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Exploring Three-Dimensional Technologies for Repatriation of Indigenous Cultural Heritage

The Case of the RUOKTOT Exhibition

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Exploring Three-Dimensional Technologies for Repatriation of Indigenous Cultural Heritage:

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Foreword

I acknowledge the various Sámi source communities as the rightful safeguarders of Sámi cultural heritage and forerunners of community-based heritage management. The objective of this research is to raise awareness regarding digitization of Indigenous Sámi cultural heritage, care for Indigenous Sámi cultural heritage, and heritage management. This research emphasizes Indigenous cultural concepts and cultural sensitivity, and aims to spark conversations about ethical considerations when digitizing Sámi cultural heritage originating from Sápmi—emphasis on sacred cultural heritage with high spiritual value. Matters of digitization of Indigenous cultural heritage are context specific and therefore consultation with their respective source communities or other relevant sources directly is recommended and appreciated before taking action.

Due to the sensitivity of reburial ceremonies of human remains that are held in museums and repositories, the focus of this master's thesis is strictly on cultural heritage. While I have mentioned repatriation of human remains in this work, it has been done without deeper analysis—it needs its own dedicated research attention and calls for extremely cautious ethical and culturally sustainable considerations.

Acknowledgements

While my name is associated with this master's thesis, the research outcome was achieved through storytelling, discussions, and collaboration. I want to extend my sincere gratitude to the core of this research project, to the research partners who kindly dedicated time and effort to participate. Without your willingness to share your knowledge and expertise, this master's thesis would not have materialized—*giitu!*

I would like to express my deepest appreciation to Dr. Camilla Brattland, who has been a supportive supervisor and from whom I have gained invaluable guidance and encouragement. Thank you to my colleagues Dr. Jelena Porsanger and Anne May Olli—their generous contribution to my higher education has been nothing short of vital. Special thanks to Dr. Matthew Magnani, Alicia Walsh, Dr. Gabriel Bodard, Dr. Eric Hollinger and Dr. Gro Ween—they have graciously pointed out relevant research and offered their insights on enhancing the chapters and refining the technical terminology related to 3D technologies within this master's thesis. Thank you to my dear friend and fellow museum colleague Taija Aikio for proofreading assistance—*takkâ!* Additionally, I'd like to extend my thanks to Yolanda for her inspirational thinking and advice, from one handicraft enthusiast to another.

I could not have conducted this research without a strong family and community support. I want to express my thanks to my sisters for the joy of sisterhood—in their support and shared laughter, I have found motivation and resilience that have guided me over these years. I am grateful to my parents for their support in every facet of my life. Without them, this journey would have been inconceivable. Finally, I extend my heartfelt thanks to my *goaski*, my auntie Raili. From the very beginning, she has encouraged me to carry forward our traditions and language.

This thesis was refined through opportunities to present and discuss at: Saemien Sijte; Seminar on Ethical Challeneges on Management of Indigenous Cultural Heritage, University of London; 3D Summer School, Smithsonian's National Museum of the American Indian; UArctic Thematic Network on Digital North – Three-Dimensional Technologies and Arctic Education Research Trip.

Sof'Elle Beaivvi Paula
Oulu, May 2024

Abstract

This master's thesis explores the integration of three-dimensional (3D) technologies in RUOKTOT exhibition production in Sápmi, focusing on the reciprocal relationship between museums, 3D technologies, community, and heritage—narrated through the repatriation process of the famous Sámi drum, the goavddis of Paul-Ánde, widely known as Anders Poulsen, and digitization of old Sámi drums. The RUOKTOT exhibition was a 50th anniversary exhibition for Sámiid Vuorká-Dávvirat/The Sámi Museum in Karasjok (SVD). The exhibition was produced by SVD and opened in 2022. This exhibition focused on the multifaceted nature of the return of sacred Sámi drums, as valuable pieces of Sámi cultural heritage, Indigenous religion, historical context of sacred Sámi drums, the repatriation of the goavddis, and display of 3D digital representations of old Sámi drums.

This research investigates foundational aspects of creating 3D digital representations of Sámi cultural heritage, including matters of access to and control over material culture and digital representations, and ethical considerations in the digitization processes of Indigenous cultural heritage. This work examines the applicability of 3D technologies in Sápmi in relation to repatriation context and critically analyses the politics inherent in heritage management. This project emphasizes cultural protocols surrounding digitization of Indigenous cultural heritage—a methodology often overlooked in existing guidelines. Through interviews and focus group discussions with 3D technology experts, heritage and museum professionals, valuable insights were gained into the management of Sámi cultural heritage, both locally and internationally, as well as the creation of 3D digital representations of old Sámi drums.

Keywords: digitization, three-dimensional, exhibition, repatriation, cultural heritage, Indigenous, Sápmi, goavddis

Abbreviations

CARE	Collective Benefit, Authority to Control, Responsibility, and Ethics
DDT	Dichlorodiphenyltrichloroethane
DPO	Digitization Program Office
EMRIP	United Nations Expert Mechanism on the Rights of Indigenous Peoples
ENB	Enestående National Betydning
GIDA	Global Indigenous Data Alliance
ICOM	International Council of Museums
ICS	Institute of Classical Studies
LiDAR	Light detection and ranging
NAGPRA	Native American Graves Protection and Repatriation Act
NM	National Museum of Denmark/Nationalmuseet
NMNH	Smithsonian's National Museum of Natural History
OHCHR	Office of the United Nations High Commissioner for Human Rights
RDCC	Royal Danish Cabinet of Curiosities/Det Kongelige Kunstkammer
RDM	RiddoDuottarMuseat
RDM-SVD	RiddoDuottarMuseat–Sámiid Vuorká-Dávvirat
SD	Sámediggi/The Sámi Parliament in Norway
SVD	Sámiid Vuorká-Dávvirat/The Sámi Museum in Karasjok
UN	United Nations
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNHRC	United Nations Human Rights Commissioner
3D	Three-dimensional

2D	Two-dimensional

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1 Introduction

1.1 Topic

The 21st century underscores transformative events in the domain of Indigenous cultural heritage. It is an era of the homecoming of Indigenous cultural heritage globally, in English known as repatriation.[1] While Indigenous heritage as museum objects and artifacts in the last decade has been made digitally available in online museum catalogues, repatriated and dialogical initiatives have brought new uses of digital technologies, such as 3D imaging and modeling processes.

Generally speaking, the rapidly growing field of 3D technology spans various disciplines, such as gaming, construction, archaeology, design, and architecture. In the 2000s, 3D technologies have become somewhat ubiquitous also in the field of cultural heritage management in Indigenous contexts, particularly in North America, where 3D heritage preservation of museum objects and other materials has emerged as a means of digitally and physically preserving Indigenous cultural heritage.

The particular example I am referring to, started in 2005, when "clan leaders from the Raven moiety placed *Kéet S'aaxw*[2] on the head of the Dakl'aweidí[3] clan leader, Mark Jacobs, Jr., in a Tlingit ceremony held at Sitka, Alaska" (Smithsonian Magazine, 2017). After community consultations with the clan, "the Smithsonian National Museum of Natural History (NMNH) was authorized to create a 3D digital representation of the original Kéet S'aaxw, while the original Kéet S'aaxw was repatriated to the clan" (Hollinger et al., 2013, p. 204). NMNH utilized "laser scanning technology to replicate the original Kéet S'aaxw" (ibid.). They utilized the "3D model in an exhibition designed to inform the public about the Tlingit crest artifact and its repatriation narrative" (ibid.).

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[1] Some different concepts in the meaning of repatriation: restitution (employed in Germany), utimut (employed in Greenland and Denmark), tilbagelevering (employed in Denmark), udskillelse (employed in Denmark), tilbakelevering (employed in Norway), repatriação (employed in Brazil), and rematriation (a concept employed in Indigenous contexts).

[2] Killer Whale clan crest hat.

[3] Killer Whale.

In the Sámi context, digitization of cultural heritage within museum contexts is a relatively new domain. In Sápmi[4] such practices emerged in Sámi museum contexts in the mid-2010s and one notable project focused on digitizing the *goavddis*[5] of Paul-Ánde.[6] The goavddis was digitized at Sámiid Vuorká-Dávvirat[7] (SVD) in 2020 by using structured-light 3D scanners. Additionally, the legal ownership of the original goavddis was transferred to SVD from the National Museum of Denmark/Nationalmuseet (NM) in 2022.

The digitization processes of repatriated Indigenous cultural heritage represent a shift in both museum and heritage practices. As we move further into the 21st century, Indigenous museum institutions, repositories, and communities utilize diverse methods of 3D technologies, highlighting the potential of digitization in the context of heritage management. Doing so, Indigenous museum institutions bear in mind that such digitization projects call for ethical considerations.

1.2 Research Question

This research project was sparked in 2020 when I first participated in a 3D imaging workshop arranged by my current workplace, SVD. Prior to the workshop, the SVD staff had chosen a variety of material from the museum's collections to undergo the 3D imaging process, including the goavddis of Paul-Ánde. The workshop aimed to introduce 3D imaging technology to cultural repositories and explore the method's potential, with intricate and sensitive cultural heritage originating from Sápmi. At that point, the legal ownership of the goavddis remained at NM.

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[4] The Sámi people are Indigenous peoples who inhabit the northern regions of Europe, primarily across Norway, Sweden, Finland, and parts of Russia. These areas constitute the Sámi heartlands, called Sápmi in North Sámi.

[5] North Sámi term for a bowl-shaped drum, consisting of a large hollowed-out growth found on pine trees (Sámiid Vuorká-Dávvirat, 2022).

[6] In legal documentation and literature, Paul-Ánde is also identified by the following names: Poala Ánde, Poala-Ánte, Pávval Ánde, Pål-Ánde, Bávval-Ánde, and Anders Poulsen.

[7] Sámiid Vuorká-Dávvirat/The Sámi Museum in Karasjok is a Sámi-run and community-based museum in Norway. Established in 1972 "as the first Sámi cultural institution in Norway, SVD houses over 5,000 artifacts." SVD houses "the largest museum collection representing Sámi cultural history in Norway" (RiddoDuottarMuseat, 2023).

Since 2020 my research has changed focus, but the main point has remained: the exploration of 3D technologies within Indigenous cultural heritage, specifically within a museum context. Through my work at SVD, I have been involved in cataloguing of existing Sámi material culture in museum institutions, which led me to do research on this field. Vast amount of Sámi cultural heritage exists also outside of Sápmi (Harlin & Olli, 2014), scattered around locations, for example in Germany, Italy, France, the Nordic countries, and North America. My motivation to conduct this research topic rose from a desire to investigate how 3D technologies could be employed to improve the access and management of distant cultural heritage originating from Sápmi. This topic is relevant, due to the Sámi cultural heritage situated away from the place of origin and the multitude of ongoing efforts for repatriation across cultures.

In this master's thesis, I explore the impact of 3D technologies on access to and control over Sámi cultural heritage. The application of 3D technology was facilitated by SVD. The specific project that I am investigating involve 3D digital representations of old Sámi drums exhibited at the RUOKTOT[8] exhibition at SVD, 12.04.2022-07.09.2023.

In North America, 3D technologies have been extensively researched in the context of First Nations communities. For example, one question is how 3D technologies influence the management of Indigenous cultural heritage, which has led to the establishment of practices such as 3D heritage preservation (Sturtevant et al., 2022). This master's thesis aims to investigate how the growing field of 3D technology affects the access of SVD to cultural heritage originating from Sápmi, as well as its control over it. The context of this master's thesis centers around the integration and use of 3D technology within the RUOKTOT exhibition. I examine the impacts of 3D technology, specifically through the display of 3D digital representations of old Sámi drums. These digitized Sámi drums, exhibited at the RUOKTOT exhibition as 3D digital representations, contribute to digital heritage. This led me to propose the following research question:

[8] The 50th anniversary exhibition of SVD: RUOKTOT – Sámi rumbbuid máhcaheapmi – Tilbakeføring av samiske trommer – The Return of the Sámi Drums. Produced by SVD in 2022.

- To what extent does the integration of 3D digital representations of old Sámi drums within the RUOKTOT exhibition serve as a form of repatriation in a Sámi context: How can 3D technologies improve access to and control over cultural heritage?

