic issues through exhibitions, seminars, workshops, and participatory events (Jokela & Tahkokallio, 2015). The exhibitions have gained the attention of a vast amount of people who came to experience the interactive textiles. Observations and discussions with visitors gave us feedback about the artworks.

The Course Structure and the Design Process

Each year, the course includes a design task to be accomplished during the semester. The lectures are spread across the semester to support their design process, which includes background research, an ideation phase, technology workshops, generating a conceptual design and implementation of an interactive prototype. The first lecture starts with an introduction to the e-textiles. Previous years´ artworks are reviewed and discussed together. The task of the course is also introduced at the start of the class so students can start the design process. In the technology workshops, students have been introduced to the technology and new materials such as conductive yarns and fabrics. They learn to program, sew soft circuits and use conductive materials in different ways, including making touch sensors and switches with the conductive materials and integrating those to the microcontrollers. A visual example of the design process in technology workshops can be seen in Figure 1.

In the semester of the presented artworks, the programming has been replaced with the possibility to use non-programmable microcontrollers which have e.g. built-in LEDs and touch sensor capabilities (Figure 2). This change was due to our intention of giv-

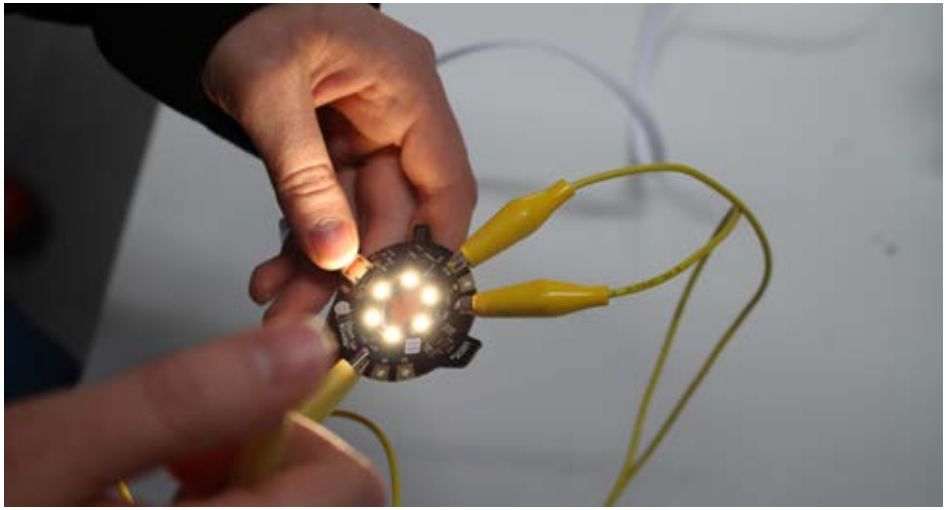

Figure 1. The design evolution of the Secret Message in the technology workshop. (Left) Experimenting the stone form factor with light, (Middle) Embroidering with conductive threads as an input technique, (Right) First prototype. Photos: 1 and 2 Eveliina Muotkavaara, 2018, last 3rd Emmi Harjuniemi, 2018.

Figure 2. Light-up board. Photo: Emmi Harjuniemi, 2018.

ing more time for students to concentrate on their design. Hands-on experiences with the non-programmable boards also enabled students to test their first ideas. Both of the three-and-a-half-hour-long technology workshops included writing short descriptions of the artworks and a prototyping plan. Students had multiple non-programmable boards, electronic tools and materials; plastic sheet, felt, fur, fabrics and conductive materials including fabrics and threads, ink, copper tape and tin foil to build their first inter-

active prototypes. The rest of the semester, they had time to improve the design and were able to use the technology they wanted and any materials they bought by themselves.

The E-textile course has a different theme each year, but it always relates to the Artic in a wide sense. In the 2019 course, the theme was *Creating happiness with e-textiles in the Arctic context*. Upon the introduction of the theme, seeking inspiration from Artic started by getting to know the literature of Artic Design. The students at the Faculty of Art and Design of the University of Lapland are already familiar with Artic Design at some level since the theme has also been addressed in their previous studies.

Despite the students' familiarity with the Arctic, most of them were not knowledgeable about the integration between technology and textiles. However, as they became more familiar with the interactive capabilities of electronic materials through workshops, the students sought inspiration from traditional textile techniques. They experimented with how to incorporate conductive threads and fabrics in techniques like embroidery, lace making and weaving for creating interactive experiences.

In the following section, we present three artworks created under the theme of *Creating happiness with e-textiles in the Arctic context*. These examples are selected as they successfully represent traces of Arctic inspirations and embody traditional textile techniques in e-textiles.

Selected Artworks

Secret Message is an artwork consist of two message-sending-stones. It was inspired by common beliefs that stones have healing energies and soothing one´s longing for a remote partner. The designed shape of the stones and imitation of moss structures were inspired by Arctic nature. It is designed for people, who are far away from their loved ones. The idea is that couples could carry these stones with them and, by using the stones, they can send a message to each other for feeling a little closer. The hand-embroidered details on the stones are partly made of conductive thread, which creates a touch input surface, as well as providing an interactive embellishment on the textile surface (Figure 3). When a remote partner touches one stone, the other stone shows the message 'hello lovely' or 'you are precious' depending which stone the message receiver has. The purpose is to create an emotional connection between people who are apart. The prototype is created with two Bare Conductive´s Light Up Boards, which are microcontrollers with a built-in touch sensor and six LEDs in each (Bare Conductive, 2020a). The artwork creates an interesting contradiction between technology, soft materials and nature, as inspiration was hard, cold stones.

Figure 3. *Secret Message* by Eveliina Muotkavaara, 2019. Photo: Eveliina Muotkavaara, 2019.

Figure 4. *Dead Pine Tree* by Kati Walkeajärvi, 2019. Photo: Emmi Harjuniemi, 2019.

Kelo (Dead Standing Pine) is an interactive wall installation that brings the Arctic nature experience indoors. The idea of this interactive wall installation is based on studies about relaxing sound environments and restorative effects of nature. It was inspired by the traditional lace-making and the Artic soundscapes. The design aimed for public places like hospitals or companies where one can be surrounded by nature sounds to disconnect oneself from the busy day. The multisensory experience is created with the sounds of forest such as the wind blowing in the trees in addition to authentic wood and woollen lace embellishments on it. The lace is made of natural material wool and conductive thread (Figure 4). Conductive thread parts are touch sensitive. These parts are connected to the Bare Conductive´s Touch Board microcontroller that has a build-in touch sensor and an MP3 player (Bare Conductive, 2020b). Different sounds are replayed from the speakers depending on what point is touched.

Figure 5. *Come Well* by Piritta Mettovaara, 2019. Photo: Emmi Harjuniemi, 2019.

Figure 6. *Flying Carpet* by Piritta Mettovaara, 2020. Photo: Emmi Harjuniemi, 2020.

Come Well is an interactive wall textile that welcomes the users back home. It is intended to be placed in a hallway. *Come Well* also has glow-in-the-dark details that remind the enterer of its whereabouts. One can touch the surface created with different textiles, leather and fur materials and hear the greetings from family members. Suddenly the home doesn´t feel so empty anymore. In this regard, this e-textile leaves the possibility for personalization as the sounds could also be recorded and downloaded, for example, family members or relatives. It is intertwining with the culture. The designer also speculated that alternative audio reactions, such as nature sounds or favourite music, could be implemented. The prototype includes Bare Conductive´s Touch Board and speaker. The details enabling touch sensing details are embedded in the rug as conductive fabrics and threads (Figure 5).

The idea of a communicative wall textile is adaptable for different contexts and usage. The process of development continued with another interactive wall textile, called *Flying*

Carpet (Figure 6). The student utilized her knowledge in e-textiles in her master thesis in which she studied traditional weaving techniques of the White Karelian. She made a research trip to the area and recorded voices from her journey. The final woven textile was inspired by traditional weaving techniques and conductive threads were embedded in the woven patterns. These touch sensing details play the recorded soundscapes when touched. The created e-textile is a physical artefact as an embodiment of memories.

Discussion

The Arctic has an influence in design in terms of material use (Miettinen et al., 2020), the reflection of northern nature bits on designed artefact's forms (i.e., Häkkilä, 2018) and the particular problems related to Arctic geography that designs address (Jokela & Tahkokallio, 2015). More specifically, the Finnish textile industry explores the Arctic as an inspiration by, for example, embedding the arctic nature instances to traditionally woven patterns (Lapuan Kankurit, 2020) and printed fabrics (Marimekko, 2020). However, when Arctic inspiration and traditional textile techniques are blended with technology, new opportunities arrive for aesthetic explorations in the field of e-textiles.

The Arctic theme was expressed in the forms of the presented artefacts. It was observable that the students imitated the unique northern nature by using textiles and interactive materials. This merger not only inspired the designers to solely explore the physical forms from northern nature but also elevated the artefacts with Arctic-inspired interactivities. In this regard, while textile techniques and natural textile materials enabled the imitation of, for example, stones from Arctic nature, embroidering with conductive materials made the stones capable of connecting loved ones, who are temporarily separated in sparsely populated geographies (Figure 3). Or, in another example, the inspiration from nature came from the Arctic pine trees (Figure 4). In this example, lacemaking with conductive threads, together with integrated speakers, provided opportunities for representing the embodiments of memories and natural sounds indoors.

The impact of the new opportunities derived from Arctic inspiration is not only limited to geography-specific issues, but the outcomes refer to broader aesthetical and social aspects in e-textiles and/or technology design in general. For example, crafting soft materials of Arctic with technology highlights the potential of making them more comfortable for the user. Or bringing nature indoors with materials and soundscapes provides opportunities to enhance the wellbeing of people in the offices. Also, inter-

active and communicative elements create new values and deeper meanings as being a physical artefact as an embodiment of memories.

Although the Industrial Revolution removed a lot of textile industry from Finland to the East, as in many Western countries, we still have strong expertise in design. We believe that here in Finland there is potential to develop a textile industry towards electronic textiles. To support this, we have a responsibility to educate future e-textile designers to be prepared to explore products in an open-minded manner in the intersection of design and technology. They will contribute by adopting new materials and digital technologies to the next phase in the evolution of textiles and develop novel cultural narratives based on what they have learned from the traditional textile craft communities (Tharakan, 2011). In this direction, the examples presented here suggest using Arctic culture and traditional textile techniques as inspiration sources in user-centric design approaches is a fruitful way to create e-textiles that are meaningful and valuable. Also, the inspiration sources directed the students to use natural materials in combinations with electronic ones. Here, the life cycle of these products is also considered by enabling technological updates – as showcased in the later version of the *Come Well* project updated to embody different sounds for different cases. Another sustainable aspect of the approaches was combining the technology and conductive materials in a way that can be easily separated before recycling. The latter approach is used for recycling electronic materials from the prototypes built in the earlier E-textiles courses.

As highlighted before, the elaboration on the influence of the Arctic in design is an ongoing process. Within this process, our examples showcased the help of Arctic inspiration to the future electronic textile designers while they skilfully combine design and technology. The artworks also discovered how the integration of versatile techniques and technology through the Arctic mindset might bring traditional techniques to the present day. To further this dialogue, the e-textiles have been presented in the exhibitions in the university, in the course´s Instagram account and even in international design events (Harjuniemi et al., 2020, Häkkilä et al., 2018). That has led to national and international networking with the specialists and companies in the field, giving opportunities for discussion, research and co-operations. Local textile teachers from elementary schools visited the exhibition and were influenced by the artworks. They wanted to learn how to do electronic textiles and one of the authors gave them a course about the basics. Pictures and videos shared in social media were found by the Bare Conductive company, whose technology we used in the workshops. They were so impressed with our students´ explorations with their technology that they asked us to send materials. They

published those as a part of their marketing campaign on Instagram (Bare Conductive, 2019.) It contributed positively also to our other aim of the E-textile course which is to give students an empowering and inspiring start in designing and assembling e-textiles. The fact that some of the students, as Mettovaara, have continued to develop their idea after the course and created more advanced projects made us believe that, due to the experiences they had in the course, the future designers become more capable of adapting to evolving technology development and research conducted in Arctic region (i.e., VTT, 2020a, 2020b).

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References

American Crafts Council. Museum of Contemporary Crafts (1968). *Body covering* [Exhibition catalogue]. https://digital.craftcouncil.org/digital/collection/p15785coll6/id/1237/

Arctic Centre (2020). *Basic information about the Arctic*. https://www.arcticcentre.org/EN/arcticregion

Aspelund, K. (2015). *The Design Process.* http://dx.doi.org.ezproxy.ulapland.fi/10.5040/9781501309045.ch-001

Bare Conductive (2019, November 26). University Teacher and PhD student Emmi Harjuniemi & Postdoctoral Researcher Ting Pradthana Jarusriboonchai, ran a workshop as part of an e-textile course at the @universityoflapland. [Instagram post]. https://www.instagram.com/p/B5Va-2wyly4s/?utm_source=ig_web_copy_link

Bare Conductive (2020a). Light up board. https://www.bareconductive.com/shop/light-up-board/

Bare Conductive (2020b). Getting started with the touch board. https://www.bareconductive.com/make/introducing-the-touch-board/

Berzowska, J. (2005). Electronic textiles: Wearable computers, reactive fashion, and soft computation. *TEXTILE 3*(1), 58–74. doi: 10.2752/147597505778052639.

Bigger, E. E., & Luis E. F. (2016). Programmable plaid: the search for seamless integration in fashion and technology. In t*he 2016 ACM International Joint Conference on Pervasive and Ubiquitous Computing: Adjunct (UbiComp '16)* (pp. 464–469). Association for Computing Machinery.