I aim to explore this question through two main lenses, focusing on 1) access to cultural heritage and 2) control over it, focusing specifically on the digitized old Sámi drums. By examining access and control over these 3D digital representations within the RUOKTOT exhibition production, I aim to contribute to understanding how digital innovations can impact repatriation efforts of Indigenous cultural heritage. Additionally, I approach the topic from international and national legislation, concerning the management of Indigenous cultural heritage.

I examine 3D technology, such as different 3D imaging and modeling methods, asking if these are potential solution to repatriation, as alternatives to transfer of the original cultural heritage material. I approach these questions by investigating international and national legislation, concerning the management of Indigenous cultural heritage, questioning the potential implications for heritage management and community involvement. Also, addressing ethical guidelines associated with digitization processes of Indigenous cultural heritage. While I am mainly concerned with access and control over cultural heritage material in Sápmi, the research touches on matters such as socio-cultural and political dimensions of repatriating material culture of significant value to source communities, embracing cultural concepts and values, and community-based approaches.

The purpose of this research is not to point accusatory fingers, but rather constructively examine the current state and causes of Sámi cultural heritage of significant value to the source community, find potential solutions and amplify perspectives that can develop domain of heritage management in a more just and holistic manner.

1.3 Relevance

The scarcity of research related to 3D technologies and its synergies within Indigenous communities, emphasis on Sámi communities, has resulted in few publications. This makes a clear need for research that not only explores the variety and complexity of 3D technologies, but its applicability in the context of Sámi museums regarding cultural heritage.

Virtanen et al. (2021) cite Smith (2012), stating that "a precondition of Indigenous Studies is that Indigenous voices, concepts, perspectives, and interests are the main emphasis or basis" (Smith, 2012, as cited in Virtanen et al., 2021, p. 22). The need "is to draw from ideas that scholars in Indigenous Studies have presented and to focus on local Indigenous contexts" (Virtanen et al., 2021, p. 19). Therefore, this research employs cultural concepts with their respective linguistic (see Chapter 1.6).

Topics related to reclaiming ownership over cultural artifacts and heritage objects and repatriation within Indigenous Sámi context have gained momentum throughout the 20th century. Repatriation within global Indigenous contexts have been addressed for decades and Indigenous material culture is being returned to source communities of descent after being stored away for centuries in mainstream institutions and repositories. However, 3D technologies, such as 3D imaging and modeling methods are quite new in Sámi context. Therefore, this research project has some potential to make an early contribution to how digitization of Sámi cultural heritage is managed and carried out in Sápmi.

Despite the growing research on repatriation of Indigenous material culture, there is an ongoing need to discuss reciprocity of material culture, cultural concepts, and communities, where the voice of the community is raised and brought into academic and scholarly literature. In my view, one of the relevancies of this research is in the use of North Sámi linguistic and cultural concepts. Since starting my research journey, the lack of holistic approach to management and preservation of Sámi cultural heritage on a national level, has been of concern. Therefore, the aim of this thesis is to produce research that serves as a knowledge-sharing space to global audience—to make Sámi cultural values relevant within the museum field.

1.4 Negotiating the Dual Positionality as a North Sámi Employee and as a Researcher

The case study presented in this master's thesis was built from various parts, such as my own experiences as both an employee and having a researcher role as a master's student at SVD. These experiences involved conducting focus group discussions and interviews with some of my colleagues from SVD.

One of the drawbacks being so close to the case as a researcher in my own workplace, is the possible effect on reliability of findings. Therefore, I have employed tools to distance myself

from the research topic. This was achieved through interviews and focus group discussions, to create an academic distance to colleagues as research partners.

As a North Sámi community member and a scholar, I am coming from a specific social and cultural context. I acknowledge my belonging to particular discourses regarding Sámi culture that are present in this research project. Even though I was born and raised on the Finnish side of Sápmi, my family history stretches all the way back to Lágesvuotna[9], Guovdageaidnu[10], and more recently, Kárášjohka.[11] The state borders never managed to segregate our family ties while family members living on both sides of the border.

SVD is part of this master's thesis case study, as the facilitator and "mediator" of the RUOKTOT exhibition to the local Sámi community (see Isaac, 2007). As a conservator at SVD with a focus on the material science of Sámi methods related to a variety of artifacts and other material, my interest and admiration for Sámi material culture made of organic materials has increased drastically. Additionally, my professional work consists of creating 3D and 2D (two-dimensional) digital representations and illustrations of cultural artifacts and other material. Taking all these aspects into consideration, one could argue that my research qualifies as activist research, in the meaning of my "endemic point of view" as Hale (2001) highlights, due to my "empirical knowledge of the research topic and theoretical understanding that would otherwise be difficult to achieve" (p. 13). I do acknowledge that this research project identifies with some of the principles of activist research, for example "carrying out, at each phase from conception through dissemination, in direct cooperation with an organized collective of people who themselves are subject to these conditions" (Hale, 2001, p. 13). While this research does not revolve around the methods of activist research to full capacity, one might argue that this master's thesis adheres to some principles of activist research. Additionally, there is no denying the fact that I am active in supporting efforts and inputs originating from my community.

Drugge (2016) highlights that "one of the most discussed theme in the domains of Indigenous research is the issue of research ethics", and the "need for research to be more strongly related to and taking its departure from Sámi needs and interest" (p. 10). However, Olsen (2016)

[9] In Norwegian Laksefjorden.

[10] In Norwegian Kautokeino.

[11] In Norwegian Karasjok.

states that “the reproduction of homogeneity should be avoided” and that “individual Indigenous voices do not automatically echo the voice of the group” (p. 11). I do not represent the views and voices of the whole community, but I do represent a North Sámi scholar conducting research in collaboration within my community, and considering one’s positionality as a researcher, at the community or not, includes several questions. These “reflections on the researcher’s situatedness also include an understanding of what are the scientific concepts that one may take for granted in research” (Virtanen et al., 2021, p. 18).

I consider myself as an insider and that my close relationship to the matters discussed in this thesis allows me to give in-depth insights, but I have challenged myself to consider my role also from an outsider perspective (Olsen, 2016), in order to examine the variety of perspectives. I am not a representative of Sámi knowledge in its totality, but my insider status as a North Sámi community member and my position as a conservator at SVD gives me a unique access to specific knowledge. However, bearing in mind that even as an insider of the community, I do have knowledge gaps about specific Sámi ritual practices, knowledge, and material culture related to it.

As I have written about the work and research undertaken at SVD, I wanted to acknowledge and highlight some possible challenges regarding my position as a North Sámi scholar conducting research in my community and workplace. Being familiar with the research topic, there is an underlying risk that I might overlook some crucial points and make assumptions during the analysis of data. Therefore, by employing thematic analysis, it was necessary to establish clear themes to ensure that I didn’t miss any crucial points.

While being an insider poses certain challenges, it has some advantages also. As a community member who is aware of cultural rights, responsibilities, and sensitivities, I can identify esoteric[12] material and knowledge revolving around old Sámi drums. However, only to the extent in the sphere of my personal and collective experiences within my community. Research partners with more experience working with esoteric material guided me further if I was about to share something that should not be shared with the public audience.

[12] Sensitive or secret knowledge that is not public—it is only accessible to a select few individuals or groups (Isaac, 2007).

1.5 Previous Research: Defining the Research Gap

I have made literature selections based on subjects in relation to Sámi cultural heritage, specifically old Sámi drums, Sámi museums, community-inititated repatriation processes of Indigenous Sámi cultural heritage, the creation of 3D digital representations of Indigenous Sámi cultural heritage, and the history of the art of duplication.

Apart from publications from Matthew Magnani and Natalia Magnani, Jelena Porsanger, Anni Guttorm, and Eric Hollinger, focusing on 3D technologies in Sámi context, there appears to be no other literature on the reciprocity of Sámi museums and communities and 3D technologies. Due to the scarcity of research on this matter in Sápmi, I had to look into literature and research overseas. 3D technologies have been extensively researched, especially in North America, with focus on its effects on First Nations communities and examined how 3D technologies have influenced the management of Indigenous cultural heritage, from community-based consultations to communities actually leading the digitization processes of the desired material. In their article titled "Three-dimensional, Community-based Heritage Management of Indigenous Museum Collections: Archaeological Ethnography, Revitalization, and Repatriation at the Sámi Museum Siida", published in the *Journal of Cultural Heritage* in 2018, Matthew Magnani, Anni Guttorm, and Natalia Magnani explore the matter of community engagement related to the digitization of Sámi cultural heritage on the Finnish side of Sápmi. They also discuss accessibility and ownership of Sámi cultural heritage.

In relation to 3D technologies and Indigenous communities, relatively lot of research has emereged since the early 2000s in the North American contexts with regard to First Nations, exploring various aspects of heritage preservation and 3D technologies, cultural revitalization, and community-based consultations. Eric Hollinger, a tribal liaison at the Smithsonian Institution in Washington D.C., has extensively researched 3D technologies in the contexts of North America and Alaska. In 2018, Hollinger and Medeia Csoba DeHass published a research article "3D Heritage Preservation an Indigenous Communities in the Circumpolar North", focusing on theoretical and practical applications of 3D technologies. In 2013, Hollinger et al. published a research article titled "Tlingit-Smithsonian Collaborations with 3D Digitization of Cultural Objects", focusing on Tlingit cultural heritage and the digitization of respective materials. In 2023, Magnani et al. published an article titled "Small Collections Remembered: Sámi Material Culture and Community-based Digitization at the Smithsonian

Institution", focusing on Sámi cultural heritage housed abroad, 3D imaging methods, and heritage research.

Regarding repatriation Sámi cultural heritage recently, Opitz (2023) conducted research on the famous *Freavnantjahke*[13] *gievrie.*[14] Her master's thesis "the Institutional Process of Repatriation of Indigenous Heritage: the Case of the Sami Drum Freavnantjahke gievrie" elaborates on the multifaceted meaning of the gievrie to different museum institutions in Sápmi and Europe, and its repatriation claim efforts. Opitz (2023) states that "the first documented mentioning of a Sámi drum dates back to the end of the 12th century by an anonymous author in *Chronicon Norvegicum*" (p. 29). However, Sámi oral traditions and stories precede this period, but often they are not recognized as legit sources in academic research. Finbog (2020) states that "no doubt the scarcity of written sources of Sámi origin owes much to the fact that Sámi cultures were, and very much still are, oral cultures" (p. 19). In her master's thesis, Opitz (2023) also discusses the *Bååstede*[15] project, which was the largest repatriation project of Sámi cultural heritage in Norway during 2012-2019.

"The earliest description of divinations by Sámis are from the Middle Ages. They mention peculiar objects like 'a sieve' or 'an anvil' which the Sámis allegedly used in their rituals. In 1560 the German Professor Caspar Peucer at the University of Wittenberg wrote that the Sámis "had a drum of bronze with paintings of animals, fowl and fish that they can easily catch" and that "a brazen frog was attached to an iron staff which was set vertically to the middle of the drum"" (Sámiid Vuorká-Dávvirat, 2022, p. 13).

Liv Helene Willumsen (2022) has written an article "Witchcraft Trial against Anders Poulsen in Vadsø in 1692" which focuses on the well-known witchcraft trials in Sápmi in 1692. The trial was against a Sámi reindeer herder and *noaidi*[16] named Paul-Ánde (see Chapter 2.3.6), due to his possession of an old Sámi drum known as the goavddis. Monica Grini (2023) has examined the materiality and compound agencies of Paul-Ánde's goavddis in her article "Arresting Actors: A Sámi Drum and its Complex Relations." Jelena Porsanger (2022) writes

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[13] Freavnantjahke, in Norwegian as Frøyningsfjellet, is a mountain situated in the county of Trøndelag in Norway.

[14] South Sámi term for a Sámi drum.

[15] South Sámi term which means return.

[16] North Sámi term for a Sámi healer and/or a ritual expert.

in her article "Indigenous Sámi museum and repatriation on a Sámi drum from the XVII century" about the historical context of Paul-Ánde and the state of Sámi cultural heritage. The past and current state of Sámi cultural heritage is discussed by Eeva-Kristiina Nylander (formerly known as Harlin) and Anne May Olli (2014) in their book chapter "Repatriation: Political Will and Museum Facilities" in *Museums and Restitution: New Practices, New Approaches*.

Eeva-Kristiina Nylander (2023) writes in her dissertation "from Repatriation to Rematriation – Dismantling the Attitudes and Potentials Behind the Repatriation of Sámi Heritage" about the aspects related to the return or repatriation of Sámi cultural heritage, especially in Finland, and elaborates on the thematic of rematriation.

Research on digitization of Indigenous cultural heritage is quite extensive. Alicia Walsh (2019) delves into the applicability of 3D imaging methods in her master's thesis. In her master's thesis "Digital Reciprocity? Exploring the Potential of 3D Imaging within the Repatriation of First Nation Cultural Material", she provides valuable insights into 3D imaging projects on Indigenous material culture. Her thesis was an invaluable guide on the topic. Another invaluable resource regarding digitization and repatriation of Indigenous cultural heritage, has been the "Handbook of North American Indians" (2022) published by the Smithsonian Institution.

Although there is a variety of research on repatriation within the Sámi and Indigenous contexts, there is quite little of studies on the application of 3D technologies within Sámi museum context. This highlights a clear need for research in this domain, especially considering the ongoing applications of 3D technologies in Sápmi. Drawing examples from the broader global Indigenous contexts, I aim to illustrate the potential benefits and challenges of integrating 3D technologies into Sámi cultural heritage context.

1.6 Use of Terminology

According to Virtanen et al. (2021), "the crucial value of Indigenous languages to Indigenous research is its ability to reflect and build identity, culture, and cultural heritage on a much more sophisticated level than any other learned languages could do. By means of language, individuals and communities give meanings to relationships, social and physical environment, to material culture and immaterial heritage" (p. 38). Virtanen et al. (2021) cite Battiste (2001), stating that "languages are not only tools of communication, but that they also offer a

theoretical basis for understanding Indigenous traditional knowledge and reconstructing this knowledge" (p. 40).

With regards to the principles and values of the RUOKTOT exhibition, I have avoided reproducing practices that enforce Cartesian dualism.[17] Therefore, instead of using the word drum when referring to the old Sámi drum that belonged to Paul-Ánde, I have employed the North Sámi term goavddis. In the RUOKTOT exhibition, the old Sámi drums are conceptualized as non-human beings[18] and not as objects. Although I do not consistently employ the term non-human being throughout my master's thesis, I do refer to the term Sámi drums and their respective Sámi linguistic terms. I argue that it is crucial to acknowledge the value and cultural importance of Sámi terminology. For example, the Sámi drum is known as gievrie in South Sámi and *goabdes* in Lule Sámi. In honoring Sámi cultural values, it would have been appropriate to adopt an ontological approach to Sámi cultural heritage thorough this master's thesis, by employing the theoretical framework of posthumanism, as articulated by researchers such as Donna Haraway and Liisa-Rávná Finbog. However, that requires another research endeavour.

I have avoided reproducing misleading terms in the context of the Sámi community. Instead of employing term 'shaman' in regards to Sámi religion and spirituality, I have chosen the term noaidi used by the North Sámi community. "A Lule Sámi term for a Sámi ritual specialist is *noajdde* or *nåejtie* in South Sámi. Noaidi is an old Fenno-Ugric word, which stems from before the time when the Sámi and Finnish languages separated from each other, approximately 3,000 years ago, but some linguists believe the word is even older than that. According to Sámi oral tradition and numerous written sources a noaidi was in charge of the sacred drum" (Sámiid Vuorká-Dávvirat, 2022, p. 7).

When discussing cultural heritage, such as cultural artifacts, heritage objects, and intangible dimensions related to them, I have chosen to use term cultural heritage as an umbrella term. Additionally, to avoid repetition, I have employed term material culture also, when the repetition of cultural heritage might be too much.

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[17] Binaries such as "mind/body, human/nature" (Kuokkanen, 2009, p. 155).

[18] An entity or existence: not categorized as human (Sámiid Vuorká-Dávvirat, 2022).

When I speak of source communities, I refer to both "the groups of Indigenous peoples from which the cultural heritage material was collected or acquired in the past, as well as their present day descendants" (Peers & Brown, 2003, p. 2).

When discussing digitization, I refer to wide range of 3D practices in the context of cultural heritage, such as 3D imaging and modeling methods, including photogrammetry, laser scanning, structured-light scanning, computed tomography (CT), and time-of-flight (ToF) cameras such as LiDAR, which stands for light detection and ranging (Magnani & Douglass, 2018). It is worth mentioning the difference between ToF and triangulation. While triangulation is the principle behind photogrammetry and laser scanning, ToF cameras utilize the time it takes for light to travel to and from a surface to measure distance (Altuntas, 2021) whereas triangulation relies on angles and distances between known points to determine the position of an artifact in space (Walsh, 2019). A relatively new imaging technique is reflectance transformation imaging (RTI), which is an interactive imaging technique but is not technically 3D (Smithsonian, 2023). Nevertheless, RTI is employed in cultural heritage contexts. It is important to bear in mind that the field of 3D practices is rapidly growing and new techniques and methods are being invented. These 3D imaging and modeling methods, which are highly precise measurement tools, in cultural heritage contexts can be used for example in preservation, documentation, research, education, and conservation. Furthermore, 3D imaging and modeling methods are employed in design and 3D printing purposes. Often these 3D practices in the context of cultural heritage aim to create 3D digital representations, also referred to as 3D models or 3D visualizations of the original desired material—to create a 3D digital replica. This process is explained as 3D replication or 3D duplication (Hollinger, 2022, p. 182), depending on the purpose of the project, methods, and desired outcome. In order to create 3D digital representations of cultural heritage material, the captured data undergoes a rendering process using specific software depending on the method of data capture. 3D practices can also involve the integration of augmented, virtual, and extended reality applications (Bodard & Walsh, 2023; Pan & Isnaeni, 2024). In cultural heritage contexts, 3D models are typically stored and/or shared in different online platforms or digital

hubs, such as Sketchfab[19] and Europeana.[20] Overall, I refer to these developments as "novel technologies" (see Magnani, 2014).

1.7 Thesis Structure

This master's thesis is divided into seven chapters. I have devoted Chapter 1 to an introduction, where I have delved into the topic and research question. I have delved into my position as a North Sámi scholar and an employee. I also have highlighted the research gap and the preferred terminology. In Chapter 2 I have described the methodology, theoretical framework, the process of data gathering, analyzing, and the overall case study and its crucial components. Chapter 3 elaborates the past and current state of Sámi cultural heritage. Chapter 4 provides insights to the case study components, SVD and the RUOKTOT exhibition. Additionally, Chapter 4 illustrates the repatriation process of Paul-Ánde's goavddis. Chapter 5 elaborates on the thematic of repatriation and other concepts in relation to repatriation, based on research and the empirical data, gained through interviews and focus group discussions. Subsequently Chapter 6 presents the current state of digitization of Indigenous Sámi cultural heritage, based on research and the empirical data, gained through interviews and focus group discussions. The final Chapter 7 summarizes the findings, based on theories, employed methods and empirical data. Later on the last Chapter 7, I also embark on possible future research endeavors.

2 Methodology and Theoretical Framework

2.1 Methodology

As conducting research in an academic context within the Sámi community, Kuokkanen (2007) underscores the fact that it is acknowledged that "as an institution, the academy supports and reproduces certain systems of thought and knowledge, and certain structures and conventions, that rarely reflect or represent Indigenous worldviews" (p. 1). Virtanen et al. (2021) explain that this is due to various factors, such as discrimination, assimilation, and overall colonization of Indigenous peoples, and that "these common experiences have crucial

[19] Sketchfab is an "online hub and community where users can download, share, view, edit, and explore diverse 3D models and virtual and augmented reality content" (Sketchfab, 2023).

[20] Europeana "is a web portal that provides access to digital materials, including 3D models" (European Commission, 2023).

importance for the design and use of Indigenous methodologies" and that "they make visible Indigenous understandings of the past and the present from within an Indigenous culture" (p. 38). Klokkernes (2007) adds that in the past, experiences have not always been positive for Indigenous communities regarding the collection of precious material culture, such as the expropriation of Sámi drums, data handling, local participation, and in the return of information. I have actively tried not to contribute to these negative connotations by honoring the cultural understandings and sensitivities of the Sámi community, particularly emphasizing Sámi cultural heritage originating from the source communities, by engaging in dialogue with members, who were involved in the RUOKTOT exhibition production.

Prior starting the research journey, I had a clear vision how to conduct this research: I wanted to share the lessons of the community work mediated by and concducted at SVD with broader audience, to highlight community initiatives, and to promote more holistic heritage management, by bringing diverse perspectives about repatriation and preservation, specifically in Indigeonus Sámi context, to the forefront of research—overall, to respect and enhance community processes (Smith, 2012). One way to do this is through research, education, and activism (ibid.). After witnessing the legal transfer of the ownership of Paul-Ánde's goavddis to SVD from NM and the development of the RUOKTOT exhibition, I could not ignore SVD's effort together with the local community put into this development. Therefore, conducting two focus group discussions in Kárášjohka was an obvious choice for me, followed by a trip to London to conduct a focus group discussion during the 3D Summer School.

According to Smith (2012) in many projects "the process is far more important than the outcome" (p. 130). To rectify the gap between my researcher position and the research partners, and to embrace community approaches (Smith, 2012) I acknowledge the people interviewed as research partners, as advocated by Chilisa (2019). It means that when using the term research partner, it is emphasized that I do not consider the people I interviewed only as sources of information, but rather acknowledge them as research partners—doing this research project in collaboration with them, to elevate the participant's status. I could not have conducted this research all by myself without their vital input. With the chosen methodology I aim to avoid positioning my research partners as passive actors of this thesis. I also used the interviews and focus group discussions to formally separate the research from my work.

Virtanen et al. (2021) explain that "Indigenous methodologies can be treated as a set of tools that can be used in diverse cultural and historical contexts" and that "Indigenous methodologies can be seen as a locally based theoretical positioning" (p. 16). They highlight that following these discussions, the "researcher will need to take the particular local community as a starting point for research" (ibid.). Overall, "Indigenous research methodologies allow better Indigenous theorizing" (Virtanen et al., 2021, p. 21) and "Indigenous methodologies are rooted in Indigenous Peoples' ways of being and making sense of the world" (Kovach, 2009, p. 25). According to Porsanger (2007), in "Indigenous methodologies, local varieties of material and immaterial heritage, language varieties and dialects, personal names, genealogies, and place names are crucial for research and for source criticism from a Sámi perspective. Therefore, it is crucial to emphasize the importance of placing indigenous peoples' experiences and knowledge at the forefront of research methodologies" (as cited in Virtanen et al., 2021, p. 41). Therefore, focusing on the benefits to Indigenous communities and prioritizing the narration of Indigenous peoples' own perspectives as the primary approach in relation to Indigenous methodologies is the central focus of this research.

2.2 Repatriation as Theory

The theoretical framework regarding this master's thesis is informed by the concept of repatriation, particularly within the context of returning or repatriating Indigenous cultural heritage, emphasis on 1) access to and 2) control over Indigenous cultural heritage. On an international scale, legislation exists regarding repatriation of Indigenous cultural heritage. Norway and Denmark have signed the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). UNDRIP establishes a "universal framework of minimum standards for the rights of Indigenous Peoples, including their survival, dignity and wellbeing" (United Nations, 2008). As researched by Walsh (2019) "Article 12 (UNDRIP 2007) directly addressess repatriation" (p. 16):

> 12.1. Indigenous peoples have the right to manifest, practice, develop and teach their spiritual and religious traditions, customs and ceremonies; the right to maintain, protect, and have access in privacy to their religious and cultural sites; the right to the use and control of their ceremonial objects; and the right to the repatriation of their human remains.

12.2. States shall seek to enable the access and/or repatriation of ceremonial objects and human remains in their possession through fair, transparent and effective mechanisms developed in conjunction with indigenous peoples concerned.