Buechley, L., Peppler, K., Eisenberg, M., & Kafai, Y. (2013). Introduction. In L. Buechley, K. Peppler, M. Eisenberg & Y. Kafai (Eds.), *Textile messages – Dispatches from the world of E-textiles and education* (pp. 1–5). Peter Lang.

Buechley, L., & Hill, B. M. (2010, August). LilyPad in the wild: how hardware's long tail is supporting new engineering and design communities. In *Proceedings of the 8th ACM conference on designing interactive systems* (pp. 199–207). Association for Computing Machinery.

Chen, A. (2020). The design and creation of tactile knitted e-textiles for interactive applications. In *The Fourteenth International Conference on Tangible, Embedded, and Embodied Interaction (TEI '20)* (pp. 905–909). Association for Computing Machinery.

Coleman, M. K., Peeters, M. M. R., Lamontagne, V., Worbin, L., & Toeters, M. J. (2011). Disseminating knowledge of electronic textiles at art schools and universities. In *The 17th International Symposium on Electronic Art (ISEA)* (pp. 14–21). ISEA.

Dunne, A. (ed.) (2005). *Hertzian tales: electronic products, aesthetic experience, and critical design*. MIT press.

Eckert, C., & Stacey, M. (2000). Sources of inspiration: a language of design. *Design studies*, *21*(5), 523-538. Retrieved from https://doi.org/10.1016/S0142-694X(00)00022-3

Espoo Innovation Garden (2020). A soft toy standing guard at night. Retrieved from https://www.espooinnovationgarden.fi/en/espoo-innovation-garden/stories/leeluu-a-soft-toy-standing-guard-at-night/

Garber, E. (2002). Craft education in Finland: Definitions, rationales, and the future. *Journal of Art & Design Education, 21*(2) 1321–45. doi: https://onlinelibrary-wiley-com.ezproxy.ulapland.fi/doi/epdf/10.1111/1468-5949.00308

Genç, Ç., Buruk, O. T., Yılmaz, S. İ., Can, K., & Özcan, O. (2018). Exploring computational materials for fashion: Recommendations for designing fashionable wearables. *International Journal of Design, 12*(3), 1–19.

Granger, M.M. (2015). *The fashion industry and its careers: An introduction* (3rd ed.) http://dx.doi.org.ezproxy.ulapland.fi/10.5040/9781501303609.ch-002

Harjuniemi, E., Johansson, M., & Pyrstöjärvi, P. (2019). Co-teaching in multidisciplinary design fields. In *Cumulus Conference Proceedings Rovaniemi 2019 Around the Campfire – Resilience and Intelligence 2019*(5), 764–767. https://www.cumulusrovaniemi2019.org/loader.aspx?id=4977f4de-45ad-4a5f-b3d3-ec7936db30e0

Hamdan, N. A., Voelker, S., & Borchers, J. (2018). Sketch&Stitch: Interactive embroidery for e-textiles. In *the 2018 CHI Conference on Human Factors in Computing Systems (CHI '18)* (Paper 82, pp. 1–13). Association for Computing Machinery

Hartman, K., McConnell, J., Kourtoukov, B., Predko, H., & Colpitts-Campbell, I. (2015). Monarch: Self-expression through wearable kinetic textiles. In *Proceedings of the Ninth International Conference on Tangible, Embedded, and Embodied Interaction* (pp. 413–414). Association for Computing Machinery.

Häkkilä, J., & Johansson, M. (2018). Arctic design for a sustainable, technological future. In T. Jokela & G. Coutts (Eds.), *Relate North. Art & design for education and sustainability* (pp. 32–51). Lapland University Press.

Ikäheimo, J. (2012). Designing playgrounds in the Arctic for the world. In P. Tahkokallio (Ed.), *Arctic design: Opening the discussion* (pp. 78–81). University of Lapland.

Jokela, T. (2012). Lapland snow design: reflections from Walden pond. In P. Tahkokallio (Ed.), *Arctic design: Opening the discussion* (pp. 34–41). University of Lapland.

Jokela, T., & Tahkokallio, P. (2015). Arctic Design Week: A forum and a catalyst. In T. Jokela, & G. Coutts (Eds.), *Relate North. Art, heritage and identity* (pp. 118–139). Lapland University Press.

Juhlin, O. (2015). Digitizing fashion: Software for Wearable Devices. *Interactions 22*(3), 444–7. doi: https://doi.org/10.1145/2754868

Kan, V., Fujii, K., Amores, J., Zhu Jin, C. L., Maes, P., & Ishii, H. (2015). Social textiles: Social affordances and icebreaking interactions through wearable social messaging. In *Proceedings of the Ninth International Conference on Tangible, Embedded, and Embodied Interaction* (pp. 619–624). Association for Computing Machinery.

Kettley, S. (2016). *Designing with smart textiles.* Fairchild Books.

Keskitalo, E. (2020). A pioneer in body measurement. Retrieved from http://www.satakunta.fi/en/pioneer-body-measurement

Khan, A. Roo, J. S., Kraus, T., & Steimle, J. (2019). Soft inkjet circuits: Rapid multi-material fabrication of soft circuits using a commodity inkjet printer. In *The 32nd Annual ACM Symposium on User Interface Software and Technology (UIST '19)* (pp. 341–354). Association for Computing Machinery

Kobakant (2020). Sensors. https://www.kobakant.at/DIY/?cat=26

Lapuan kankurit (2020). Koivu. https://www.lapuankankurit.fi/en/koivu-bath-towel

Lovell, E., & Buechley, L.. (2010). An e-sewing tutorial for DIY learning. In *The 9th International Conference on Interaction Design and Children (IDC '10)* (pp. 230–233). Association for Computing Machinery.

Marimekko (2020). Kuuskajaskari. https://www.marimekko.com/gb_en/printed-fabrics/all-items/kuuskajaskari-linen-fabric-grey-yellow-black-065959-920

Miettinen, S., Laivamaa, L., & Alhonsuo, M. (2014). Designing Arctic products and services. In T. Jokela, & G. Coutts (Eds.), *Relate North 2014: Engagement, art and representation* (pp. 105–109). Lapland University Press.

Miettinen, S., Konttinen, K., Beaulé, C., Soto, M., Kuure, E., Mikkonen, E., & Sarantou, M. (2020). What is Arctic Design? | Service Design Research Group (Co-Stars). Service Design – Palvelumuotoilu. https://www.youtube.com/watch?v=aWM0bN3PjM8&feature=share&fbclid=IwAR3zjuNWgvRMewvYCor_10ezFcu8PzKuxNxU_5TlbccpKRkDWTdOfJJxiKQ

Nilsson, L., Satomi, M., Vallgårda, A., & Worbin, L. (2011). Understanding the complexity of designing dynamic textile patterns. In *Ambience'11, where art, technology and design meet*, Borås Sweden, 28-30 November 2011. CTF.

Rhodes, B. (1997). A brief history of wearable computing. *MIT Wearable Computing Project*. https://www.media.mit.edu/wearables/lizzy/timeline.html

Roinesalo, P., Virtanen, L., Lappalainen, T., Kylmänen, A., & Häkkilä, J. (2016). Solar shirt: design of an environmental awareness wearable. In *The 2016 ACM International Joint Conference on Pervasive and Ubiquitous Computing: Adjunct (UbiComp '16)* (pp. 4954–99). Association for Computing Machinery

Ryan SE (2009) Re-visioning the interface: Technological fashion as critical media. *Leonardo Journal 42*(4), 307–313.

Seipell, T. (2012). Arctic Design is hope. In P. Tahkokallio (Ed.), *Arctic design: Opening the discussion* (pp. 68–75). University of Lapland.

Seppälä, J. (2012). The business world needs Arctic Design. In P. Tahkokallio (Ed.), *Arctic design: Opening the discussion* (pp. 16–19). University of Lapland.

Skach, S., Xambó, A., Turchet, L., Stolfi, A., Stewart, R., & Barthet, M. (2018). Embodied interactions with e-textiles and the internet of sounds for performing arts. In *Proceedings of the Twelfth International Conference on Tangible, Embedded, and Embodied Interaction* (pp. 808–7). Association for Computing Machinery.

Steed, J., & Stevenson, F. (2012). *Sourcing Ideas.* http://dx.doi.org.ezproxy.ulapland.fi/10.5040/9781474218405.ch-001

Strickfaden, M., & Heylighen, A. (2010). Cultural capital: A thesaurus for teaching design. *International Journal of Art & Design Education, 29*(2), 121–133. doi:10.1111/j.1476-8070.2010.01653.x

Strickfaden, M., Stafiniak, L., & Terzin, T. (2015). Inspired and inspiring textile designers: Understanding creativity through influence and inspiration. *Clothing and Textiles Research Journal*, *33*(3), 213–228.

Tahkokallio, P. (Ed.) (2012). *Arctic Design – opening the discussion*. University of Lapland.

Tahvanainen, A-J & Pajarinen, M. (2014). *Älykankaita ja kukkamekkoja. Suomalainen tekstiiliteollisuus globalisaation ristiaallokossa.* Helsinki: Taloustieto Oy (ETLA B265). https://www.etla.fi/wp-content/uploads/alykankaita__kukkamekkoja_ETLA_B265_kansilla.pdf

Takahashi, H., & Kim, J. (2019). 3D Printed fabric: Techniques for design and 3D weaving programmable textiles. In *The 32nd Annual ACM Symposium on User Interface Software and Technology (UIST '19)* (43-51). New York, USA: Association for Computing Machinery

Tharakan, M. J. (2011). *NeoCraft: Exploring smart textiles in the light of traditional textile crafts*. http://hb.diva-portal.org/smash/get/diva2:887454/FULLTEXT01.pdf

Tomico, O., Hallnäs, L., Liang, R. H., & Wensveen, S. A. (2017). Towards a next wave of wearable and fashionable interactions. *International Journal of Design 11*(3). http://www.ijdesign.org/index.php/IJDesign/article/viewFile/3177/793

Ulrich, K., & Eppinger, S. (2016). *Product design and development*. (6th ed.). New York: McGraw-Hill.

University of Lapland (2020). Our research profile. Retrieved from https://www.ulapland.fi/EN/Research/Our-research-profile

Usenyuk-Kravchuk, S., Garin, N., Trofimenko, A., & Kukanov, D. (2020). Arctic design: revisiting traditional fur clothing within the daily routine of reindeer nomads. *Heliyon*, *6*(2), e03355.

VTT Technical Research Centre of Finland (2020a). Wearable technology. Retrieved from https://www.vttresearch.com/en/ourservices/wearable-technology

VTT Technical Research Centre of Finland (2020b). Printed intelligence. https://www.vttresearch.com/en/ourservices/printed-intelligence

Wu, X. J., & Li, L. (2019). An introduction to wearable technology and smart textiles and apparel: Terminology, statistics, evolution, and challenges. In X. Dong (Ed.), *Smart and functional soft materials.* doi: 10.5772/intechopen.86560

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Heritage as a verb

In 2017, at Tate Liverpool in the United Kingdom, my colleagues and I organised an art performance where we invited the visitors of the gallery to join us to knit in a traditional knitting circle and reflect their relationship to knitting. This performance was part of a week-long *Tate Exchange* exhibition, entitled *From Mittens to Barbies* and it was organised by the international Arts-Based Education Research (ABER) network. The network aimed to develop higher education research and the exhibition was organised as a collaborative event with different types of participatory artistic actions to model ABER practices and discuss their outcomes. We believed that knitting together in an art gallery would be rather unusual, compared to the traditional setting of knitting circles taking place in people's homes, and would bring innovative perspectives to the traditional, sometimes perceived as commonplace, practice of knitting. The rhythm of knitting created an intimate space for dialogue where true values and multiple meanings of cultural heritage could be negotiated. These negotiations remain particularly timely with the Council of Europe's (2020) *Convention on the Value of Cultural Heritage for Society*, also known as the Faro Convention.

Faro promotes a wider understanding of heritage and its relationship to society and seeks creative ways of developing and managing community heritage (Council of Europe, 2020). The convention's philosophy has moved away from a conservation orientation (static) towards recognizing the need to involve everyone in society in the ongoing process (active) of defining cultural heritage. Smith (2006) calls this kind of heritage understanding a performance or act of embodied meanings, remembering, and effects. These principles apply also to performative dimensions of contemporary art in which art is seen as an action inviting people to engage instead of encouraging them to passively observe as an audience (Sederholm, 2002; Hiltunen, 2012). Combining traditional handcrafts with contemporary art practices through intergenerational and intercultural approaches creates an open space for dialogue where the values and the perceptions of

cultural heritage can be negotiated (Härkönen, Huhmarniemi & Jokela, 2018). At this intersection of traditional handcrafts and contemporary art, I see the possibilities of weaving together traces of traditional and innovative uses of heritage. The active meaning-making of cultural heritage, an objective of Faro, requires a view towards aspects of diverse values and interpretations of cultural heritage in striving for a sustainable future (Thérond, 2009).

In this chapter, I aim to follow the spirit of the Faro Convention and examine how traditional knitting circles as an art performance set in the context of an art museum stir discussion on the contemporary meaning-makings of traditions as cultural heritage. The framework for my study comes from the ABER network's research project, *The Pedagogical Turn to Art as Research*, that aims to develop arts practices in doctoral programmes around the globe. This article is also part of my broader research interest in developing higher education in the arts through the principle of cultural sustainability. I am especially interested in the intersection of craft traditions and contemporary art, particularly how perception of the tradition either deepen or change when brought into a new context.

I have based my research on the methods of ABER and Arts-Based Action Research (ABAR) (Jokela, 2019). At the core of ABAR research activities is interaction among participators, and the researcher is usually an equal participator in the action. My data were generated through dialogic participation, observation, and documentation of the art performance at Tate Liverpool. To gain knowledge, especially on crafting as action, I utilised the theoretical studies of *Making as Method* (Fitzpatrick & Reilly, 2019) that discusses crafting as an embodied knowledge and seeks its innovative uses in research.