Looking at the Article 12, matters regarding protecting, managing, and using Indigenous cultural heritage, emphasis on ceremonial and sacred material, are embedded in 1) access to and 2) control over the desired cultural heritage. UNDRIP "addressed many issues brought to the negotiating table by Indigenous peoples and expressed many of their moral, social, cultural, and political concerns" (Champagne, 2022, p. 294). Norway's report (2020) on repatriation of ceremonial objects and human remains to UNDRIP from 2020, states that "ceremonial objects include drums and other objects that were part of Sámi religious practices. Also grave gifts, votive offerings and holy stones or *sieidi*[21] are included in the category of ceremonial objects. The Sámi drums are of great emblematical importance for present-day Sámi culture and identity" (A/HRC/45/35, 2020, p. 1). The report continues as "unfortunately, Norwegian authorities do not have a full overview neither of the exact number nor the whereabouts of ceremonial items outside Norway and Sápmi. It is therefore essential for the Sámi community to explore the possible existence of Sámi items in institutions or collections abroad, with a view to collecting valuable information regarding their cultural history, and the digitisation of existing items, including ceremonial objects" (A/HRC/45/35, 2020, p. 2). The report concludes that "there is a range of examples in this [repatriation] field that can be characterised as good practice" (A/HRC/45/35, 2020, p. 17).

Repatriation of Indigenous cultural heritage is "a process that has been internationally discussed and enforced since the 80s" (Opitz, 2023, p. 3). Repatriation cases of cultural heritage globally have contributed to the healing, empowerment, and overall to the cultural resurgence of Indigenous communities (Hollinger & Csobas, 2018; Nylander, 2023; Opitz, 2023). Opitz (2023) quotes Mulk (2009), stating that since "1989 Sámi organizations, in collaboration with Sámi museums and institutions have been playing a significant role, debating the matter of repatriation and ownership of cultural heritage in several meetings and conferences" (p. 3). One of the most public and numerically large repatriation project of Sámi cultural heritage taking place between 2012-2019 is Bååstede (Opitz, 2023; Ween, 2021).

[21] Sacred, sometimes sacrificial places and/or formations in nature.

Opitz (2023) explains that “the project was dedicated to the return of Sámi cultural heritage from national museum institutions in Oslo and into Sami management” (p. 4). More than 1,600 items, all part of Sámi cultural heritage, were “repatriated to various Sámi institutions” (Opitz, 2023, p. 4). However, a reclaim over human remains originating from Sápmi was made almost a decade earlier by the Sámi Council of the Swedish Lutheran Church. They requested the “return of all remains from institutions across Sweden, as well as their reburial” (Martin-Wurtz, 2022, p. 10).

In an Indigenous context one of the largest repatriation processes started in 1982 and lasted for 19 years: the project called *Utimut*, a term derived from the Inuit language, specifically Inuktitut, meaning 'return', was finished in 2001 (Gabriel & Dahl, 2008). “Repatriation initiatives in European context regarding Sámi cultural heritage proceeded in the 2000s, when the EU-funded Interreg-project 'Recalling Ancestral Voices: Repatriation of Sámi Cultural Heritage' (2006-2007) took place, recording Sámi cultural heritage in Finland, Sweden, and Norway” (Opitz, 2023, p. 4). Nylander (2023) explains that “as a result of this project, the information regarding the location of Sámi collections grew strongly in Finland and Norway, sparking collaborations as can be seen for example in 2017, when the National Museum of Finland and the Sámi museum Siida in Inari, Finland, agreed on repatriating the whole Sámi collection” (p. 13). More recently, in 2024, the Northern Ostrobothnia Museum/ Pohjois-Pohjanmaan museo located in Oulu, Finland, has begun the process of returning its Sámi collection to the Sámi museum Siida (Kaleva, 2024).

Despite previous repatriation efforts and returning culturally significant material and heritage back to their source communities, museums, and repositories, large amounts of Indigenous cultural heritage—collected, excavated, donated, given, stolen, bought, and auctioned—remain outside the control of source communities and respective institutions. Cultural heritage originating from Sámi communities are scattered around the world due to expropriation, state policies, anthropological interest, tourism, World War II, trade, migration, and expeditions. One can find a pair of reindeer fur shoes in a museum in Washington, D.C. and an old Sámi drum in a museum in Italy.

In modern digital era, some repatriated Indigenous artifacts and heritage material have undergone digitization processes (see Chapter 1.1). Watkins (2022) argues that “control over access to materials held in museums is now undergoing radical changes, as digitization

initiatives reconfigure what it means to be in a museum collection" (p. 47). "The growing number of digital networks raise issues that did not have existed 20 years ago" (ibid.). He asks 1) "what does it mean to 'repatriate' and 'return' objects, when technologies are available to allow others to 're-create' special objects," and 2) "is 'digital repatriation'—whereby museums retain the physical object while tribal members get exact replicas—good enough for future events?" (pp. 47-48). These questions presented by Watkins have guided to further elaborate on the research question of this master's thesis.

Hollinger and Csoba DeHass (2018) explain that "while postcolonial engagements have been exploring avenues for returning collections knowledge to origin communities, geopolitical realities of the Arctic have also limited these efforts. The expenses of long-distance Arctic travel and the decentralized nature of communities, the lack of Indigenous-run museums, and the fact that Indigenous belongings are widely dispersed make it challenging to develop lasting and comprehensive approaches" (p. 1). Since it is not realistic to assume that all the Sámi cultural heritage housed outside Sápmi will be transported to respective institutions and communities, it is appropriate to consider the role of 3D technologies in the context of repatriation in Sámi context. According to Hollinger and Csoba DeHass (2018), "digital 3D models and physical replicas offer alternative modes of access and opportunities for Arctic and Subarctic communities" (p. 1).

As mentioned in Chapter 1.2, 3D heritage preservation is an established practice in museum and heritage domains in North America. Csoba DeHass and Hollinger (2018) explain that "the widespread availability of using 3D technology for heritage preservation is largely possible due to the lucrativeness of the video gaming industry that continues to be the push behind ongoing, rapid technological development and making hardware and software affordable to the mass market" (p. 5) 3D heritage preservation involves the use and application of 3D technologies, such as, scanning, modeling and visualization technologies to digitally capture cultural artifacts, sites, monuments, landscapes, and other relevant material. These processes involve for instance, the creation of digital replicas, and duplications. 3D technologies are employed in 3D heritage preservation for instance, for documentation and preservation of the desired material (Csoba DeHass & Hollinger, 2018; Hess, 2013).

A concept addressing repatriation of cultural heritage in the digital realm, is considered digital repatriation. Walsh (2019) explains that “digitizing intangible heritage is the most common form of digital repatriation today.” She provides an example from the United States, where “recordings taken by anthropologist Jess Walter Fewkes of the Passamaquoddy community members, from 1890, are being digitized at Harvard’s Peabody Museum” (p. 36). “The team decided which songs and stories the Library of Congress should make available to the public, while Tribal members have full online access” (ibid.). Hollinger (2022) writes that “technological advances are changing the world at an unprecedented rate, and the world of cultural heritage, inherently protective of tradition, is wrestling with the changes and challenges brought by technology. Two-dimensional digitization of extant photographs, film, tape recordings, and textual documents, considered innovative not long ago, is now the norm for duplicating records, archiving, and transferring information. Such digitization has led to a surge in what has been called 'knowledge repatriation' and, perhaps somewhat misleadingly, virtual repatriation as it has made reproducing and sharing such archived materials with source communities exponentially simpler and faster” (p. 182). Glass and Hennessy (2022) add that other forms of repatriation take place also, “such as 'visual repatriation', and 'figurative repatriation'” (p. 169). Bell (2003) discusses the concept of visual repatriation in the context of the Purari Delta in Papua New Guinea. In his research, Bell focuses on the role of photographic collections from the early 20th century. The photographs in these researched collections, were duplicated and presented to the local community in the Purari Delta of Papua New Guinea, as a means of visual repatriation, to “engage the local community with their visual heritage” to bring photographs, the duplications, back to the communities where the original photographs were originally produced (p. 111). Bell et al. (2013) argue that “digital repatriation can be a contentious term that generates reflex assumptions about the relationship between digital and material forms of cultural heritage materials” (p. 196). In line with the writings of Bell (2003), Hollinger (2022) argues that such digitization has been “misleadingly called virtual repatriation” (p. 182). Oruç (2022) states that “while receiving copies of things held in other countries can still be useful, there are also concerns about whether it is alright to use the term repatriation and such practices could be more useful to parties trying to avoid actually repatriating the originals” (p. 1144), since the term and practice of repatriation has typically meant the return of the original desired heritage back to the source communities or other relevant parties.

I pause to note this critique of the term digital repatriation. If only digital representations are provided, does it align with repatriation in its traditional context of physical material? As explained by Walsh (2019), it is crucial to examine the "current forms of digital heritage", and they should be assessed to determine if they constitute "digital repatriation, which will be defined as the return of an item to its origin community while the digital copy is retained by a museum or institution" (pp. 13-14). Examining these repatriation concepts, it can be argued that many are based upon more or less overlapping definitions. For example, digital and virtual repatriation involve the reproduction and duplication of diverse cultural fabric, including audiovisual, 3D and 2D formats. While this master's thesis elaborates more on the thematic of digital repatriation, I could have also explored virtual repatriation. However, my choice to stick with digital repatriation stems from the determination to explore the effectiveness of 3D technology as a tool in repatriation contexts of 3D digital heritage material. I have become more familiar with the concept of digital repatriation than virtual repatriation. Both of these concepts, are employed in context-specific cases.

Rematriation concept is also integral to repatriation (Nylander, 2023). Leonard et al. (2023) explain that "rematriation is a term coined to reinvigorate and inspire humanity to fulfil its duty of care for Mother Earth" and that "it further describes the process of returning Water, Land, culture, and spirituality to Indigenous women to address the ongoing impacts of colonialism, patriarchy, and gender-based violence" and "the term has gained prominence in Indigenous movement building through the work of the Haudenosaunee-led digital storytelling platform – Rematriation" (p. 379). Nylander (University of Oulu, 2021) explains that in a Sámi context, rematriation means "a process where research, knowledge, and history are brought together, shared and intertwined with Sámi communal crafting, traditional knowledge and silent information." This master's thesis does not focus on rematriation. Later on in Chapter 5.3, I have presented the Sámi cultural concept *máhcaheapmi* in relation to repatriation. Máhcaheapmi is a North Sámi term related to repatriation.

In line with discussions of repatriation, Tythacott and Arvanitis (2014) argue that "museums and Indigenous peoples may work together to redress past imbalances, using collections as a resource for promoting cross-cultural awareness" (p. 5). Harlin and Olli (2014) cite a Norwegian Sámi archaeologist Audhild Schanche, stating that "claims for repatriation should not be understood foremost as a discussion of the legal ownership of the Sámi heritage, but rather as the responsibility for the heritage and its future" (p. 67). Isaac (2007) concludes by

identifying repatriation “as a process that actively renegotiates not only the role of museums as guardians of cultural property but also the use of and access to related knowledge” (p. 4).

Digital repatriation has primarily focused on the digitization of intangible heritage, such as audio recordings, photographs, and other forms of documentation. However, recent studies have expanded the scope of digital repatriation to include tangible heritage, for instance the creation of 3D digital representations of culturally significant artifacts (Crawford & Jackson, 2020; Walsh, 2019). Therefore, this research project explores the potential of 3D technology in tangible Sámi heritage and its potential in repatriation.

2.2.1 Repatriation as Access and Control

Within the framework of access and control, it is essential to examine how digitization efforts of old Sámi drums affect SVD’s ability to access and manage cultural heritage originating from Sápmi. In this master’s thesis, I question whether digital repatriation, provides access to and control over cultural heritage, as well as intellectual access to intangible aspects, in similar ways to other access to artifacts.