From object to process: Faro perspectives on cultural heritage

The term *cultural heritage* is usually connected to the protection of historical monuments. Fojut (2009) explains that this rather narrow connotation has roots in the past when, starting from the mid-1960s, heritage action concentrated on conserving valuable heritage sites and heritage discourse was strongly expert-dominated. He argues that expert-lead conservation policy strengthened the limited definition and made heritage practice exclusive. Previously, the ordinary populace was not involved in cultural decision-making, and conservation of heritage was seen as its main mission (Fojut, 2009).

In the late 1990s, the focus gradually changed. Balancing among local, regional, national, and international interests in heritage was considered a necessity. This laid

the foundation for the Faro Convention that entered the scene internationally in 2011 (Council of Europe, 2020). The greatest difference in Faro from previous heritage conventions is the shift of perspective from conservation to developing interest in the social and cultural benefits of cultural heritage (Fairclough, et al., 2014). Faro builds on the collective heredity and seeks ways to promote understanding of the meaning of common European heritage. Faro stresses everyone's equal rights to participate in cultural life and simultaneously emphasizes individual and collective responsibility to respect the cultural heritage of others. Fundamentally, Faro takes steps to involve heritage in the construction of a peaceful and democratic society that promotes cultural diversity (Council of Europe, 2020). The value of heritage is recognised in conflict resolution, in economic regeneration, in education for citizenship, and in promotion of sustainable development (Fojut, 2009).

In suggesting *heritage* be coined as a verb, I refer to Faro's way of defining heritage as a socially constructed process of remaking. The shift from recognising only the knowledge of experts to validating the agency and ownership of everyone turns heritage into an action rather than a noun (see Smith, 2006; Fairclough, 2014). When heritage is seen as a socially active process, the intangible aspects of heritage rise to the surface, including knowledge-related crafting skills and traditions of making. Heritage as a verb also invites innovative approaches to examine and seek new meanings for old traditions in contemporary culture. Innovation does not necessarily mean progress into something new and fancy, but instead innovation holds potential in helping people view valuable tacit functions in a new light.

Professor of heritage and museum studies in the Australian National University, Laurajane Smith (2006) argues that all heritage is actually intangible. While objects and localities may exist as identifiable sites of heritage, what makes these valuable and meaningful, in fact, are the present-day cultural processes and activities undertaken around them (Smith, 2006). Although it is not meaningful to translate cultural heritage only as private and personal, it is inevitable that heritage conveys deep personal values and meanings. Smith (2006) continues that heritage is about negotiation, about using the past, about collective or individual memories, and about new ways of being and expressing identity. Heritage includes the concepts of *identity*, *power*, *memory*, *place*, and *performance* (Smith, 2006). Recognising these dimensions of heritage on a personal level helps individuals to perceive the ingredients of their cultural identity and sense of belonging in a larger historical and regional cultural continuation.

Making, Embodiment and Memory

Today, we are resurrecting our mothers' and grandmothers' activities (Lippard, 2010). Traditional local knowledge with long historic roots is a valuable form of cultural heritage for contemporary culture, and traditional crafting skills and various purposes for handcrafting finds new meanings in the generational chain (Härkönen et al., 2018). Passed down from one generation to the next as an embodied practice, crafting is a social process for empowerment, action, and expression (Fitzpatrick & Reilly, 2019). My roots are in Central Lapland in Finland where knitting has been a commonly mastered skill for generations, and it is still taught in schools, so my two sons also know how to knit. It has long been a part of the northern Finnish cultural tradition beyond cultural boundaries. I recall my grandmother knitting at every possible moment in between her other domestic duties, and Sámi duodjar Gunvor Guttorm (2015) speaks about her mother and grandmother finding time to knit to get a break from responsibilities. While sitting down to knit, they had a chance to rest and find space for themselves (Guttorm, 2015). I have continued my mother's and grandmother's knitting enthusiasm in using the craft as a medium for my artistic expression.

Figure 1. Woollen Sceneries 2017. In this artwork, I have examined a landscape experience through knitting. The mittens were used as reference for the knitting circle at the Tate gallery. Photo: Elina Härkönen, 2017.

People have gathered together for centuries to share their stories through crafting to construct beauty, meaning, and culture from whatever they had on hand (Fitzpatrick & Reilly, 2019). Knitting circles have long traditions, and they are often connected to charity work and to religious life. Ford (2006) argues that, although usually perceived as a woman's hobby or social event in her spare time, these knitting circles have held deeper meaning. For instance, one purpose of some circles has been to produce prayer shawls for people in need. As a ministry, these groups have attracted women, and occasionally men, from all walks of life and all age groups (Ford, 2006). Like Ford, Lippard (2010) highlights the common perception for women's crafting as 'hobby art', and for a number of years, traditional crafts, like Native American Navajo rugs, gained public attention only if re-presented through male artists. This has affected that crafting as art has often been considered a private activity, mainly for personal reasons (Lippard, 2010).

According to Ford (2006), knitting itself has been seen as a meditative, spiritual activity, and the knitting circle meetings would start with an hour of complete silence. This is used to settle the mind and move into the rhythm of knitting. Only after the silence would discussion start, in which concerns, life situations, and helpful knitting tips are shared (Ford, 2006). If the maker is alert, handcrafting can stir versatile perceptions through all the senses that guide the making, and the making is realized by the movements of the maker's body (Kojonkoski-Rännäli, 2014). Craft does not, however, reside in the body but moves between the maker and the object being made (MacGill, 2019). Similarly, this principle applies to artmaking. Ufan (2010) speaks about the importance of the bodily experience in the making; repeated actions enable transformations in ideas. This increases the depth and expansiveness of the made artwork. As more externality is incorporated, transparency fades, and the unknown appears (Ufan, 2010). This exchange is connected to the qualities of the aesthetic learning processes that Hellman (2019) describes as supporting the unexpected linking of objects, thoughts, and areas of knowledge, as well as the disentanglement of what is already known. Arts-Based Education Research (ABER) aims to achieve similar outcomes, especially for art educators. Sinner (2019) refers to Turchi when she says that art scholars in higher education should break with tradition to become a new tradition, no longer an exception but the rule, and to form a body of art that is historical and contemporary at the same time. This is how tradition and innovation meet through art education, in formal and informal settings.

Through bringing a traditional knitting circle to the museum context, we wanted to test if such an act would make visible the tacit knowledge often hidden in the embodiment of knitting and provide a channel for tradition to emerge through the means of art

performance. The performative nature of contemporary art often appears in interaction processes and initiates new meaning-making for ordinary practices. Sederholm (2002) stresses that performative expression is not closed to more than one interpretation but offers alternative ways of acting and perceiving to the prevailing cognitive structures. Its contextuality, temporality, and materiality tie the expression to action, and in communal contexts, the aspects of communication, creation, and being present can create meaningful encounters for individuals (Sederholm, 2002). Hiltunen (2012) sees the possibilities of performativity in arts education to channel private bodily experiences of art to be collectively shared, enabling larger audiences to participate in the art. Performativity taking place at the intersection of social interaction, feelings of togetherness, and symbolic kinship leads to empowerment and emancipation (Hiltunen, 2012). Performativity is precisely a contestation of the excessive power granted to language in determining what is real (Barad, 2003). Through making the bodily experience visible, artisans can understand and find new meanings for the common way of perceiving the world.

Working with heritage through the means of crafts and the arts offers possibilities to develop embodied knowing and attaching to forgotten memories through the sense of material and through the rhythm of making. According to Crouch and Parker (2003), embodied practice enables people to remember past events and rework the events through the present. They emphasise that in the doing, moments of memory are recalled and reactivated and, thus, may be drawn upon in new combinations of signification. The past can never be understood solely within its own terms; the present continually rewrites the meaning of the past (Smith, 2006). Crouch and Parker (2003) remark that by acknowledging the links between memory and remembering, and linking these with the idea of heritage, we can obtain a more nuanced understanding of the emotional quality and power of the cultural process of heritage. This reinforces the idea of heritage, not a passive subject of management and conservation or tourist visitation, but as an active process engaged with the construction and negotiation of meaning through remembering (Smith, 2006).

Arts-based Research and Making as Method

One of the objectives of the broader Tate Exchange, *From Mittens to Barbies*, in which the knitting circle was one of five participatory events, was to model and investigate the emerging Arts-Based Education Research (ABER) practices through a comparative international study of doctoral programmes. The aim of ABER, for instance, is to provide practice-based tools for art pedagogies to research and develop their effectiveness and

to investigate art as a source of knowledge (see Sinner, 2019). ABER embraces practice-gained knowledge. It is against seeing art as subordinate, an exotic component of research, and places creative process at the core of knowledge production in educational research practices (see Adams, 2019). My methodological choices form a hybrid approach in which ABER defines the framework and the motives for action. Through my research, I aim to contribute to ABER, and as an arts educator-researcher, I examine my own work and seek key development points.

With my research focused on action and outcomes, my tools for creating the action, collecting the data, and analysing the data came from Arts-Based Action Research (ABAR). Jokela (2019) describes ABAR as case-specific and developmental research that follows the traditions of action research, which is formed as part of qualitative research. It has cyclical processes of research that include the definitions of objectives and research tasks, planning, theoretical background work, artistic work and similar interventions, reflective observation, conceptualisation, and the specification of objectives for the next cycle (Jokela, 2019). The research process and results were documented, and this documentation was used as research material. As a team, my colleagues, Maria Huhmarniemi and Annamari Manninen, and I participated, documented, and reflected on the collected observations of the action. After the first gallery day, the knitting circle moved into the workshop area where I was the main person responsible for the action. For five days, I continued the research by marking in a research diary about discussions with the participating knitters and about the bodily experiences gained through the performance.

My research orientation was phenomenological. I aimed to view the researched phenomenon, knitting as social process in the gallery space, with a new point of view and to be aware of my own conventions of knitting as a form of action. Based on Husserl (cited in Anttila, 2006), this reduction in phenomenology means becoming aware of the unexpressed mechanisms that direct the researcher's thinking and action. Faulkner (2017) and Fitzpatrick and Reilly (2019) speak about the use of process-oriented craft to explore reality, create something new, disrupt usual ways of thinking, and create embodied experience.

Knitting as a Performance of Remembering

The *Tate Exchange* was designed to be a platform for research-based creative work of artist-students from five different partner institutions from Europe and Canada. The event encouraged gallery visitors to engage practically and creatively with the theme

Figure 2. All set for the museum to open and the knitting to begin. I had brought my family tapestry with me to represent home. Photo: Annamari Manninen, 2017.

Figure 3. When hands started moving, memories started to flow. Some were more talkative than others, but the making was mutual. Photo: Annamari Manninen, 2017.

or social issue brought into focus by the artist-students (Adams, 2019). Many of the students explored creative body-awareness practices and sought responses from the participating audiences contributing to these research projects (Adams, 2019). When my colleagues and I planned our part of the *Tate Exchange*, we were met with a warning from some of our partners that knitting as a method would not be approachable to many because, assumedly, people do not knit anymore. That somehow supported my own perception at the time; I connected knitting only to the northern circumpolar countries. Although we did consider some contemporary artistic alternatives to knitting after this remark, we quickly settled on our initial aim to bring traditional crafting into a contemporary context. I was prepared with a worst-case scenario in which people would not participate but only observe our art performance.

Our initial aim was to knit swatches of meaningful landscapes and discuss memories related to the scenes with the participators during the week. This was based on my artwork *Woollen Sceneries* (see Figure 1) that was displayed at the gallery as a reference work. I had knitted my experience landscapes to mittens from my art education trip to Iceland.

To reveal hidden connotations of knitting and start conversations about heritage values, we utilised citation in our art performance. In practice, citation means that certain norms or habits are taken out of their usual contexts and presented in new settings to change or highlight their meaning (Sederholm, 2002). We were not completely sure what to expect when we planned our performance, especially when we received the initial impression of knitting being a forgotten practice. We could foresee that the museum context would influence the conception of the knitting circle that usually took place in cosy home environments. We knew that our partners from the network would definitely join,

Figure 4. Many people were almost sad they had not kept their knitting active. Many promised they would henceforth continue this practice. Fast knitters managed to knit several swatches, and they shared the landscape experiences these knitted pieces represented. Photo: Annamari Manninen, 2017.

Figure 5. My colleague, Maria Huhmarniemi, with a GoPro shows her knitting hands reflected on the wall. It created a fun public dimension to the otherwise intimate knitting practice. Photo: Annamari Manninen, 2017.

but the participation of other museum visitors was questionable. First, people walked around and observed what we did. Then, they gradually started to take part, especially when we sought contact with them. Later during the week, some people specifically searched for us. They had heard about the possibility of joining the knitting and came for that reason.

It was truly overwhelming how people from all over the world, women and men, children and elderly, started coming and participated in our knitting circle. As it turned out, knitting was not unfamiliar to people, quite the contrary. The landscape theme worked as a launching point for the making, but it quickly became apparent that it was the activity of knitting itself that people wanted to discuss. It seemed unimportant for them to produce a completed piece while joining the circle, but instead it appeared important for them to talk about their experiences, memories, and previous knitting achievements. Some people showed knitting techniques to others, and lively comparison ensued as to whether people were used to knitting in Continental or English styles.

Fitzpatrick and Reilly (2019) point out that crafting requires us to listen to our bodies and allows us to identify differently with our social context. It was interesting to notice that almost immediately when the knitting started, people began to discuss and share intimate memories with people they had just met for the first time. This mutual activity of bodily making seemed to help the memories flow and to help people socialize with strangers.

Fitzpatrick and Reilly (2019) remark that when craft-making practices are employed in the research process, they can provide a significant way to tap into hidden stories that reside in our bodies and in our pasts and that shape our current understandings and positions. This philosophy is in line with the ABER method. Almost

everyone who participated in the knitting circle shared a memory of a grandmother, a mother, or a father who had knitted in their childhood. These memories were related especially to post-war eras when the generation who rebuilt the war-torn country knitted more frequently than people nowadays. We were told that knitting was used to rehabilitate war injuries in the United Kingdom, which encouraged the men in societies to learn how to knit. In some countries, knitting and crocheting were male jobs in earlier times; it was only later that women in these societies found knitting. It was truly a surprise to my colleagues and I how common and universal was the memory of knitting. Smith (2006) points out that collective memory has particular emotive power, and unlike professional historical narratives, it is an important constitutive element of identity formation.

Figure 6. The workshop space had a cosy sofa that invited people to socialize and knit even more. Some people came in groups and immediately entered into the full rhythm of knitting. The piece on the floor is a collection of the knitted swatches during the week. Photo: Elina Härkönen, 2017.

Knitting was described as performative: it was perceived as meditative to sit down and knit during the hectic day. The atmosphere became harmonic and leisurely. The act of knitting also made the participators reflect on their own making. Some described it as automatic, something that needed no attention. To some, it was a forgotten skill: "I use to know this well but haven't knitted for years. I want to re-learn this!" Taking the needles and yarn and starting to knit prompted the bodily memory of the skill. Smith (2006) stresses that memory becomes particularly powerful when it takes root in the concrete, which works to give further emotive power through the tangibility of its representation. Knitting brought to mind other forms of sensing as well: smells, atmospheres, rhythms. "I have sweet memories of my grandmother knitting but just realised my children won't have the same since I don't knit. Oh no! The tradition may die."

Besides the awakened memories and the new enthusiasm to knit again, I saw the knitting circle in the museum shift a focus. Early in the exhibition, it was apparent that people wanted to talk about the very essence of knitting. The focus of knitting circles in home environments is perhaps concentrated on socializing, where knitting is the motive for joining. In the unusual museum environment, the focus was on the act of knitting and its meaning-makings.

When we think about shared heritage processes, ideas about collective and habitual memory allow us to acknowledge that sharing memories and, perhaps more importantly, engaging collectively in the act or performances of remembering help to bind groups or populations together (Smith, 2006). By the performance of remembering, Smith does not speak about the creative aspect related to remembering but refers to the conscious act of visiting sites or museums where the heritage can be viewed, experienced, and reflected. Adapting and expanding Smith's concept, I consider our art performance of knitting in the Tate gallery a performance of remembering. The utilization of bodily experiences and unusual space as a citation to a universally known tradition brought back unexpected and forgotten memories. The negotiation of heritage values was truly meaningful through the artistic experimentation.

Conclusion

The Faro spirit calls us all to active participation to map the valuable cultural heritage of Europe. When my colleagues and I prepared for the Tate Exchange, we did not foresee that instead of only a northern circumpolar tradition, knitting was actually a universal collective memory and experience. Everyone we met and we met people from all around

the world, remembered some family member knitting, or they knitted themselves. The art performance of the knitting circle became a shared performance of remembering.

The broader framework of my article was to offer insight to what the active and intangible nature of cultural heritage might be in the context of the Faro Convention. When seeking to identify what dimension of cultural heritage is valued and can hence be considered as common, the means to active and true participation needs to be sought. If people can perceive heritage as accessible, familiar and shared, participation becomes motivating and genuine. The value and meaning of heritage as a component of everyday life increases. This way heritage becomes a verb. The embodiment in the art-based activities performed at Tate, revealed an abundance of knowledge that probably could have not been reached through other means. I can relate to Adams' (2019) summary of the Tate Exchange serving as a platform for extensive discussions and having a rich and varied range of ideas coming from the visitors.

The responses of the participants to the knitting art performance served as a reciprocal eye-opener. The art performative citation of bringing the traditional knitting circle into a new context, in this case the art museum, helped bring the meanings and social dimensions of knitting into a new perspective. The innovation in this activity, the citation, served to bring insight and allowed the participators to reflect on their experiences in a context dedicated to the act of knitting. The seemingly commonplace event, the collective making and coming together, contained layers of tacit knowledge and hidden experience that came to the surface. From this exchange, I suggest that seeking heritage values is more effectively noticed and determined when they are experienced in a new environment.

References

Adams, J. (2019). Editorial: Visual art-based education research. *International Journal of Art and Design Education 38*(3), 558–561.

Anttila, P. (2006). *Tutkiva toiminta ja ilmaisu, teos, tekeminen.* [Exploring the activity and the expression, the work, the making.] AKATIIMI Oy.

Barad, K. (2003). Posthuman performativity: Toward an understanding of how matter comes to matter. *Signs: Journal of Women in Culture and Society, 28*(3), 801–831.

Council of Europe. (2020). Convention on the Value of Cultural Heritage for Society (Faro Convention, 2005): Retrieved: https://www.coe.int/en/

Crouch, D., & Parker, G. (2003). 'Digging-up' utopia? Space, practice and land use heritage. *Geoforum, 34*(3), 395–408. https://doi.org/10.1016/S0016-7185(02)00080-5

Fairclough, G., Dragićević-Šešić, M., Rogač-Mijatović, L., Auclair, E., & Soini, K. (2014). The FARO convention, a new paradigm for socially—and culturally—sustainable heritage action? Култура/Culture, *8*, 9–20. https://journals.cultcenter.net/index.php/culture/issue/view/10

Faulkner, S. L. (2017). Poetic inquiry: Poetry as/in/for social research. In P. Leavy (Ed.), *Handbook of arts-based research* (pp. 208–230). The Guildford Press.

Fitzpatrick, E., & Reilly, R. C. (2019). Making as method: Reimagining traditional and indigenous notions of 'craft' in research practice. *Art/Research International: A Transdisciplinary Journal, 4*(1), i–xvi.

Fojut, N. (2009). The philosophical, political and pragmatic roots of the convention. In Council of Europe (Ed.), *Heritage and Beyond* (pp. 13–21). Council of Europe Publishing.

Ford, M. (2006). *Traditions of the ancients: Vintage faith practices for the 21st century.* Broadman & Holman Publisher.

Guttorm, G. (2015). Contemporary duodji: A personal experience in understanding traditions. In T. Jokela & G. Coutts (Eds.), *Relate North: Art, heritage & identity* (pp. 60–77). Lapland University Press.

Härkönen, E., Huhmarniemi, M., & Jokela, T. (2018). Crafting sustainability. Handcraft in contemporary art and cultural sustainability in Lapland. *Sustainability, 10*(6), 1907. https://doi.org/10.3390/su10061907

Hellman, A. (2019). Aesthetic learning encounters at the old church of Jokkmokk. In T. Jokela & G. Coutts (Eds.), *Relate North: Collaborative art, design and education* (pp. 68–84). InSEA Publications.

Hiltunen, M. (2012). Slow activism: Art in progress in the North. In A. Linjakumpu & S. Wallenius-Korkalo (Eds.), *Progress or perish: Northern perspectives of social change* (pp. 119–138). Ashgate.

Jokela, T. (2019). Art-based action research for art education in the North. *International Journal of Art and Design Education, 38*(3), 599–609.

Jokela, T., Hiltunen, M., & Härkönen, E. (2015). Art-based action research—Participatory art for the North. *International Journal of Education Through Art, 11*(3), 433–448.

Kojonkoski-Rännäli, S. (2014). *Käsillä tekemisen filosofiaa* [*The philosophy of making with hands*]. Turun yliopiston opettajankoulutuslaitos.

Lippard, L. (2010). Making something from nothing: Toward a definition of women's 'hobby art'. In G. Adamson (Ed.), *The craft reader* (pp. 483–490). Berg.

MacGill, B. (2019). Craft, relational aesthetics and ethics of care. *Art/Research International: A Transdisciplinary Journal, 4*(1), 406–419.

Sederholm, H. (2002). *Performatiivinen taide ja naisidentiteetin rakentaminen* [*Performative art and constructing of female identity*]. WSOY.

Sinner, A. (2019). Contested latitudes: When is artwork scholarship? *International Journal of Art and Design Education, 38*(3), 610–617.

Smith, L. (2006). *Uses of heritage.* Routledge.

Thérond, D. (2009). Benefits and innovations of the Council of Europe Framework Convention on the value of cultural heritage for society. In Council of Europe (Ed.), *Heritage and beyond* (pp. 9–11). Council of Europe Publishing.

Ufan, L. (2010). The art encounter. In G. Adamson (Ed.), *The craft reader,* (pp. 548–551). Berg.

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Our Plastic Ocean, Our Clean Ocean: Understanding Plastic Pollution in the Arctic: An Illustrated Popup Book of Art in Action

Along with the air we breathe, the ocean is the most necessary element required to sustain life on our planet.

The international community is becoming increasingly aware of the growing plastic pollution found in huge amounts on oceans and beaches, especially in the Arctic costal area. Arctic communities need to be resilient against this environmental threat, particularly in view of the health, wellness, and economic priorities that affect quality of life in the Arctic.

An informed and educated community is fundamental to establishing this resiliency. Among the most important audience is young people, who will inherit the environment consequences of previous generations' actions. As Hicks and King (2007, p. 334) observe, "Art education is well situated to address environmental problems that emerge at the point of contact between nature and social life." It is essential to combine scientific data and creative activities in an educational setting to raise awareness of real-world problems and develop social responsibility and critical thinking skills.

A Learning Journey

My own awareness of the total amount of plastic found in our oceans was a stark revelation when I visited the *Gyre: The Plastic Ocean* exhibit at the Anchorage Museum (2014). It made me wonder how plastic polluted the Arctic was. Afterward, my personal learning journey began.

In 2015, I attended the Alaska Art Education Annual Conference in Kodiak, Alaska. A main topic of the conference was the impact of marine debris on local ecosystem. We

Figure 1. A Plastic Salmon, Kodiak, Alaska. Photo: Herminia Din, 2015.

Figure 2. A Plastic Crab, Kodiak, Alaska. Photo: Herminia Din, 2015.

Figure 3. *Sea-Monster,* A Site-Specific Art Display, Lurøy, Norway. Photo: Herminia Din, 2017.

participated in a beach cleanup, discussed the problems, and made artwork using marine debris. The local high school art teacher, who led the workshop, had created with her students a large public display using marine plastic collected from local beaches in front of the Harbor Master Office to raise awareness of the issue.

Next year in 2016, a research collaboration began with colleagues from Nord University in Nesna, Norway, a part of ASAD Network to study the problem and develop a teacher training workshop addressing plastic pollution in our respective environments. Then, we delivered three teacher training workshops in Lurøy, Nesna, and Brønnøysund in April of 2017. We discussed the current plastic pollution in our environment, cleaned a near-by beach, and created a "sea-monster" site-specific art display.

Subsequently, I worked with an art specialist from Kenai Peninsula Borough School District in Alaska to co-lead hands-on workshops using art and science integrated methods to study plastic pollution in Alaska. We visited two village schools in Port Graham and Nanwalek in April 2018 during *Sea Week*—a week-long exploration about marine science and art. We held 14 workshop sessions at 45 minutes each.

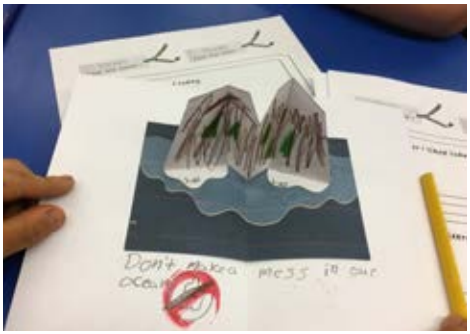

Figure 4. *Don't Make a Mess in Our Ocean*, A Pop-up Card Made by a 2nd Grade Student, Port Graham, Alaska. Photo: Herminia Din, 2017.

Figure 5. A Small Cordiant Popup Book Created by 4th Grade Students, Nanwalek, Alaska. Photo: Herminia Din, 2017.

Figure 6. *Our Plastic Ocean*, A Site-Specific Art Installation During the 2018 Bering Sea Days, St. Paul Island, Alaska. Photo: Herminia Din, 2018.

Figure 7. *Our Happy Ocean*, A Site-Specific Art Installation During the 2018 Bering Sea Days, St. Paul Island, Alaska. Photo: Herminia Din, 2018.

During these workshops we reached a total of 95 students ranging from Kindergarten to 12th grade. Discussions were about current issues of plastic pollution in our oceans, and each student learned how to make either a popup card or a small popup book to express their concerns.

In September of 2018, I worked with two marine biologists from Bering Sea Campus and Research Center, and St. Paul Island Ecosystem Conservation Office (ECO) to lead a week-long art workshop during its annual *Bering Sea Days* focusing on plastic pollution on St. Paul Island.[1] On field trips to different beaches during the week, we witnessed large amounts of plastic waste washed up on shore including fishing nets, ropes, Styrofoam containers, bottles, and household items. Working with more than 40 students from Kindergarten to Middle School, we created a large-scale art installation titled *Our Plastic Ocean vs Our Happy Ocean* displayed at the end of the week.