As described earlier, access to and control over cultural heritage encompasses various dimensions, such as physical access to artifacts, intellectual access to related cultural knowledge and traditions, and fostering kinship relations and connections to aspects of heritage (Magnani et al., 2023). These dimensions require both access to and control over the desired material: access alone is not sufficient without control over the material, because control enables source communities, cultural repositories, and museum institutions to determine use, representation, dissemination, and management of the desired heritage, while ensuring that appropriate preservation practices, sustainable cultural integrity, and accurate interpretation take place in accordance with their values and cultural traditions. In the Sámi context of old drums, both access to and control over these drums is crucial. Harlin and Olli (2014) highlight that in previous experiences regarding Sámi cultural heritage, “in non-Sámi museums, Sámi culture is occasionally presented in ways that can be offensive” (p. 67), meaning that Sámi cultural heritage is often misleadingly categorized and falsely represented within exhibitions and collection premises in non-Sámi institutions. Old Sámi drums are particularly sensitive here. The critical question is: what does 3D technology add to conversations about repatriation regarding these drums? One might ask, is digital repatriation appropriate concept to employ in Sámi context when creating 3D digital representations? My

goal is to explore how 3D imaging and modeling methods can contribute to expand access to Sámi cultural heritage, such as the drums, while simultaneously enabling SVD to gain control over the 3D digital representations.

2.3 Case Study Research

This is an empirical research employing a qualitative case study method, focusing on the process of the RUOKTOT exhibition production and the integration of 3D digital representations of Sámi drums within the exhibition. This thesis employs an inductive approach. Through my position as a conservator at SVD, I had a privileged position to witness the development of the RUOKTOT exhibition case.

Both Woldeselassie (2019) and Yin (2009) write that case study remains an important method in the social sciences and that case study method is used in many situations, to contribute to our knowledge of individual, group, organizational, social, political, and related phenomena, and as an empirical inquiry which investigates a phenomenon in its real-life context, as is the case of the RUOKTOT exhibition production. In a case study research, "multiple methods of data collection are used, as it involves an in-depth study of a phenomenon" (Yin, 2009, p. 18). Yin (2009) continues that "a case study is not a method of data collection, but rather is a research strategy or design" (p. 18).

The selection of the case study method for my research was directly connected to a specific event that occurred first in 2020, the 3D imaging workshop held at SVD (see Chapter 1.2), and in 2021 the preparations for the upcoming RUOKTOT exhibition. From the very beginning of my research journey, I had a vision to examine the research question through this specific case of the RUOKTOT exhibition. Also, without the RUOKTOT exhibition, I probably would not have been able to propose the chosen research question. The case led me to propose the research question.

During outlining of this research project, it was clear what type of data I would need. Interviews and focus group discussions became the most important and relevant sources, since the goal was to focus on their function as tools to find out the perspectives of the key persons, or as I identify them as research partners, involved in the case of the RUOKTOT exhibition, repatriation of the goavddis of Paul-Ánde, digitization of Indigenous cultural heritage and the old Sámi drums for the RUOKTOT exhibition. This contributed in removing my work identity from my research role. I wanted to explore the research topic of how the

research partners interpret the applications of 3D technologies, both in global Indigenous and local Sámi context, and how digitization projects of Indigenous cultural heritage are conducted. Additionally, what type of ethical considerations are discussed during digitization? Therefore, it was necessary to employ interviews and focus group discussions, to analyze the specific case of Sámi cultural heritage, namely the old Sámi drums displayed in the RUOKTOT exhibition—both in the form of 3D digital representations and material culture of high spiritual value.

As a researcher, it is crucial "to determine whether the purpose of his or her research is testing a theory, documenting a rare case, analyzing a phenomenon, or exploring a case in preparation for a multiple case design" (Woldeselassie, 2019, p. 6). In this master's thesis, case study method became the most effective way to conduct this research project, due to the contemporary status and case of the RUOKTOT exhibition. With the chosen method, I have aimed to document and narrate the rare case of the RUOKTOT exhibition, the first exhibition in Sápmi to integrate 3D digital representations of old Sámi drums while simultaneously displaying one original Sámi drum—the goavddis of Paul-Ánde. Another factor that makes the RUOKTOT case unique, is the employment of SVD's own Artec 3D scanners to create those 3D digital representations of old Sámi drums: the digitization project was conducted by the SVD staff themselves, and not outsourced to a third party. SVD is the first Sámi museum in Norway to purchase Artec 3D scanners, which are high resolution structured-light 3D scanners. SVD purchased these scanners in 2020 with the financial help from Sámediggi, the Sámi Parliament in Norway (SD). These handheld 3D scanners are "ideal for making accurate 3D models of medium sized artifacts quickly" (Artec 3D, 2024).

A third significant choice for the case study method was a call to communities, institutions, and Indigenous peoples from the United Nations Human Rights Commissioner (UNHRC), which SVD joined along with other Sámi museums on the Norwegian side (see Chapter 4.1). Together they wrote a joint report (EMRIP/2020l2b, 2020) to UNHRC. SVD's focus was on the repatriation claim of Paul-Ánde's goavddis.

Like any other research method, the case study method has its pitfalls. For example, according to Yin (2009), "one of the greatest concerns has been over the biased views to influence the direction of the findings and conclusions" (p. 14), which I have aimed to avoid by employing thematic analysis and establishing a border between my professional and

researcher roles through conducting interviews and focus group discussions outside of work hours.

2.3.1 Primary Data: Qualitative Interviews and Focus Group Discussions

This research would not exist without the research partners. Due to the scarcity of research in regards to this thesis topic (see Chapter 1.5), the research partners became the most invaluable and relevant sources of perspectives and data. Each individual is a scholar and/or an expert within the field they work, and each one is specialized in either one or more of the following topics: 3D technologies in Indigenous cultural heritage contexts including digitization processes and ethics, RUOKTOT exhibition production and design, and repatriation of Paul-Ánde's goavddis and/or other Indigenous cultural heritage.

The focus of this research is to examine, firstly, how the research partners perceive the integration of 3D technologies in Indigenous Sámi contexts in relation to repatriation, focus on access to and control over cultural heritage, and the digitization processes of Indigenous Sámi cultural heritage. Second, what ethical guidelines need to be kept in mind while conducting digitization processes of Indigenous Sámi cultural heritage—overall, how they perceive the potential and challenges of 3D technologies in Indigenous Sámi museum contexts?

The main methods used were semi-structured interviews and focus group discussions. I conducted three focus group discussions and two interviews in total with 7 individuals, with SVD staff involved with one or more of the following topics: the RUOKTOT exhibition production, digitizing of old Sámi drums, repatriation of Paul-Ánde's goavddis, and with 3D technology experts who are external to the local Sámi community. I used the Teams app on my phone to record the interviews and focus group discussions. The cloud server provided by the university made it possible to store the data safely.

Interviews and focus group discussions are one of the main sources of data for qualitative research (Kovach, 2021, p.155), which were framed as dialogue and knowledge exchange, in order for the research partners to highlight what was important for them in the research topics (Brinkmann, 2013, p. 21). According to Smith (2012) "the quality of the interaction is more important than ticking boxes or answering closed questions" (p. 137). Drever (2003) explains that in a semi-structured interview, the researcher designs a framework to outline the research topics to be addressed and guides the whole interview setting.

For more subjective outcome, in the beginning of the interviews and focus group discussions, I emphasized to the research partners that the interview guide was flexible and that they are free to give additional answers beyond the interview questions or to skip questions if they so wished.

The decision to interview the chosen research partners was based on several considerations, such as their involvement with the RUOKTOT exhibition production and design, digitization of the old Sámi drums, experience in different 3D imaging and modeling methods, ethical guidelines regarding digitization of Indigenous cultural heritage, and repatriation of Indigenous cultural heritage—overall, their ability and willingness to provide valuable insights and perspectives for this research project.

Since SVD is one of the pioneering Sámi museums in Norway to purchase Artec 3D scanners, incorporate 3D digital representations into the RUOKTOT exhibition design and documentation of materials from its collections in cultural heritage context, I contacted my colleagues Dr. Jelena Porsanger and Anne May Olli. Porsanger is a Sámi scholar with a Doctoral degree in the history of religion and Sámi research from the University of Tromsø (Norway). She is also the museum leader for SVD, under the RiddoDuottarMuseat (RDM) consortium. Olli is the director of RDM consortium and holds an MA in object conservation from the University of Oslo (Norway). I inquired if they were interested in participating in this research project and a focus group discussion together, since they have been working side by side during the RUOKTOT exhibition production, however, involved in different tasks: Porsanger has been the key person in designing and developing the exhibition content, while Olli has provided support in her role as RDM director. They kindly accepted my invitation, and the focus group discussion was conducted in March 2023 in Kárášjohka, in the RUOKTOT exhibition room at SVD. In April 2023, Dr. Matthew Magnani, who holds a PhD in archaeology from Harvard and serves as a digital curator at SVD, generously participated in a focus group discussion along with Porsanger in Kárášjohka, in the RUOKTOT exhibition room at SVD as well. Magnani has been a key person in the digitization process of old Sámi drums in Europe along with Porsanger.

During the summer 2023 I proceeded to contact the professionals from NM, who have previously been involved with the preservation, management, and repatriation of Paul-Ánde's goavddis. Dr. Christian Sune Pedersen, the head of research and collections of modern history and world cultures and Dr. Martin Appelt, senior researcher and curator of modern history

and world cultures, both kindly agreed to join this research project. These interviews with Pedersen and Appelt were conducted personally on Teams online platform during June and September 2023, due to my inability to travel to Denmark.

In July 2023 I traveled to London to participate in a 3D Summer School: 3D imaging and modeling for classics and cultural heritage, organized by the Institute of Classical Studies (ICS), University of London. I participated as a conservator for SVD. Prior to my travel to London, I decided to contact the 3D Summer School leaders, Dr. Gabriel Bodard and Alicia Walsh, to inquire if they were interested in participating in an interview during the 3D Summer School week. I believed that it was important to gain perspectives outside the Sámi context regarding 3D technologies, to understand perspectives and 3D methods from various 3D technology professionals in cultural heritage field. The Summer School leaders Bodard, reader in digital classics at the ICS and Walsh, digital archaeologist and researcher at Maastricht University, warmly welcomed us summer students with fantastic hospitality and facilitated and led the 3D practices throughout the week. At the end of the week, Bodard and Walsh accepted to participate in a focus group discussion, to elaborate on the potential and challenges of 3D technologies in Indigenous Sámi cultural heritage context and ethical guidelines regarding 3D imaging and modeling processes of Indigenous cultural heritage. Due to strict time constraints during the 3D Summer School week, we decided to conduct a focus group discussion instead of individual interviews.

Morgan (1988) explains that "procedurally, the strength of focus groups lies in their ability to explore topics and generate hypotheses" (p. 21). Hennink (2014) writes that "focus groups typically consist of 5 to 10 participants" (p. 1) but due to the limited amount of participants and major distances between the research partners, I decided to conduct focus group discussions with two persons maximum at the same time. According to Hennink (2014) "the essential purpose of focus group research is to identify a range of perspectives on a research topic, and to gain an understanding of the issues from the perspective of the participants themselves" and that "the group environment enables a broad range of insights on the research issue to be gathered in a single sitting" (p. 1).

An ideal outcome of this research is to raise awareness about more holistic heritage management of Indigenous Sámi cultural heritage in contemporary digital era, based on various perspectives and methods from museum, heritage, and 3D tech experts. It is crucial to understand aspects of heritage management for communities and museum institutions—why

and how they employ 3D technologies, while bearing in mind that it is important to evaluate both the possibilities and challenges of these technologies.

2.3.2 Gathering of Data

It was up to the research partners to give their contribution and input, to the extent they felt safe and comfortable in doing go. The reflections of research partners created the empirical basis for the project. Therefore, their reflections created main data for this research project.

As stated by Isaac (2007), "some researchers might object that this approach prevents immediate and candid responses to questions" (p. 8), but the discussions provided rich perspectives. By providing the interview guide and questions beforehand I wanted to make sure that they had the most complete information at their disposal, which resonates well with research transparency. All the discussions were recorded and later transcribed.