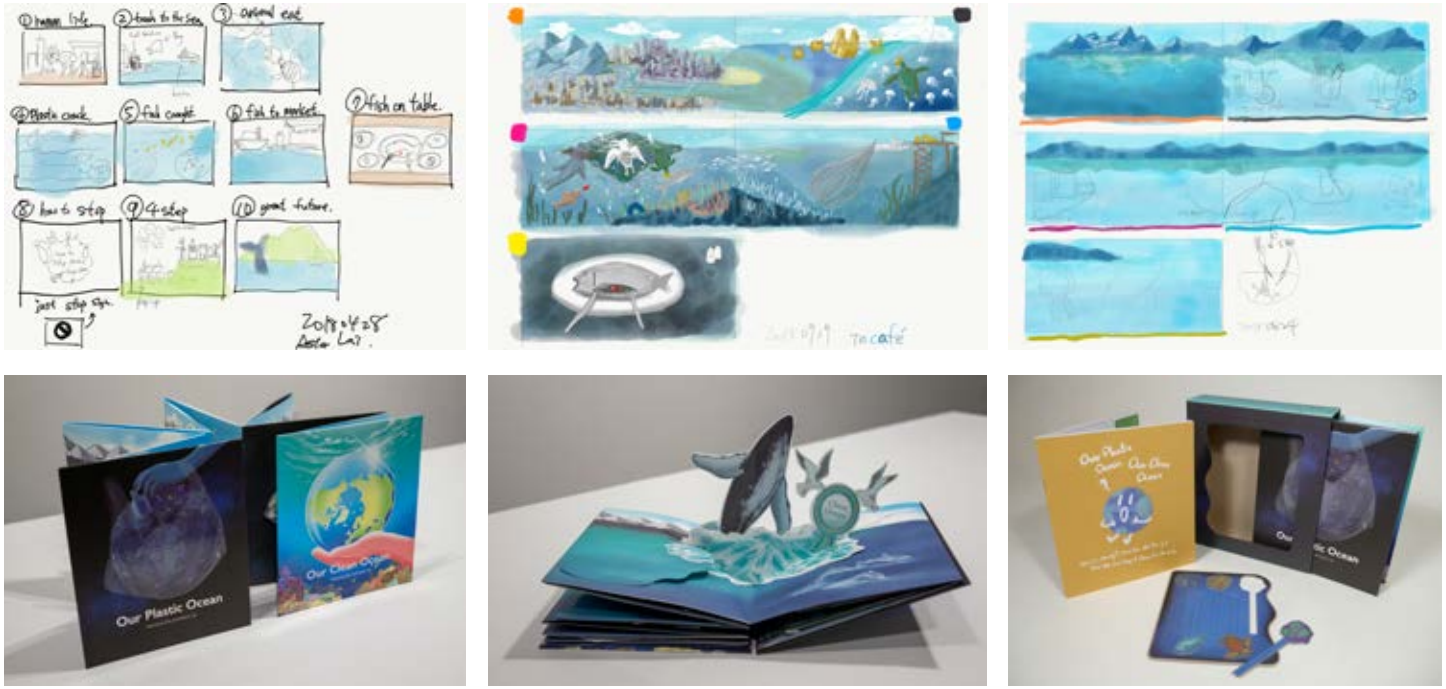

Figure 8. *Our Plastic Ocean, Our Clean Ocean*, Storyboard Development, 2018

Figure 9. *Our Plastic Ocean, Our Clean Ocean*, Concept Drawings, 2018

Figure 10. *Our Plastic Ocean, Our Clean Ocean*, Concept Drawings, 2018

Figure 11. *Our Plastic Ocean, Our Clean Ocean*, A Popup Book. Photo: Herminia Din, 2019.

Figure 12. *Our Plastic Ocean, Our Clean Ocean*, A Popup Book. Photo: Herminia Din, 2019.

Figure 13. *Our Plastic Ocean, Our Clean Ocean*, A Popup Book, 2019

Creating A Popup Book

In August of 2019, *Our Plastic Ocean, Our Clean Ocean* was published (Din & Lai, 2019). This interactive popup book was the result of four years of research in gathering first-hand information about plastic pollution in the Arctic. It required over two years of storyboard development. The work is designed as a boxset including a popup book, a reader's guide, and a puppet theater for children to play their story.

Figure 14. Students Creating a Story Using *Our Plastic Ocean, Our Clean Ocean,* Popup Book Theatrical Stage Set, St. Paul Island, Alaska, 2019

Figure 15. Preschool Students Reading *Our Plastic Ocean, Our Clean Ocean* Popup Book, St. Paul Island, Alaska, 2019

The popup book explains to young readers not only *how* our ocean pollution problem came to be, but *why* we must find solutions as quickly as possible. It shows them *What* they can do in the present to be part of those solutions. It has two contrasting but complementary parts: Part 1 is Our Plastic Ocean: What's Wrong and How We Can Fix It; and Part 2 is Our Clean Ocean: How We Can Keep It Clean for All of Us. The illustrations and pop-ups in *Our Plastic Ocean* make clear the connection between a polluting act and the widespread harm it causes; in *Our Clean Ocean*, the reader learns ways to reduce pollution and keep the ocean clean and healthy. The *Reader's Guide* outlines the simple steps we can take in our own daily life for reducing sources of ocean pollution and hopes to inspire readers to use their own artistic talents to express concerns.

The most challenging task in designing a popup book is not only to overcome the constructional challenge of paper engineering, but to visualize context-sensitive research data and then present it as an empowering means for all ages. This book hopes to make the invisible (scientific data), "visible" (art), and ultimately help readers rethink the relationship between humans and the ocean in a contemporary culture of consumption.

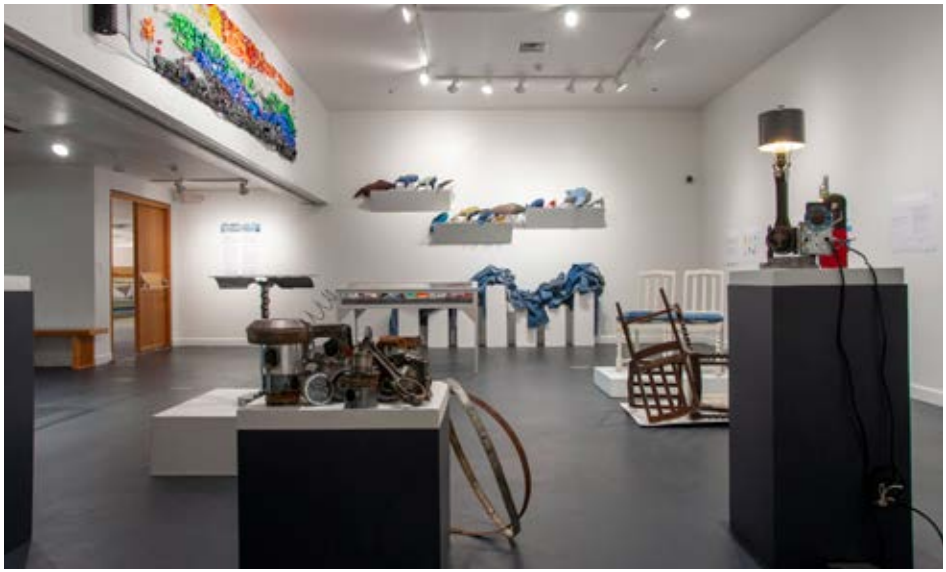

Figure 16. *Our Plastic Ocean, Our Clean Ocean: An Illustrated Popup Book of Art in Action*, An Art Exhibit at the Kimura Gallery, University of Alaska Anchorage, September 3–October 4, 2019.

Art in Action

This book gives readers ownership of the issues of plastic waste including increased concerns on micro-plastics pollution in our oceans. To further outreach, an art exhibit was presented at UAA (University of Alaska Anchorage) Kimura Gallery in September of 2019. The goal of the exhibit is to inspire visitors to use their own artistic talents to express the adverse effect of plastic pollution. The exhibit included functional artwork created by Anchorage re:Made[2] to showcase the importance of the "repurpose and reuse" impact of our actions. Plus, several gallery tours and hands-on workshops were offered to colleges students and community members during the exhibit period.

Finally, this project represents a true collaborative effort among ASAD network members, and to enhance knowledge of the North.

Endnotes

1 St. Paul Island has a total area of 295.5 square miles, of which, 40.3 square miles is land and 255.2 square miles is water. The population is approximately 480 people, yet inhabited by over 100,000 Northern fur seals, 280+ spices of birds and seabirds, and other marine and land mammals including harbor seals, sea lions, walrus, whales, reindeer, fox, and shrew.

2 Anchorage re:Made is a nonprofit 501(c)3 organization that promotes upcycling effort using recycled materials to create beautiful yet finished functional artworks in an open studio art environment. http://www.anchorageremade.com

References

Din, H., & Lai, A. (2019) *Our plastic ocean, our clean ocean*. A popup book. Nander Butterfly Design.

Gyre: The Plastic Ocean (2014). Exhibition at the Anchorage Museum, Feb 7 to Sept 6, 2014. https://www.anchoragemuseum.org/exhibits/gyre-the-plastic-ocean/

Hicks, L. E., & King, R. J. H. (2007). Confronting environmental collapse: Visual culture, art education, and environmental responsibility. *Studies in Art Education*, *48*(4) 332–335.

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Pla(y)cemaking: Emotional Mapping as the Confluence of Art, Play and Place

This chapter presents an emotional mapping photoplay event, based on method emotional mapping (Pánek & Benediktsson 2017) and action of photoplay (Heljakka 2013, 2015). Event took place during the Ärjä *Art Festival* in August 2019. This weekend-long event takes place on a protected island in Oulujärvi, Finland, and is promoted as an anti-festival where experiential art meets the interfaces of science. Its overall goal is to be a step towards an environmentally conscious humanity.

The emotional mapping process that I developed for this event is part of a broader art-based action research (ABAR), where my overall interest is in gaining an understanding of art-based playful methods that can open up re-encounters with places. The aim is to develop methods that can generate affection and empathy for places. The emotional mapping performed here is one of the development cycles of my ABAR process, and the emotional map will be published as an art exhibition. According to Jokela (2019), the ABAR method, which is a combination of art and action research, makes new solutions visible, evident and easy to employ in practice. ABAR combines active operational objectives and participation and increases understanding of the self and the world. Its aim is to develop methods to enable the artist-researcher to seek solutions for challenges in environments and communities (Jokela; Huhmarniemi & Hiltunen, 2019). The emotional mapping process developed here was based on Jokela's (2019) statement regarding the manner in which participatory research evokes emotions and effects among participants.

This ABAR process was based on my affinities for maps (Frosham, 2015; Marks, 2014), places (Nykänen, 2020; Sandberg, 2020), mosaics (Shavit, 2018), playfulness (Stott, 2017), art in placemaking (Kettunen & Sarkkinen, 2020) as well as photographs as mean of understanding (Luukkonen, 2009). The purpose was to gather visual information about places as experienced, emotional and imaginary (von Bonsdorff, 2007, 2017), using participatory visual arts techniques (photography and mosaic making), modified

Figure 1. Programme cover for the 2019 Ärjä Art Festival, pictured on the sandy shore of Ärjä island. Photo: Nina Luostarinen, 2019.

and blended with theory and an understanding of play as permission (Deterding, 2017; Walsh, 2019) and spatial dyads (Juel Larsen, 2015). Still, based on lessons learned in my earlier artistic playful interventions (Luostarinen et al., 2018; Luostarinen, 2019a, 2019b) into places, the special emphasis in regards to play was to give time to introverted, intellectual and reflective slow-play. While there was an excuse to behave oddly with the given playful task and sign in the form of a 'toyish' camera, the playing itself was not social, awkward or a show-off moment; it was more like a liberation to be silently lost in imaginary worlds, thoughts and observations of emotions awakened by place. As Neal (2015) states, positive emotions promote discovery of novel and creative actions, ideas and social bonds. The innermost experiences are personal, artistic, wordless and, to some extent, unconscious (Danielsen, 2020). Helping each participant discover and depict their emotions will transform into something lasting (Sandberg, 2020).

This chapter focuses on my role as an artist-researcher/facilitator and the corollary of a play/placemaker in this role. The chapter follows rhapsody-like guidelines of storytelling (Carlsson, 2020; Lugmayr et al., 2017; McManimon, 2018) and reminds us of the traditional drawing process of maps whereby each spot accumulates when new layers are added. Here, the theory and methods are plaited with the narrative.

Bringing Imagination and Emotions back from the Tradition of Mapmaking

Frosham (2015) suggests that experimental maps produced by artists both bear witness to and participate in reworking the way in which place is conceived and encountered. It destabilises longstanding assumptions about the nature of representation, knowledge and power. These mapmaking practices operate at the juncture of a cartographic tradition that entails distinctively new ways of seeing, knowing and acting in the world. According to Kettunen and Sarkkinen (2020), different kinds of maps can help visualise emotions related to places – when meanings, emotions and experiences are marked onto maps. Art and creative activity can serve as a way to process emotions, leading to profound experiences.

Marks (2014) states that doing artwork in nature can assist in the re-imagining and appreciation of place. Environmental participatory art can connect people with what they value in their environment, re-imagine nature and, consequently, motivate them to employ sustainable practices (Marks, Chandler & Baldwin, 2014). Moreover, as Ham (2013) suggests, this kind of art provokes audiences into discovering personal meanings

and forging personal connections with places and concepts. People's actions are guided by inner perceptions (Nykänen, 2020), and listening to stories about places increases the willingness to engage in preservation (Cserhalmi, 2020). Creating a relationship with a place can become part of a participant's own identity and a basis for engagement (Sandberg, 2020).

I have loved maps since early childhood. For me, maps enabled imaginary travels and the visualisation of places. Maps also boosted my fantasies. While walking in forests, I would imagine my surroundings as illusionary maps, where surreal dimensions, in addition to visual ones, were allowed, just like in magical realism, where the fantasised mixes with the mundane. Further, I experienced synesthetic sensations with great ease. My approach was (and is) linked to animism; for me, it is natural to talk to trees and even appreciate stones and the tiniest details. This is how I experience the world, and this is the worldview that I want others to experience: This is the primary driving force behind my actions in this research process, the corresponding artistic activities and life in general.