Prior to the interviews and focus group discussions, free, prior, and informed consent form was sent to the research partners to be read and signed. Everyone did consent to being recorded with their full names in this master's thesis. Together with the research partners we decided to use English during interviews and focus group discussions. This was their choice of language, since my Norwegian is not good enough to conduct a full discussion. With fluent North Sámi speakers, we decided to use both North Sámi and English, due to particular cultural concepts requiring the employment of Sámi terminology and while some high-tech terminology related to 3D technologies required English. Nylander (2023) considers "the researcher's ability to operate in the native language of the community they study important, especially if the study involves interviews or deals with elements related to cultural heritage" (p. 33).

The atmosphere during the focus group discussions might have been different if some of the research partners were not my colleagues. My position as a conservator at SVD, conducting focus group discussion with colleagues was like having a weekly meeting at work: first, going through day's tasks, news, and some personal matters—mostly on updating my master's thesis journey and the following steps. Then proceeding into the interview guide. Due to the ease of discussion flow, established through years together at the same workplace, the topics discussed with my colleagues covered all the matters articulated in the interview guide—while going off topic few times, for example elaborating on the conspiracy theories regarding the death of Paul-Ánde in 1692.

2.3.3 Introduction to the Interview Guide

It was crucial to understand the objectives behind the RUOKTOT exhibition and exploring the integration of 3D digital representations and the repatriation process of Paul-Ánde's goavddis. The interview questions also delved into ethical considerations in digitization processes of Indigenous Sámi cultural heritage and interpretations of repatriation concepts and cultural concepts in the context of repatriation.

The interview questions were structured germane to their experiences and the interview guides were based on the research topic. The interview questions varied based on the profession of the research partners. Persons within the same focus group discussion got identical sets of questions. Also, personal interviews with professionals from NM got identical questions.

The questions for Porsanger and Olli, the first focus group discussion, were about, 1) the RUOKTOT exhibition production and design, 2) the case of Paul-Ánde's goavddis at SVD and the repatriation process, 3) the digitization process of the goavddis and the old Sámi drums chosen for the RUOKTOT exhibition, 4) the concept of repatriation and the Sámi cultural concept of máhcaheapmi, and 5) the potential and challenges of 3D technologies for Sámi museums and communities. The questions for Porsanger and Magnani, the second focus group discussion were almost the same, with an additional topic of 6) ethical considerations in digitization processes of Indigenous Sámi cultural heritage. The interview questions for Pedersen and Appelt consisted of topics 2), 4), and 5). The questions for Bodard and Walsh, the third focus group discussion, consisted of topics 5) and 6) (see Table 1 and Table 2 below).

The answers provide valuable insights regarding the research project, which otherwise would have been difficult to gain. The perspectives represented by museum and heritage experts, and 3D technology professionals at the institutional level provide a valuable insight into the growing domain of repatriation Indigenous cultural heritage and digitization in Indigenous contexts.

The theme of non-human beings emerged during the focus group discussion with Olli and Porsanger, and therefore was not addressed in the interview guide. This led to mentioning Haraway's and Finbog's theory about posthumanism regarding non-human beings.

Table 1 - Summary of conducted focus group discussions and interviews in 2023

Setting	**Date**	**Place**	**Research Partner(s)**
Focus group discussion 1	23.03.2023	Sámiid Vuorká-Dávvirat	Dr. Jelena Porsanger and Anne May Olli
Focus group discussion 2	28.04.2023	Sámiid Vuorká-Dávvirat	Dr. Matthew Magnani and Dr. Jelena Porsanger
Focus group discussion 3	28.07.2023	The Senate House	Dr. Gabriel Bodard and Alicia Walsh
Online interview 1	16.06.2023	Teams-platform	Dr. Martin Appelt
Online interview 2	12.09.2023	Teams-platform	Dr. Christian Sune Pedersen

Table 2 - Summary of topics discussed during focus group discussions and interviews in 2023

Setting	**Topics Discussed**
Focus group discussion 1	1), 2), 3), 4), 5)
Focus group discussion 2	1), 2), 3), 4), 5), 6)
Focus group discussion 3	5), 6)
Online interview 1	2), 4), 5)
Online interview 2	2), 4), 5)

2.3.4 Data Analysis

After transcribing the interviews and focus group discussions, I started analytically sorting out the data. I employed thematic analysis, “an analytic method commonly used to identify patterns across language-based data” (Lester et al., 2020, p. 2). I have used thematic analysis previously in my Bachelor’s degree studies, and I have found it to be a good method in seeing the bigger picture regarding the research scope. This was conducted by identifying central

themes regarding the research question, such as the RUOKTOT exhibition design and content, repatriation and other concepts in the meaning of returning over cultural artifacts of significant value, 3D imaging and modeling methods, ethical considerations regarding digitization of cultural heritage, the potential and challenges of 3D technologies for museum and heritage domains, namely in the context of repatriation.

While as an insider closely involved with the research topic, thematic analysis was a transparent way to analyze the data. It was a crucial process in identifying my biases, since prior starting the research journey, I already had certain, mostly positive, perspectives on 3D technologies in cultural heritage context. It was important to separate my personal and biased perspectives gained through work as a conservator, from the research outcome, and clearly articulate the gathered outcome of the data.

As outlined by Walsh-Knarvik (2023) thematic analysis "involves deriving themes from the data" (p. 26), which are "essentially stories about particular patterns of shared meaning across the dataset" (Braun & Clarke, 2019, p. 592). The themes emerging from the data ensured that I could not overlook or miss any crucial themes.

According to Lester et al. (2020) "thematic analysis offers theoretical flexibility" (p.1) and this "theoretical flexibility allows researchers across a range of disciplines to engage disciplinary theories and perspectives when conducting a thematic analysis, potentially generating a more meaningful and relevant analysis for a given field" (Lester et al., 2020, p. 1). Additionally, "thematic analysis enforces researcher subjectivity" (Braun & Clarke, 2019, p. 593). It was possible to identify the themes mentioned earlier, from the data by employing inductive thematic analysis. I arrived at those themes since they are key themes in exploring the research topic.

2.3.5 Defining Case Study Actors: Sámiid Vuorká-Dávvirat

In this research project it is crucial to contextualize the role of SVD, which forms an important part of the case study research. I contextualize SVD through the RUOKTOT exhibition as a mediator (see Isaac, 2007) for Sámi cultural heritage because it exhibits both physical and digital representations of old Sámi drums, which I have interpreted as a space for constructing new contexts and values, such as new cultural connections and practices in museum domain.

Virtanen et al. (2021) narrate the historical context of SVD followingly: "in 1972 Alf Issát Keskitalo became the head of the first ever Sámi-driven cultural institution in Norway" (p. 54). They add that "which [SVD] became a meeting place for various Sámi community interests and organizations, where the Sámi language, Sámi ways of living, epistemologies, values, and cultural knowledge were appreciated and confirmed" (ibid.). Today SVD fosters monthly meetings for the local community elders association. During the meetings, SVD staff often mediates the ongoing projects and research endeavours to the elders. During these meetings, elders have the opportunity to raise questions or objections regarding certain matters if they so wish. Whether it is about SVD's repatriation efforts, international heritage research projects (see Magnani et al., 2023) or SVD's request to identify historical persons from old photographs, the elders got their questions lined up and show tremendous initiative—I myself have been part of some of these meetings. This way SVD engages part of the local community to its practical and research projects. Harlin and Olli (2014) highlight that "such cooperation is familiar between the Sámi museums and the local people" (p. 67) which shows how SVD thorough times has developed its position as a Sámi-run and community-based museum.

2.3.6 Defining Case Study Actors: Historical Context of Paul-Ánde and the Goavddis

Another crucial component of this case study research is Paul-Ánde's case, specifically his possession of the goavddis as a noaidi. Paul-Ánde was born around the year 1600 in *Torne* district.[22] He was a Sámi reindeer herder and a skillful noaidi. His companion, his goavddis, "was presumably made before 1650, according to the owner's testimony" (Sámiid Vuorká-Dávvirat, 2022, p. 13). Paul-Ánde "learned to use the goavddis from his mother but he indicated that he initially got the goavddis from a Sámi man from Torne district area named Pedar-Ánde[23]" (Porsanger, 2022, p. 78). In 1691 Paul-Ánde was arrested "on suspicion of witchcraft" (Porsanger, 2022, p. 72). According to Hagen (2023), the goavddis along with the ritual companions, *vuorbi*[24] and *bállin*[25] were "confiscated by Deputy-Bailiff Olle Andersen

[22] Geographically the northern parts of Sweden and Finland.

[23] In Norwegian Anders Pedersen.

[24] Brass ring.

[25] Drum hammer.

and the Sámi sheriff Poul Iversen" in Várjjat.[26] Paul-Ánde and his goavddis along with the ritual companions were carried to Čáhcesuolu[27] "by reindeer transport" (p. 6). He was accused of performing ungodly sorcery, subsequently imprisoned, and forced to hand over his goavddis (Grini, 2023; Porsanger, 2022; Willumsen, 2022).

During court interrogations in 1692, Paul-Ánde "demonstrated how he used his goavddis. Written court protocols from the witchcraft trial of Paul-Ánde were first published by Just Qvigstad in Danish in 1903. The County Governor of Finnmark Hans Lilienskiold who was present at the trial of Paul-Ánde described the prosecution in 1699 in *Speculum Boreale*, which was first published in 1942. Swedish ethnographer Ernst Manker (1893–1972) gave this goavddis inventory number 71 in his catalogue" (Sámiid Vuorká-Dávvirat, 2022, p. 13).

In 1692 Paul-Ánde was sentenced to death by the district Court in Finnmark in Čáhcesuolu. While awaiting his final punishment in custody, Paul-Ánde was murdered by a fellow prisoner. The killer was not convicted of the murder because he was considered mentally unstable, according to the district Court. Following the murder of Paul-Ánde, the expropriated goavddis along with the ritual companions were sent to Copenhagen and became part of the Royal Danish Cabinet of Curiosities/Det Kongelige Kunstkammer (RDCC) (Grini, 2023; Porsanger, 2022; Willumsen, 2022).

2.4 Validity and Reliability

As conducting research as an insider, Smith (2012) highlights that "the critical issue of the constant need for reflexivity at a general level, as an insider researcher" is to think critically the processes, relationships, and the quality of the data and analysis (p. 138). I have aimed to foster these components by practicing transparency throughout the research process.

Rather than aiming to encompass all perspectives on repatriation of Indigenous Sámi cultural heritage, 3D technologies and overall heritage management in Sápmi, the focus is on exploring how certain key actors perceive the multifaceted dimensions of repatriation and the application of 3D digital representations. Due to that, the selection of research partners is crucial, to ensure representation and perspectives from diverse key persons, both within the Sámi museum and community and from professionals external to it. While this master's thesis

[26] In Norwegian Varanger.

[27] In Norwegian Vadsø.

is intended to be part of the global introduction to the subject of 3D technologies in Indigenous Sámi cultural heritage contexts, it does not claim to know and represent every aspect of this complex, rich, and diverse domain. The outcome of this research project represents a particular view of professionals working in the domain of museums, heritage, and 3D technologies, and therefore do not represent a collective view of these fields, but they do represent a valid and relevant perspectives employed in those domains.

2.5 Ethics

Olsen (2016) reminds that any scholar, "Indigenous or non-Indigenous, must always remain critical and conducting research that reflects transparency, respect, and honesty is essential, especially in Indigenous context" (pp. 11-12). In line with this principle, throughout the research process, I have remained critical towards the research itself and also towards myself. Therefore, I have prioritized transparency, both with myself and the research partners. I have consistently acknowledged my biases at every step of the process. This has included rewriting interview questions to avoid leading questions.

I am aware of the possible implications of this research project for its partners, their communities, and institutions, such as increased attention. I acknowledge that some of these research partners are my close acquaintances which might impact the analysis, but which I have tried to prevent by establishing clear categories while conducting thematic analysis. The research partners had a free will to remain anonymous if they so wished. I am grateful that all the research partners graciously agreed to have their names included in this master's thesis.

Prior starting this research journey, one of the main objectives was to present research conducted at the hearth of my community and institution I work for, and to present it in all of its complexities and diversities. Lawrence and Raitio (2016) adhere to research ethics, stating that "to conduct research in an ethical way that puts the Indigenous community at the center, is of importance not only to start healing of the harm historical research has done, but also to produce knowledge that is correct" (pp. 117-119). While this master's thesis aims to offer holistic and grounded interpretations based on interviews, focus group discussions, and overall case study method, I acknowledge that there is room for opposing and versatile perspectives. While I acknowledge that I do not represent opinions and views of the whole community, nor do the research partners, however, I do represent an Indigenous scholar conducting research in the respective community, but most importantly, I wish to narrate SVD and the community present in the world.

In compliance with transparency, respect, and honesty, the analysis was produced without altering, changing, or concealing the profound elements of statements and reflections of the research partners. In regards to esoteric knowledge (see Chapter 1.4), I have established clear themes while conducting thematic analysis as mentioned earlier, to ensure that only relevant data was shared in order to safeguard traditional healing, cultural, and secret knowledge in relation to old Sámi drums and ritual practices. According to Virtanen et al. (2021) "for Indigenous methodologies it is important to ensure that Indigenous knowledge is protected from misuse and misinterpretation" (p. 39). They continue that "it is important to ensure that the research outcomes are communicated back to the owners of this knowledge in order to support them in their desire to be subjects rather than objects of research" (ibid.). In line with these discussions, a community outreach event in Kárášjohka is planned to take place after the submission of this master's thesis. The aim of this outreach is to distribute outcomes of this research to community members and other individuals interested in the topic.

3 Sámi Cultural Heritage: on Local and Global Status

3.1 Background on Old Sámi Drums

Harlin and Olli (2014) explain that "Sámi cultural heritage encompasses a variety of issues, from archaeological sites to artifacts, cultural landscapes, sacred sites, buildings, handicrafts, languages, folklore, and other forms of traditional knowledge" (p. 57). One of the specific focuses of this master's thesis is old Sámi drums. Magnani et al. (2018) explain that "artifacts and stories globally, originating from Indigenous communities, were carried away from Indigenous peoples by the thousands to fill books and museums, intended not for the communities who produced them, but for others interested in their preservation" (p. 1). In Sámi communities in the past, where there had been more fellow community members than strangers, outsiders had transformed communities and cultural heritage of significant value to these communities, in ways that have inflicted severe wound on both the community wellbeing and cultural practices. Nowadays Sámi museums' and communities' access and control over cultural heritage of significant value, like the old Sámi drums, stored away from Sápmi, are imposed by institutional limits and required licenses.

According to Virtanen et al. (2021) "the missionary activities and exploration of the traditional Sámi territories started to advance in the 1600s and 1700s, and the Sámi were in an in-between two understandings of reality and the surrounding world: their own Indigenous religion and spirituality, and the Christian faith" (p. 39). During that time, most of the Sámi

drums were confiscated, taken by force, and destroyed until in the 19th century by various authorities representing the contemporary nation states—the era of devastating nationwide destruction of Sámi drums. The nation states did not approve Sámi religion and spirituality of which the Sámi drums were part of. The drums represented "ungodly sorcery" (Grini, 2023; Porsanger, 2022; Willumsen, 2022). "Some of the drums that survived, ended up in European museums, in places such as Trondheim, Stockholm, Uppsala, Copenhagen, London, Cambridge, Paris, Rome, Berlin, Leipzig, and Meiningen. The legal ownership of most of those drums lie with the European museums. Today, there are 72 identified old Sámi drums in museum institutions and private collections, the majority of which exist outside of Sápmi" (Sámiid Vuorká-Dávvirat, 2022, p. 10).

Only four Sámi drums today are displayed in Sámi museums, and only two of those drums have been repatriated to Sápmi, meaning that the legal ownership has been transferred to the appropriate Sámi museum. This is the goavddis of Paul-Ánde and the Freavnantjahke gievrie (see Opitz, 2023).

3.2 The Multifaceted Nature of Sámi Cultural Heritage

The visual composition painted on the drumhead of the goavddis of Paul-Ánde mediates the realm where community life, ritual practices, beliefs, cultural values, and oppression intertwined. It provides a glimpse into the past. Sámi drums encompass cultural, intellectual, practical, social, and spiritual activities within Sámi material and intangible cultural heritage.

The linguistics around old Sámi drums, such as goavddis, gievrie, and goabdes, speak of the multifaceted nature of Sámi cultural heritage and its cultural integrity. Considering their high spiritual and cultural value, as well as the history of violent expropriation associated with them, old Sámi drums are not the easiest material to approach. In Clavir (2002) is stated that several policies, "have focused on accepting different cultural values, including the importance of intangible attributes of material heritage" (p. 41). For example, Clavir (2002) quotes Jukka Jokilehto, the former head of architectural conservation at the International Council of Museums (ICOM) in Rome, who stated at a 1994 workshop in Bergen, Norway, that "is not only about preserving the material, but also recognizing the spirit, the non-physical essence, and authenticity of the heritage, and its relation with society" (p. 41). This perspective aligns with the thematic of posthumanism and the consideration of non-human beings. Guttorm et al. (2021) cite Kuokkanen (2010), stating that "one way forward within

academia is to start collectively fostering epistemic pluralism within our workplaces and institutions, as well as research networks and collaborations" (p. 136).

The different drum designs vary by regions. Distinct drum designs consist of bowl drums, frame drums and flanged frame drums (Sámiid Vuorká-Dávvirat, 2022). The North Sámi term goavddis also varies by region, depending on from which Sámi community the drum originates from. The design consists of wooden body, drumhead made of deer/reindeer leather and the *ilbmi*/*máilbmi,*[28] world with characteristic patterns painted on the drumhead typically with red or brown color obtained by boiling or chewing alder bark. The painted worlds, realms, and patterns also vary by region. The creating process of drum is extremely demanding and time consuming, including carving, drying, polishing, and painting.

Old Sámi drums are not considered regular everyday utensils in contemporary Sámi context, bearing in mind that new values and purposes regarding Sámi drums are constantly being created. Drum embodies a kind of encoded cultural knowledge that cannot always be fully articulated with words—wisdom that transcends verbal communication. The modern digital era makes the drums part of new technical, social, and political spheres, and therefore call for renewed attention.

3.3 Cultural Heritage Management and Legislation

"Cultural heritage management is concerned with the identification, protection, and stewardship of cultural heritage in the public interest" and "it is part of a burgeoning interest in heritage generally and the subject of increasing discussion, debate, and controversy among both specialists and the public" (Oxford University Press, 2023). Cultural heritage can be "tangible, intangible, or digital, or it can be related to a cultural or natural environment and the aim is for cultural heritage to be highly valued and for its protection and fostering to be a collective responsibility shared by everyone" (Government Resolution for the Cultural Heritage Strategy 2023–2030).

In Norway the Sámi cultural heritage is managed and governed by a combination of national and international legislation, policies, and consultation with Sámi communities. *Kulturminneloven*, the Cultural Heritage Act in Norway was enacted in 1978 and "the

[28] North Sámi word for the realm(s)/world(s) painted on the drumhead.

purpose of this Act is to protect archeological and architectural monuments and sites, and cultural environments in all their variety and detail, both as part of our cultural heritage and identity and as an element in the overall environment and resource management" (Government.no, 1978). The Act enforces authorities to take necessary measures to protect and preserve cultural heritage.

Harlin and Olli (2014) explain that in "1994 *Sámi kulturmuitoráđđi*, the Sámi Cultural Heritage Council, managed by the Sámi Parliament in Norway, began overseeing Sámi cultural heritage. Later on, the Department of Environment and Cultural Heritage took over in 2001. Since 2002, the Sámi Parliament has been in charge of the political administration of Sámi museums in Norway" (p. 57). Therefore, SD is often the cooperating body together with Sámi museums in repatriation requests.

Indigenous Sámi cultural heritage is protected by international agreements, aiming to safeguard the rights of Indigenous communities worldwide. Norway and Denmark do not have federal systems specifically addressing Indigenous Sámi cultural heritage like some other countries, such as the United States. Nicholas et al. (2022) explain that the Native American Graves Protection and Repatriation Act (NAGPRA) became law in the United States in 1990, "directing repatriation practices for institutions in the United States that receive federal funding" and "both laws require consultation with tribes as part of the process of identifying cultural affiliation of human remains and associated funerary objects" (p. 60). Walsh (2019) concludes that NAGPRA "requires institutions that are receiving federal funds to inventory all collections of Native American human remains and cultural objects" (p. 9). On an international scale, legislation exists for the protection of Sámi heritage rights: Norway and Denmark have signed UNDRIP (see Chapter 2.2). The protection offered by NAGPRA and "state laws have resulted in increased tribal control over cultural heritage" (Hollinger et al., 2022, p. 86).

The management of digital heritage presents a novel challenge within the domain of heritage management, since the original context of heritage management has been focused on tangible heritage. The United Nations Educational, Scientific and Cultural Organization (UNESCO) describes digital heritage as follows:

> Digital heritage is made up of computer-based materials of enduring value that should be kept for future generations. Digital heritage emanates from different communities,

industries, sectors and regions. Not all digital materials are of enduring value, but those that are require active preservation approaches if continuity of digital heritage is to be maintained (UNESCO, 2024).

Due to its novelty, there is currently or legislation specifically addressing digital heritage within Sámi context. Therefore, the responsibility for digitization guidelines and management of subsequent research data often falls on respective museum institutions and repositories, which highlights the importance of ethical considerations in digitization processes of Sámi cultural heritage. Overall, cultural heritage management plays a crucial role in facilitating access to cultural heritage and determining how they are controlled within institutions or other contexts.

4 RUOKTOT Exhibition: The 50th Anniversary of Sámiid Vuorká-Dávvirat

4.1 Precursos of the RUOKTOT Exhibition

The RUOKTOT exhibition production tracks back to 2020, when Porsanger, SVD museum leader, started to outline the exhibition concept and design. Both Porsanger and Olli we aware of the fact that the loan agreement regarding Paul-Ánde's goavddis was about to expire in 2021. Already in 1978 SVD asked for the loan of the goavddis from NM, and in 1979 the goavddis was transferred to SVD. The loan agreement was active from 1979 until 2021, and during that time the loan was renewed approximately every five years. After 2021 the loan agreement would have needed to be renewed, which is a bureaucratic process. In 2006, SVD raised a formal claim for the transfer of ownership of the goavddis, since the goavddis originates from Northern areas of Sápmi and the drum is of North Sámi design and use, therefore qualifying for the request to SVD, since SVD is situated at the heart of the North Sámi community in Kárášjohka area (Porsanger and Olli, focus group discussion, March 23, 2023).

In 2020 when the loan agreement was about to expire in December 2021, Porsanger came with an idea: to create an exhibition to draw attention to Paul-Ánde's goavddis and the matter to gain legal ownership over the goavddis. Both the board of RDM and SD gave their support in this matter. All of a sudden in 2020, SVD had unsolicited help coming from another direction: a call to communities, institutions, and Indigenous peoples from UNHRC. This letter was about best "practices, challenges, and projects related to ceremonial objects, human

remains, and intangible cultural heritage under UNDRIP" (United Nations, 2020). As the head of department for RDM and SVD, both Porsanger and Olli agreed to join this call—this was about the goavddis of Paul-Ánde, a non-human being of high spiritual value to the local Sámi community (Porsanger and Olli, focus group discussion, March 23, 2023).

According to Porsanger, the purpose was to make alliances with Sámi museums in Norway. Most of them joined and together they wrote a joint report in Norwegian, which was then translated into English (A/HRC/45/35, 2020) and finally submitted to the United Nations (UN). Prior submitting the report, Porsanger and Olli informed SD and the Ministry of Culture on the Norwegian side about the joint report. The head of department at RDM and SVD decided to take Indigenous sovereignty, referring to self-determination over cultural heritage material of significant value. They intended to write a report that reflected their commitment to those principles. In 2020 Porsanger and Olli encouraged fellow Sámi community members to give their input: what were their perspectives and desires regarding the goavddis, while drafting the report to UNHRC (Porsanger and Olli, focus group discussion, March 23, 2023). While Sámi museums wrote their own joint report, SD and the Ministry of Culture in Norway submitted their own reports to the UN, but they attached the joint report made by the Sámi museums to their own submissions. All the reports were ultimately sent to the United Nations Expert Mechanism on the Rights of Indigenous Peoples (EMRIP) and the Office of the United Nations High Commissioner for Human Rights (OHCHR) (Porsanger and Olli, focus group discussion, March 23, 2023).