The tradition of mapmaking is based on imagining the unknown. Usually, the older the map, the more there are places for imaginary spots. Illustrated maps gave cartography its start centuries before the arrival of traditional maps. Maps used to be the most valuable tool for understanding and conceptualising surroundings. They provided means for people to picture that which could not be seen (Roman, 2015). For me, at least, digital maps have ruined the experience of maps: They are overly accurate, and vision is limited to the place where you are situated. To get a bigger picture, it is essential to unfold the table-sized paper map and let your mind wander on it. Traditional maps enabled experiences of getting lost, but digital versions with location mapping keeps you on track with remarkable precision: Unexceptional perspectives and accidental districts remain hidden. Encouraging the art of getting lost was one of the prime movers of this process. How do we nudge participants to get lost in place and emotions and create a collective map to guide them to the right path out?

There is tremendous range and power of geographical imagination with the places around us. Unruly places have the power to disrupt our expectations and re-enchant geography. As our relationship with places is riddled with paradoxes, it seems that ordinary places can be extraordinary ones because place is integral to human identity. People's most fundamental ideas and attachments do not happen anywhere or nowhere; they are fashioned within and through their relationship with place. We are a place-making and place-loving species (Bonnett, 2014). One of the aims here was to endow value in finding new places by re-seeing them through photographed emotions in an era char-

Figure 2. Camera 54. Depicting emotions through a beach installation. Photo: Unknown participant, 2019.

acterised by an inflation of discoveries. When satellites and GPS seem to have found it all, the uncharted to be found are the narrative and emotional layers of places that we superficially know. The ambition was also to renew the significance of the cultures of northern places and the tradition of spending time on an island – in the case of Ärjä, to reach beyond a 100-year tradition of regular holiday-making into something more significant and esoteric, echoing from the ancient lores of the Sámi settlements, pirate base and tar runners (Koskela, 2017; Naukkarinen, 2018; Sieppi, 2017).

Geographers submit to a tacit agreement to obey certain mapping conventions, to speak in a malleable but standardised visual language. Artists are free to disobey these rules. They can mock preoccupation with ownership, spheres of influence and conventional cultural orientations and beliefs (Harmon, 2009).

Even though one incentive for this process was for the artist-researcher to obtain visual research data (Garrod, 2016; Luukkonen, 2009) and, later, create an artwork (collaborated emotional image of a place) out of it, there was indeed a greater dynamic: an aim to enable new emotions, perspectives, actions and reflections regarding a place. Being educated as a puppeteer, I have an in-built desire to manipulate the course of events and see the animation capacity of objects. I also have the ambition to create methods

that act as a beacon to reveal – by make-believe – for a large number of participants, the magic of true immersion into places and the imaginary worlds in them. The intent was to bring art, participants and stories of the place to the photoplay process in order to experience something new, emotional and meaningful together.

As the *Playful Mapping Collective* (2016) suggests, mapping intrinsically offers interesting ludic possibilities through narrative, design, power, navigation and the inherent playability in mapping assemblages. Mapping and playing are close associates that are frequently intertwined: Mapping invites specific and situated ludic attitudes. The collective follows play scholar Sutton-Smith and sees play as an ambiguous activity, thus drawing attention to 'the play within' maps or 'playing with' mapping (Playful Mapping Collective, 2016). Alternatively, Burke et al. (2017) utilise the provocation of playfulness in mapping and respond with an artful riposte in relation to fluid intersections with place. The aim of the emotional mapping of Ärjä has both of these dimensions: The participants played with mapping, and I, the artist, played with the old maps respectively.

Launching the Play with Cameras

Hjort (2015) argues that within urban spaces, the taking, reflecting on and sharing of camera phone content are redefining the overlay between spatial, temporal, social and cultural narratives. Such practices meditate and re-present. They reframe. They play a powerful role in the experience, representation and performance of the urban. Hjort further suggests that by framing mobile art and game interventions in terms of ambient play, camera phone practices – especially in an age of geo-tagging where images are encoded with geographic information – are creating their own cartographies of place within urban settings as they overlay the visual with the ambient, social with the geographic and emotional with the electronic. In other words, camera phone practices evoke the ongoing importance of ambient play and co-presence in mapping a sense of place (Hjort, 2015). Brantner (2018) defines these practices in the following way: the integration of geolocative data and locative photography generates a new way of seeing: what is called 'emplaced visuality'. Inspired by, e.g. Hjort's work, the initial aim of my study was to borrow digital cameras with geodata capability in order to create exact maps of where and when the emotional images were taken. However, contrary to Hjort, I wanted to perform mapping in *rural*, compelling surroundings and not to use *mobile phones* but various cameras. I wanted to encourage the participants to be off-grid from

their daily messages during this action and, therefore, using their own mobile devices was out of the question.

Even after persistent efforts, it turned out that it was impossible to borrow a decent number of digital cameras. I had considered disposable cameras as a back-up plan, but I was quite hesitant to bring throwaway trash to be used among ecologically conscious participants. After discussions with the festival organisers, I was encouraged to proceed with that option, as they somehow liked the retro vibes that film cameras brought. Luckily, it turned out that one importer had more than 200 disposable cameras for which the best-before date for developing the film had expired, and those cameras were to be dumped. After getting used to the idea of disposable cameras, I actually felt that it was a truly serendipitous twist, and the end result turned out to be better.

Figure 3. Camera 40. Encouraged to see the place from various perspectives, enjoying the celestial views and listening to the place. Photo: Unknown participant, 2019.

Figure 4. Camera 32. Depicting emotions through facial expression in the harsh weather conditions Photo: Unknown participant, 2019.

The use of disposable cameras ended up serving the overall aim of enabling new seeing and allowing synesthetic perceptions of places. First, the toy like look of the cameras and the utmost simplicity involved in the usage made them accessible for everyone to participate. They lowered barriers, although the task was not serious or difficult. Second, the original motivation for using one equipment for one purpose was thoroughly fulfilled. The participants only played with this toy camera to map and conserve emotions; it could not be used for anything else. Third, the cameras also worked as indicators of play and authorised unconventional behaviour. Fourth, they brought back the nostalgic tradition for photographing on film: You were unable to see the results immediately and needed to patiently wait for them. There is also an element of surprise in the end results. Fifth, a limited number of available frames means that the task is framed in a way that is unlike the limitless possibilities of digital cameras. This limitlessness can turn into a vast number of entries, but based on my earlier experience, it is more likely to result in passivity or a complete abandonment of the activity. Sixth, using film cameras with expired film underlined the poetic interpretations and dreamlike atmosphere due the colourscape and granularity of the film. Seventh, the use of the film camera intensified

the incentive of sensing the time layers of the place. The lost moment reappeared when developing the film, which is like travelling in time back and forth. Like the magic of conjuring up the lost characters and items captured on film, it also symbolises how we end up getting only someone's chosen and framed perception of what actually happened. This functions as a reminder of how someone has prechosen the stories we hear from a certain place, which might only be a fragment of the whole story or a distorted point of view.

I was truly delighted when I received the cameras and found out that they were actually waterproof. I imagined people photographing their emotions while swimming and spending summer weekends on the shores of the island. However, the reason for enjoying the waterproof quality of these disposable cameras turned out to be quite different. In between two sunny and torrid weeks, the actual weekend of the Ärjä Art Festival turned out to be miserable weather-wise: gusty, cloudy with showers and temperatures hardly reaching 10 °C. What underlined the harshness of the weather was the fact that there was practically no infrastructure on the island, and everything happened outdoors during the entire weekend. The weather conditions also presumably influenced the number of participants attending the festival. It required stamina and optimism to carry through with this process in these conditions.

Let the Play Begin!

On the Friday afternoon, once the participants were transported to the island and everyone had their tents or hammocks set up, it was time for the official launch of the event. After raising the flag, I introduced my research and the concept and process of the art-based emotional mapping photoplay and distributed the cameras to everyone who wanted to take part. At that point, I also reminded the participants of the agreed conditions (which were also in the printed instructions and stickers attached to the disposable cameras) when returning the cameras: The images taken can be used freely for research, artistic and other purposes, and each photographer must ensure approval of these condition if filming other people. By giving up the authorship to their photographs, the participants gained anonymity (Jung, 2016); therefore, in the information regarding the images, only the camera number is visible: The original author cannot be tracked. Noticing upon transportation by boats that most of the participants seemed to be zealot eco-hippies, I was nervous about the instant feedback for bringing plastic trash to an eco-festival. However, explaining how I obtained the cameras and clarifying

Figure 5. Disposable cameras ready for distribution. Photo: Nina Luostarinen, 2019.

Figure 6. At the opening ceremony of the Ärjä Art Festival. Photo: Nina Luostarinen, 2019.

that these disposable cameras serve as equipment for the art-making process instead of ending up in landfills seemed to work out fine, and my initial hesitation appeared to be an overreaction. The instant feedback was positive and enthusiastic, and off they went with their equipment. I witnessed the immediate show of playfulness. Somehow, the frivolous look of the cameras seemed to encourage the ludicrous behaviour. As Stott (2017) argues, play is understood to be a voluntary, intense and exploratory activity that cedes agency from the artist to the participant. Play appears to offer an optimal means of participation. He criticises artistic productions referred to as play or games as means of organised participation and asks participants to actively engage or even complete works of art through their play. This *ludic participation* forms complex topographies of playgrounds (Stott, 2017). For my participants, there were no implications of dilemma, and they seemed to enjoy their task in the playground of Ärjä island.

As Kullman (2012) suggests, 'thing-power' or object agency necessitates openness and experimentation. Photography-based visual research extends beyond the production and interpretation of images to all kinds of performances, such as running with cameras and using them as play objects. This encompasses sensations and movements of the body as it engages with the material environment (Kullman, 2012, cited in Tuck &Mackenzie, 2015). According to Pink (2011), the act of photography can be grasped as a spatial practice, and the physical environment and places are perceived and experienced through the taking of photographs. Based on my puppetry background, my passion and motivation for action have always conjured up the magic circle of illusions. Immersing oneself into the story and place is an essential feature in puppet theatre, which makes the magic happen. As I went on to earn a master's degree and cultivate a career within cultural management, I have been facilitating different perspectives and perceptions: a gate opener for interactions and encounters. This emotional mapping process seemed to intertwine both interactions and encounters and resonated in the right way. My intuitive artistic solution seemed appropriate so far: the stimulus for allowing participants to reimagine and see the emotional and narrative layer of places and experience the spatial qualities of time.

Once the process had started, I mostly stayed in the roles of silent facilitator and sticky listener. Being a silent facilitator means being present and using all the senses, including intuition, and a sticky listener listens with empathy and intention to understand (Benmergui, 2019). I did not want my own enthusiasm to be an obstacle for the participants to develop, shape and create meaningful contexts of significance to them (Seidler, 2020). Following ABAR guidelines (Jokela, 2019), I did not want to highlight myself as an artist; I wanted to let the participants find their ways to sense the place. I also wanted to allow open-endedness (van Boeckel, 2014), which is also typical of play (Huizinga, 1955; Reed, 2018). Thus, the roles of play facilitator and placemaker were emphasised in the process, even though, as Jung (2016) points out, the boundaries are fuzzy in research that uses visual methods – because researchers and participants have multiple and overlapping roles. I was present and visible but did not actively intervene or guide the process. I just wandered around the island, ready to help with any questions raised by the participants or willing to reflect. The participants were eager to share the places and perspectives they had found, and I had many insightful discussions. The role of the facilitator was emphasised at the beginning of the creative process: to make it all happen. Then, when the actual emotional mapping started, the process was organic and did not require much active attention. For the participants, what they did during the fes-

Figure 7. Camera 79. Gazing at the lake and reflecting on emotions with metaphors. Photo: Unknown participant, 2019.

tival, it was hopefully just an inauguration of awareness to emotions that will abidingly continue in their spirits.

Rolling into the scenery with the task was inspired by the 17th century mystic Angelus Silesius quote: 'You are not in a place, the place is in you' (Howells & McIntosh, 2020). I have been interested in shapeshifting and transforming into something else for as long as I can remember. That object can represent something atypical if you just allow the metamorphosis to happen in your imagination. I also believe that places come to mean something new when you allow yourself to become immersed in the landscape instead of spectating on it from a distance. As Tuan (1977) suggests, what begins as

undifferentiated space becomes a place as we get to know it better and endow it with value. Further, as Poupin (2020) justifies in his artistic work, he seeks to awaken dreams and imagination in each place. Working in a public place means that the landscape occupies a central role and plays its own character. Following the participants in the action of emotional mapping, it seemed like they were actually digging into the affective textures of the place.

At the end of the first phase of the emotional mapping process, on Sunday afternoon, the cameras were collected and sent for development and digitalisation. The participants received a visit card with a link to a survey. Over the following week, 13 replies were gathered in the survey. This number is small compared to the number of returned cameras (82), but the replies were empowering and rewarding to me. Those who both participated and replied seemed to have reached all the dimensions of emotional mapping. They described it as an 'easy, gentle way of participation', 'nice to use film when you have no idea of the end result', 'connection between image and emotion was clarifying' and 'the task shifted my perspective to the island, and I noticed new things'. Based on the observations and feedback alone, while waiting to get the actual material, it seemed that, with the emotional mapping photoplay, the personal narratives had transformed along the process into greater narratives. In analysing this, I followed the table of narratives by Woods (interviewed by Neal, 2015, p. 396).

Deeper Meaning and Insight: Reflecting on the Results by Creating Photomosaics as Map Symbols

After receiving 2,016 usable (not hopelessly under- or overexposed) entries, I divided them into 15 categories. The artistic process followed ABAR guidelines, with the artistic actions playing a role in producing knowledge. The mosaics here were aimed at visualising the participants' perceptions as a collective, not as individuals. My artistic process was intuitive but straightforward, as I surmised that the categories in which the photographs fell were quite obvious. Still, I tried my best to keep in mind Guest's (2016) advice and guarded the reflexivity to ensure that the participants' stories were not overwhelmed by my own. I agree with Kalin (2018) that images offer multiple ways of interpretation through their figurative and representational function, along with their unique and diverse modes of expression in materialising and curating narrative potential. The process continued so that, for each group, I chose one photograph to symbolise and represent the whole group. It was difficult to estimate how much the rainy weather

affected moods and emotions. However, the overall result depicted poetic, deep and indisputably melancholic reflections, even though this was by no means stimulated or spoken. For me, this reflected the atmosphere of the place. The ambience was impressive and touching but forlorn. The magic circle (Stenros, 2014) really seemed to work here.

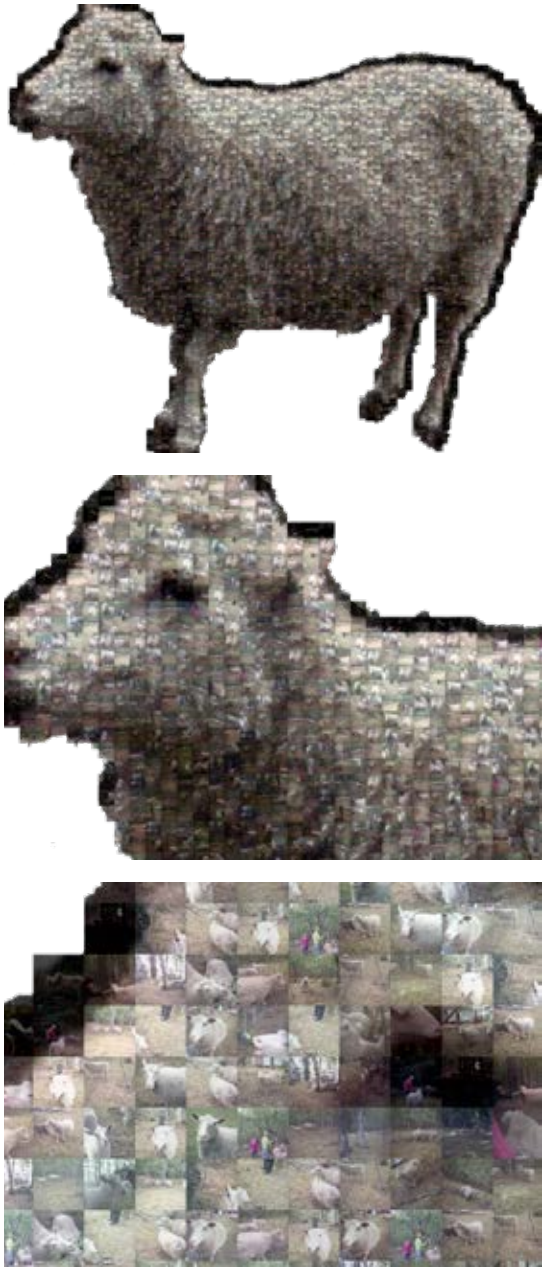
According to Shavit (2018), people conceive of mosaics as works of art because the visual images depicted in them convey abstract ideas and narratives that are grasped either consciously or subconsciously in the quickest, most concise and memorable manner. Often shown in public places, mosaic artworks that operate to construct a narrative and sense of place act (Shavit, 2018). Personally, I have admired mosaics for as long as I can remember. It is fascinating how every piece matters, and you can see the actual result if you look at it from a distance. I am also a great fan of the artist Helen Marhall (n.d.) for her photo mosaic commission in the public realm. For photomosaics, I love the theme of collaboration: It is not only about me and my egoistic feelings.

In the Ärjä emotional mapping process, a collective imagery was created. Emotions, experiences and stories – dressed in the form of photographs – by each individual participant formed a larger overall picture and shared narrative in the form of an emotional map. Each image still existed as such, as its own important story, but instead of a self-centred image narration, like in social media, the focus lay in the shared storytelling manifesting the power of photoplay. The collective imagery expressed how, together, our images mattered, not as individuals: It is not just me; it is us, and this is how we feel. The map portrayed that these emotions were awakened by this place and that these stories were whispered through us during our embodied and visual playing.

Unfolding the Shared Creation of Meaning

The actual mosaics were built so that the rest of the photographs in each group could form those montage-like map symbols. In some of them, I had a very limited number of entries, so the same images were repeated over and over again in order to create the mosaic image. The lesson I learned here was that even though the number of images (2,016 in total) seemed a very good number at the beginning, it was far too limited to create variety in the mosaics. The number of original images should have been at least 10 times larger. I used online mosaic building tools to construct these photomosaics but detected some irritating technical limitations.

The next phase was to emplace these map symbol mosaics on a map. After an archival adventure, I found a map of Oulujärvi from the era of Russian rule, the early 20th centu-

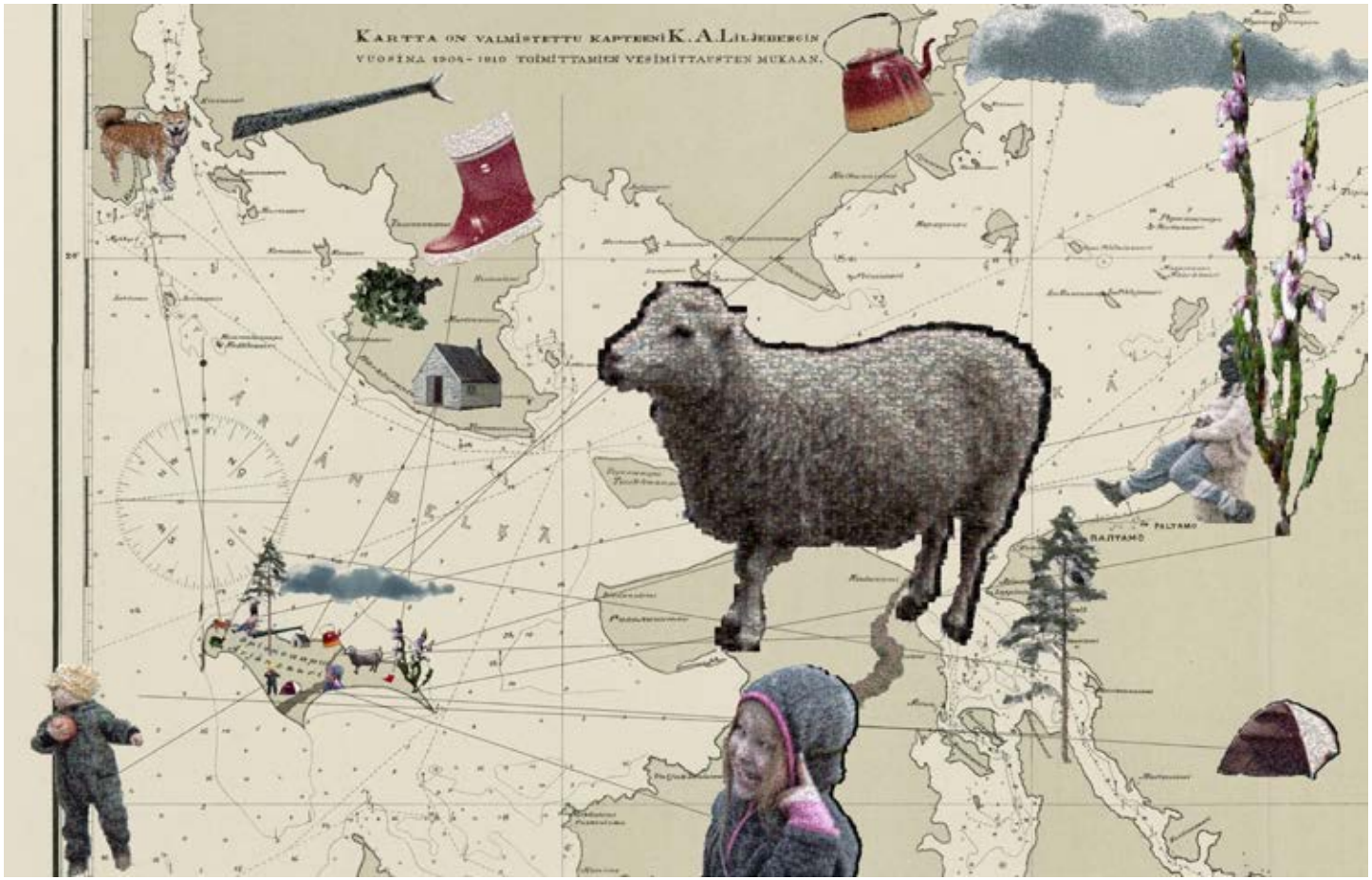


ry. The appearance of the map pleased me; it had the charm and quaint of not being too accurate, leaving space for imagination. As Jacobs (2019) puts it, maps are meant to frame fantasy. Roman (2015) states that creativity in mapmaking emanates from the charge between two opposite energy systems: the individual artist and the world. The end result is the shared participation between the artist and viewer, the inherent symbolisms, and even the underlying subconscious design forces at work in illustrated maps address a deep connection between the brain and creative mapping that is unique in the world of art (Roman, 2015). According to Lyytikäinen and Saarikangas (2013), artistic representations not only reflect or imitate existing conceptions or observed features but also recreate places by inventing and imagining new relationships and conceptions: This is the key to understanding places. They refashion the sphere of our experience by imagining invisible and alternative spaces. Represented landscapes are mindscapes imagining places and spaces from the perspective of the viewer's inscription of meanings and ideologies to places (Lyytikäinen & Saarikangas, 2013).

I inserted the emotional symbols on the more-than-a-century-old map of Ärjä and magnified the symbols around it, enabling the visibility of each image in the montages. The emotions were mapped and established on an actual map – The Ärjä Emotional Map was now ready for viewers.

In printed form, the map symbol mosaics and the whole emotional map were supposed to revisit the Ärjä island in the summer of 2020 for the Ärjä Art Festival. Because of the coronavirus situation, this will be postponed until the summer of 2021, and the participants of the 2019 mapping process will need to wait another year to see what I have created

Figure 8. A detailed close-up of Ärjä *Emotional mosaic* by Nina Luostarinen. A mosaic constructed from all 80 sheep-themed entries. Digital image, Nina Luostarinen, 2019.



from their images. For me, it will be thrilling to see how the emotional mosaics will renegotiate and discuss with the surroundings when they meet again. The result of my artistic work will be the next phase in this cyclic ABAR process. Later on, in the fall of 2021, there will be a public exhibition in Kainuu Museum showing the entity of the emotional map, the map symbols, the mosaic of the emotional images and fragments of emotions in the form of single images. They will be demonstrated in parallel with the documentary images of early days of Ärjä island. Another development cycle of emotional mapping will be exhibited in Art Agenda 2030 (October 2020, in Helsinki) when this method will be used to observe and interpret emotions awakened by the United Nations Declaration of Sustainable Development (STT, 2020).

Figure 9. The emotional map (Nina Luostarinen: Ärjä Emotional Map, digital image, 2019).

Folding up the Map

The Ärjä emotional mapping was one of the last interventions in this quest for art-based playful methods for re-experiencing places. At the time of writing, I can see indicators that the emotional mapping cycles will be plentiful. The previous ABAR cycles developed alongside the current cycle in different stages. Some of them are still in reflective analysis, some in conceptualisations and some finalised in terms of the specifications of the objectives. All of them have influenced the way I want to interact with participants and places, and I believe that, in the future, various combinations will emerge.

Figure 10. Camera 77. Witnessing the narrative layers of the place and ancient stories becoming perceivable: Goblin-like creature wandering on a path. Photo: Unknown participant, 2019.

For me, the expeditions into places are the essence of the feeling of being alive. In that spirit, Ärjä was a compelling encounter, and the place itself whispered something unique. Ärjä will be one of those places that, once visited, can never be forgotten. It seems that having the first experiment of emotional mapping on this island was another confirmation of the existence of serendipity. Interaction and immersion with the place were so natural and unforced.

The emotional mapping seemed to function adequately for its intended purpose: The participants were able to unveil characteristics and tints of the island. The captured imagery depicted miraculously well the sensations and emotions I experienced during my visit. For me, it was the most empowering process, which made me increase trust in artistic intuition and serendipity as well as rely on my visions as a facilitator and play-maker. Moreover, as an artist, the first feedback received from the emotional map with the mosaic and the ease of finding a place for the exhibition space strengthened my trust that I could create something meaningful. The aspect of visual demonstration as shared, instead of individual, emotions was one of the most significant findings for me. As a method, emotional mapping proved its development potential as a generator of affection and empathy for places.

The overall aspiration was to enable people to observe the additional qualities and 'imponderabilia' of a place: the poetical, narrative and emotional. From the perspective of the ABAR pla(y)cemaker, it seems obvious that the confluence of art, place and play can result in a creative blend of placemaking, playmaking and mapmaking. Emotional mapping can work as a method of emotional bonding. Once you become aware of the diversity of your emotions regarding a place, you can start building a relationship with it.

References

Benmergui, R. (2019). Making the invisible visible: Evocative visual storytelling & visceral liminal documentation of process & sense-making. In R. Bemergui, A. Owens, & A. Pässilä (Eds.), *Beyond text: Arts-based methods for research, assessment and evaluation* (pp. 31–41). Beyond Text Partnership EU.

van Boeckel, J. (2014). *At the heart of art and earth: an exploration of practices in arts-based environmental education* (Aalto University publication series doctoral dissertations; 73/2013). Aalto University, Helsinki. http://urn.fi/URN:ISBN:978-952-60-5146-8

von Bonsdorff, P. (2007). Maisema toiminnan ja kuvittelun tilana [Landscape as a space for action and imagination]. In Y. Sepänmaa, L. Heikkilä-Palo, V. Kaukio, K. Nieminen, T. Nuopponen, & L. Anttila (Eds.), *Maiseman kanssa kasvokkain* [Face to face with landscape] (pp. 33–49). Maahenki.

von Bonsdorff, P. (2017). Aesthetic imagination and animate peace. In C. Kersten, K.-G. Giesen, & L. Škof (Eds.), *The poesis of peace: Narratives, cultures, and philosophies* (pp. 41–56). Routledge.

Brantner, C. (2018). New visualities of space and place: Mapping theories, concepts and methodology of visual communication research on locative media and geomedia. *Westminster Papers in Communication and Culture, 13*(2), 14–30.

Burke, G., Lasczik Cutcher, A., Peterken, C., & Potts, M. (2017). Moments of (aha!) walking and encounter: Fluid intersections with place. *International Journal of Education Through Art, 13*(1), 111–122. https://doi.org/10.1386/eta.13.1.111_7

Carlsson, T. (2020). Storytelling as a nature interpretation method. In E. Sandberg, T. Rohde, R. Nykänen, & N. Cserhalmi (Eds.), *Nature interpretation in the Nordic countries: A book about experiences, learning, reflection and participation when people and nature meet* (pp. 121–124). Nordic Council of Ministers. https://doi.org/10.6027/nord2020-005

Cserhalmi, N. (2020). Everything around us is the result of its own history. In E. Sandberg, T. Rohde, R. Nykänen, & N. Cserhalmi (Eds.), *Nature interpretation in the Nordic countries: A book about experiences, learning, reflection and participation when people and nature meet* (pp. 43–45). Nordic Council of Ministers. https://doi.org/10.6027/nord2020-005

Deterding, S. (2017). Alibis for adult play: A Goffmanian account of escaping embarrassment in adult play. *Games and Culture*. Advance online publication. https://doi.org/10.1177/1555412017721086

Frosham, D. (2015). *Mapping beyond cartography: The experimental maps of artists working with locative media* (Unpublished doctoral thesis). University of Exeter. http://hdl.handle.net/10871/19185

Garrod, B. (2008). Exploring place perception a photo-based analysis. *Annals of Tourism Research, 35*, 381–401. https://doi.org/10.1016/j.annals.2007.09.004

Guest, C. (2016). Cultivating reflexive research practice when using participants' photographs as research data. In D. Warr, M. Guillemin, S. Cox, & J. Waycott (Eds.), *Ethics and visual research methods: Theory, methodology, and practice* (pp. 75–87). Palgrave Macmillan. https://doi.org/10.1057/978-1-137-54305-9

Ham, S. H. (2013). Interpretation: *Making a difference on purpose*. Fulcrum.

Harmon, K. (2009). *The map as art: Contemporary artists explore cartography*. Princeton University Press.

Heljakka, K. (2013). *Principles of adult play(fulness) in contemporary toy cultures: From wow to flow to glow*. Aalto University, School of Arts, Design and Architecture.

Heljakka, K. (2015). Toys as tools for skill-building and creativity in adult Life. Se*minar.net 11*(2).

Hjort, L. (2015). Narratives of ambient play: Camera phone practices in urban cartographies. In M. Foth, M. Brynskov, & T. Ojala (Eds.), *Citizen's right to the digital city: Urban interfaces, activism, and placemaking* (pp. 23–35). Springer

Howells, E., & McIntosh, M. A. (2020). *The Oxford handbook of mystical theology*. Oxford University Press.

Huizinga, J. (1955). *Homo Ludens: A study of the play-element in culture*. Beacon Press.

Jacobs, F. (2019). *Why the south of Westeros is the north of Ireland*. Big Thing. https://bigthink.com/strange-maps/westeros-map

Jokela, T. (2019). Arts–based action research in the north. In G. W. Noblit. (ed.) *Oxford research encyclopedia of education*. Oxford University Press. https://doi.org/10.1093/acrefore/9780190264093.013.522

Jokela, T., Huhmarniemi M., & Hiltunen, M. (2019). Art-based action research: Participatory art education research for the north. In A. Sinner, R. L. Irwin, & Adams, J. (Eds.). *Provoking the field: International perspectives on visual arts PhDs in education*. Intellect.

Juel Larsen, L. (2015). Play and space: Towards a formal definition of play. *International Journal of Play, 4*(2), 175–189. https:/doi.org/10.1080/21594937.2015.1060567

Jung, H. (2016). Fuzzy boundaries when using "mental mapping" methods to trace the experiences of immigrant women in South Korea. In D. Warr, M. Guillemin, S. Cox, & J. Waycott (Eds.), *Ethics and visual research methods: Theory, methodology, and practice* (pp. 31–44). Palgrave Macmillan. https://doi.org/10.1057/978-1-137-54305-9

Kalin, N. M. (2018). Entries into visually provoking: Dissertations in art education. In A. Sinner, R. L. Irwin, & T. Jokela (Eds.). *Visually provoking: Dissertations in art education* (pp. 10–17). Lapland University Press.

Kettunen, A., & Sarkkinen, S. (2020). Citizenship for sustainability. In E. Sandberg, T. Rohde, R. Nykänen, & N. Cserhalmi (Eds.), *Nature interpretation in the Nordic countries: A book about experiences, learning, reflection and participation when people and nature meet* (pp. 54–63). Nordic Council of Ministers. https://doi.org/10.6027/nord2020-005

Koskela, A. (2017). *Ärjä 2024 Ärjänsaaren kehittämisohjelma 2018–2024* [Ärjä 2024. The development programme of the Ärjä island for 2018–2024]. Metsähallitus.

Lugmayr, A., Sutinen, E., Suhonen, J., Sedano, C., Hlavacs, H., & Montero, C. (2017). Serious storytelling – A first definition and review. *Multimedia Tools and Applications, 76*(14), 15707–15733. https://doi.org/10.1007/s11042-016-3865-5

Luostarinen, N., & Hautio, M. (2019). Play(e)scapes: Stimulation of adult play through art-based action. *The International Journal of New Media, Technology and the Arts, 14*(3), 25–52. https://doi.org/10.18848/2326-9987/CGP/v14i03/25-52

Luostarinen, N. (2019a). Idea, joka ei suostu kuolemaan (An idea that refuses to die). In M. Äärynen (Ed.), *Väläyksiä Humakista III* (Flashes from Humak III) (pp. 85–87) Humanistinen ammattikorkeakoulu. http://urn.fi/URN:NBN:fi-fe2019123149515

Luostarinen N. (2019b). Ambiguity of (traffic) signs. *The Journal of Play in Adulthood, 1*(1). https://doi.org/10.5920/jpa.632

Luostarinen, N., Sirkkilä, H., & Lehto, K. (2018). Paikanpiiriin astumisia keholliset ja taideperustaiset menetelmät kulttuurihistorialliseen paikkaan kiinnittymisen keinoina (Kuusiston Piispanlinnan raunioilla) [Stepping into the realm of place – Corporeal and arts-based methods as means of attachment to a place of cultural-historical significance] (at the Kuusisto episcopal castle ruins). In N. Luostarinen (Ed.), *Taiteen valaisemia paikkoja* [Places illuminated by light]. Humanistinen ammattikorkeakoulu. http://urn.fi/URN:ISBN:978-952-456-313-0

Luukkonen, I. (2009). Kaksi matkaa - Valokuvan poeettisuudesta ja suoruudesta [Two journeys – Of the poetry and straightness in photography]. In T. Erävaara & I. Tanskanen (Eds.), *Välissä: valokuvat ymmärtämisen välineinä* [In between: Photographs as means for understanding] (pp. 119–139). Turun ammattikorkeakoulu.

Lyytikäinen, P., & Saarikangas, K. (2013). Introduction: Imagining spaces and places. In S. Isomaa, P. Lyytikäinen, & K. Saarikangas, K. (Eds.), *Imagining spaces and places.* Cambridge Scholars Press.

Marshall, H. (2020) Artist's Webpages. https://www.helenmarshall.co.uk/about/

Marks, M., Chandler, L., & Baldwin, C. (2016). Re-imagining the environment: Using an environmental art festival to encourage pro-environmental behaviour and a sense of place. *Local Environment, 21*(3), 310–329. https://doi.org/10.1080/13549839.2014.958984

McManimon, S. K. (2018). Canons and contestation, fairy tales and trickster tales: Educational storytelling as intellectual work. *Storytelling, Self, Society, 14*(2), 212–232.

Naukkarinen, I. (2018). Tarinoiden saari – Ärjän Taidefestivaalin rönsyjä [Island of stories - Stolons of Ärjä Art Festival]. *Elonkehä, 3*(18). http://www.elonkeha.com/2018/10/05/tarinoiden-saari-arjan-taidefestivaalin-ronsyja/

Neal, L. (2015). *Playing for time – Making art as if the world mattered.* Oberon Books.

Nykänen, R. (2020). Nature interpretation as a part of nature conservation. In E. Sandberg, T. Rohde, R. Nykänen, & N. Cserhalmi (Eds.), *Nature interpretation in the Nordic countries: A book about experiences, learning, reflection and participation when people and nature meet* (pp. 36–42). Nordic Council of Ministers. https://doi.org/10.6027/nord2020-005

Pánek, B., & Benediktsson, K. (2017). Emotional mapping and its participatory potential: Opinions about cycling conditions in Reykjavík, Iceland. *Cities*, *61*, 65–73. https://doi.org/10.1016/j.cities.2016.11.005

Playful Mapping Collective. (2016). *Playful mapping in the digital age*. Institute of Network Cultures.

Pink, S. (2011). Amateur photographic practice, collective representation and the constitution of place. *Visual Studies, 26*(2), 92–101. https://doi.org/10.1080/1472586X.2011.571884

Poupin, A. (2020). La Folie Kilometre. In *IN SITU, the European platform for artistic creation in public space.* http://www.in-situ.info/public_data/activities/1586505355/insituact-web.pdf

Reed, C. (2018). Open-ended: Public spaces as complex adaptive systems. In B. C. Ivers (Ed.), *Staging urban landscapes: The activation and curation of flexible public spaces* (pp. 46–53). Birkhäuser. https://doi.org/10.1515/9783035610468-046

Roman, J. (2015). *The art of illustrated maps: A complete guide to creative mapmaking's history, process, and inspiration*. How Books.

Sandberg, E. (2020). Nature interpretation – Context, purpose and method. In E. Sandberg, T. Rohde, R. Nykänen, & N. Cserhalmi (Eds.), *Nature interpretation in the Nordic countries: A book about experiences, learning, reflection and participation when people and nature meet* (pp. 64–81). Nordic Council of Ministers. https://doi.org/10.6027/nord2020-005

Shavit, Z. (2018). Mosaic art in modern Israel and the construction of a sense of place. *Nations and Nationalism, 24*(3), 792–816. https://doi.org/10.1111/nana.12382

Sieppi, J. (2017). Government buys naturally diverse historical island from forestry giant. *YleUutiset*. https://yle.fi/uutiset/osasto/news/government_buys_naturally_diverse_historical_island_from_forestry_giant/9449836

Stenros, J. (2014). In defence of a magic circle: The social and mental boundaries of play. *ToDiGRA, 1*(2). https://doi.org/10.26503/todigra.v1i2.10

Stott, T. (2017). *Play and participation in contemporary arts practices.* Routledge.

STT. (2020). Agenda – Art 2030 teossarja avaa YK:n Kestävän kehityksen tavoiteohjelmaa taiteen ja tieteen keinoin syyskuussa nyt ensimmäistä kertaa (Agenda – Art 2030 series opens UN Sustainable Development Goals through art and science for the first time in September). STT. https://www.sttinfo.fi/tiedote/agenda---art-2030-teossarja-avaa-ykn-kestavan-kehityksen-tavoiteohjelmaa-taiteen-ja-tieteen-keinoin-syyskuussa-nyt-ensimmaista-kertaa?publisherId=69817692&releaseId=69880077

Tuan, Y-F. (1977). *Space and place: The perspective of experience*. University of Minnesota Press.

Tuck, E., & McKenzie, M. (2015). Methods of critical place inquiry. In E. Tuck & M. McKenzie (Eds.), *Place in research*: *Theory, methodology, and methods* (pp. 97–125). Routledge.

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The work of a diverse group of authors; researchers, scholars, artists and educators from Canada, Finland, Norway, Russia (Komi, Yakutia, Khanty-Masky), UK and USA (Alaska) is presented in this book. The shared focus is encapsulated in the title of this volume, the seventh in the *Relate North* series: Tradition and Innovation in Art and Design Education. The multifaceted notions of 'tradition' and 'innovation' especially in the rapidly changing environmental and sociocultural circumstances in the different countries and regions across the circumpolar North provide the reader with a rich tapestry of accounts of applied practice and context-sensitive research. Although principally concerned with research and knowledge exchange in art and design education in the North and the Arctic, the contributors investigate issues and topics that may have wider interest, for example, the sociocultural and political dimensions of living in rural places and urban settings in remote and peripheral areas in other parts of the world.

Relate North is the title given to several interconnected initiatives that form a key part of the Arctic Sustainable Arts and Design (ASAD) network: Research and development projects, academic exchange programmes, symposia and exhibitions. The ASAD network, *Relate North* events and publications seek to promote original ways of rethinking the status of contemporary art, design, craft and new practices in art education. In November 2019, the first-ever *Relate North* symposium and exhibition to take place in the Russian Federation was hosted by the Pitirim Sorokin Syktyvkar State University in the Komi Republic. The title of this book Tradition and Innovation in Art and Design Education was also the title of those events.

This book consists of eleven chapters which were selected after an open call across the ASAD network for chapters and visual essays. Submissions were subjected to double-blind peer review, and the book you are now reading is the result of that process.

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