In 2021, after going through all the reports, the UN made recommendations to respective nation states, including Norway, stating that they must take measures to eliminate discrimination and negotiations must be conducted with the relevant source communities regarding sacred cultural heritage material (Porsanger and Olli, focus group discussion, March 23, 2023).

After submitting the joint report, Porsanger started to expand the exhibition concept and design further: the RUOKTOT exhibition concept crystallized around the idea of visualizing the absence of old Sámi drums within their source communities, by integrating 3D digital representations of these old Sámi drums into the exhibition. According to Porsanger, the objective was "to draw attention to absence" of old Sámi drums in Sámi context (Porsanger and Olli, focus group discussion, March 23, 2023).

Since 2019, SVD has employed various 3D imaging and modeling methods, including structured-light scanning and photogrammetry, to document heritage objects and digitally preserve 3D digital representations and material from the collections (Porsanger and Olli, focus group discussion, March 23, 2023).

Prior creating 3D digital representations of old Sámi drums for the RUOKTOT exhibition, Porsanger invited Sámi museums from Norway, Sweden, and Finland to collaborate with RDM and SVD, which became invaluable partners: Saemien Sijte in Snåase,[29] Árran Julevsáme guovdásj in Ájluokta,[30] and Siida Sámi Museum in Aanaar[31] (Porsanger and Olli, focus group discussion, March 23, 2023).

4.1.1 Historical Background on the Goavddis: From the Royal Danish Cabinet of Curiosities to Nationalmuseet

After the murder of Paul-Ánde in 1692, "Finnmark Magistrate Niels Knag brings the drum [goavddis] with him when he travels to Copenhagen and in 1693 the drum [goavddis] becomes part of the RDCC" (Hagen, 2023, p. 6), established by Frederick III of Denmark around 1650 (Opitz, 2023, p.1). Appelt, senior researcher and curator of modern history and world cultures at NM explains that when NM opened in 1845, the collections from the RDCC were included in this newly built museum. The collection of artifacts and heritage objects part of RDCC "represent the historical period of 1580–1820 and has, over time, been considered one of the world's foremost – and best documented – ethnographic art collections" (Porsanger, 2022, p. 84).

4.1.2 Precursors of the Repatriation Claims of the Goavddis at Sámiid Vuorká-Dávvirat

Shortly after SVD museum building was completed in 1972, the staff quickly recognized the need to display an old Sámi drum originating from Sápmi, specifically in relation to the North Sámi community. In the 1970s, the identified old Sámi drums were displayed outside of Sápmi, in European and Nordic museums. None of the existing Sámi institutions in the Arctic legally owned any old Sámi drums. The SVD staff decided to ask permission from the

[29] In Norwegian Snåsa.

[30] In Norwegian Drag.

[31] In Norwegian Enare.

museums in Sweden and Denmark, to loan one of the old Sámi drums in their collections for exhibition display at SVD (Porsanger, 2022). In 1978 under the leadership of Mari Teigmo Eira (1945–2023), the museum leader at SVD then, authorized an inquiry, and one museum accepted: SVD sought to loan the goavddis of Paul-Ánde from NM. Since 1979 the goavddis has been at the premises of SVD on a long-term loan. Regardless its physical presence at SVD for decades, it was not until January 2022 when the legal ownership of this goavddis was transferred to SVD. This goavddis is the first Sámi cultural heritage in the world to be repatriated from abroad to Sápmi (Porsanger and Olli, focus group discussion, March 23, 2023).

4.1.3 Repatriation Process of the Goavddis: Criterias and Responsibilities

> It [the repatriation of the goavddis] was not an easy decision, but it was a necessary decision.
>
> Pedersen (personal communication, September 12, 2023)

Like any other group of people, the Sámi community members held a variety of opinions about the legal and appropriate repository for the goavddis. The objections were not against the return of the goavddis itself, but the problematisation of the geographic place where the goavddis should be placed. These discussions were on a public level and they often were personal opinions. By 2021, unity existed on the general principle of its place at SVD (Porsanger and Olli, focus group discussion, March 23, 2023). In the domain of Indigenous cultural heritage, sometimes overlapping territorial and cultural claims happen.

Pedersen, the head of research and collections of modern history and world cultures at NM, adheres to context specific cases of repatriation of cultural heritage in museum domain. Both Pedersen and Appelt cite to one of the largest repatriation processes at NM. The significant repatriation project Utimut (see Chapter 2.2) resulted in return of a staggering 35,000 artifacts and heritage objects from Denmark to Greenland, which makes this repatriation project one of a kind. Appelt continues that 22 years after the Utimut project, a joint fieldwork is still being conducted in Greenland between NM and the Greenland National Museum and Archives/Nunatta Katersugaasivia Allagaateqarfialu. Pedersen adds that repatriation "is always different from case to case and it is also important that we regard it as case to case, there is no algorithm," meaning that due to the multifaceted nature of cultural heritage housed in museums and repositories, repatriation efforts should be carefully navigated, taking into

consideration the conservation and preservation aspects of the desired material to ensure its longevity, and the status and meaning of the material to its respective safeguarders. Pedersen continues that it is very rare that an object from RDCC is repatriated, and the goavddis is also seen as a very important object to Danish history. Pedersen continues that because the goavddis was part of the RDCC collections, it was classified as “Enestående National Betydning” (ENB), which means outstanding national importance. This status applies to all material part of RDCC collections. ENB status was established in the 2000s. Therefore, the meaning of the goavddis extends beyond the confines of Sámi culture and communities, resonating also within the national histories of both Denmark and Norway. According to Magnani et al. (2023), “Sámi and other Indigenous perspectives on museum holdings are often grounded in different values compared to mainstream institutions, which tend to cherish 'complete' —that is temporally and geographically exhaustive—collections, representing a diversity of human cultures. Often, mainstream museums are structured around a person who conducted the gathering, providing credit to the collector and their desires and knowledge. In some cases, these prioritizations can overshadow contemporary Indigenous reconnection” (p. 4). Appelt stresses the fact that the repatriation of the goavddis was a layered matter. Additionally, to the unique ENB status of the goavddis, the repatriation claim stretching across national borders made it more complex: SVD located in Norway, claiming ownership over the goavddis, which was owned by NM in Denmark, transformed the case to political level.

4.1.4 Proceeding Forward: Letter to the Queen and Recommendation to the Ministry

It was not just SVD who was requesting the goavddis back to Sápmi: also SD joined the request to return the goavddis to Sápmi, albeit within the past years (Porsanger and Olli, focus group discussion, March 23, 2023). The former SD President, Aili Keskitalo, “wrote a letter to Queen Margrethe II of Denmark. The contents of the letter, dated 21 September 2021, were regarding the permanent return of the drum [goavddis] to Sápmi and the Sámi people” (Hagen, 2023, p. 5). According to Hagen (2023) “Her Majesty the Queen of Denmark did not have been able to do much in this special case” (p. 5).

According to Appelt, movement of precious material culture, such as the goavddis, which held significant ENB status, requires approval and authorization from the Ministry of Culture of the respective country. In this case, NM required approval from the Ministry of Culture of

Denmark. The role of NM was to support the recommendation of the transfer of ownership of the goavddis to SVD (Appelt, personal communication, June 16, 2023). Therefore, in November 2021, NM "concluded that it [NM] is willing to transfer the ownership of the drum [goavddis] to SVD and submitted its professional recommendation to the Danish Ministry of Culture" (Hagen, 2023, p. 7).

An official press release in DR in 2022 states that the Minister of Culture grants permission for the repatriation, or "udskillelse" (see Chapter 1.1) of the goavddis (DR, 2022). In this press release, the former Minister of Culture of Denmark Ane Halsboe-Jørgensen, stated that in accordance with Museum Act § 11, subsection 2 [museumslovens § 11, stk. 2], NM has requested permission to repatriate the goavddis, which had been on loan to SVD for over forty years. The Ministry of Culture granted the permission. Halsboe-Jørgensen continued in the press release that "according to the Museum Act § 11, subsection 2 [museumslovens § 11, stk. 2], state museums can sometimes remove material from their collections with permission from the Minister of Culture. In this case, permission is granted because the drum [goavddis] has been on long-term loan to SVD and has special significance to the area" (DR, 2022).

The matter of repatriation of the goavddis was "revived in Autumn 2021 and the beginning of 2022 involving SVD, SD, NM, the Danish Royal family, the Ministry of Culture and Equality in Norway, the Ministry of Culture in Denmark, the Nordic Council and a number of politicians from various parties" (Hagen, 2023, p. 6). According to Porsanger, the central objective was to align with Sámi perspectives, emphasizing that the goavddis truly belongs in Sápmi, reflecting Sámi identity and heritage (Porsanger and Olli, focus group discussion, March 23, 2023). The ownership of the goavddis was officially transferred to SVD in January 2022.

4.2 RUOKTOT Exhibition Design and Content

> We wanted to make this exhibition from the Sámi perspective, based on our values and our understanding of our spirituality and what happened to our ancestors when the drums were expropriated. Porsanger (focus group discussion, March 23, 2023)

Porsanger highlights that during the RUOKTOT exhibition planning, it was crucial to incorporate Indigenous concepts following the main principles of Indigenous research methodologies: "For me, it was natural to begin with this Sámi language concept, máhcaheapmi" (Porsanger and Olli, focus group discussion, March 23, 2023). Máhcaheapmi

is a North Sámi term related to repatriation. According to Porsanger, this decision was achieved with the help of local Sámi community elders: "I discussed this issue [concepts of *máhcahit* and máhcaheapmi] with the elders because we have often meetings with them […], I asked what do they think about the concept of máhcahit […], they said that this concept is perfect, because it tells about how our noaidi made people to bring the stolen things back. And so this is the same parallel with the drums, maybe not stolen in a way directly […], but taken away from our people in one way or another" (Porsanger and Olli, focus group discussion, March 23, 2023).

The RUOKTOT exhibition was divided into two rooms, each room representing distinct concepts: Drums and Art section was located in the smaller room, displaying the art, craft, and overall *duodji*[32] of contemporary Sámi artisans and craftsmen, known as *duojár*.[33] This section drew inspiration from the historical context of old Sámi drums.

Figure 1 - The goavddis displayed at the center of the RUOKTOT exhibition main room, surrounded by 3D drum animations crafted by Åsmund Bøe. On the left side: 3D animation of Duortnossámi govadas, on the right side: 3D animation of Freavnantjahke gievrie. Photo: Paula Rauhala, March 2023

The 3D digital representations of Sámi drums, later animated, and the original goavddis of Paul-Ánde, were exhibited in the main room, focusing on historical context of old Sámi drums and Sámi religion, spirituality, and sacred cultural practices. Paul-Ánde's original goavddis was placed in the middle of the exhibition room, inside a protective glass display case with humidity sensors. The audiovisual experience of the RUOKTOT exhibition was accompanied by stories of the Sámi drums, which one could listen through installed iPads and headphones. The stories were collaboratively created with partner museums, written in three Sámi languages by Sámi authors, translated by Sámi translators, and narrated by Sámi artists. In collaboration with partner museums, the 3D animations of the drums were accompanied by drum biographies hung on the walls. These biographies included information such as the acquisition history of the original drum, ancestry, transport routes of

[32] North Sámi term for traditional and contemporary handicrafts and products.

[33] Sámi artisan or craftsman in North Sámi is known as duojár.

the drums in Europe and Sápmi, including the location of the original source communities of the drums and the drums' current locations in European museums, measurements, materials, symbols, repatriation claim status, and expropriation dates. The visualization of the transport routes of the drums in Europe served as an illustration regarding the absence of the drums. The drum biographies were an integral part of the exhibition concept, since the approach was biographic (Porsanger and Olli, focus group discussion, March 23, 2023).

4.2.1 Digitization of the Chosen Drums

According to Porsanger, the Sámi drums for 3D imaging and modeling processes, to be exhibited in the RUOKTOT exhibition, were selected based on various considerations. Both Porsanger and Olli highlight that it was important to represent different Sámi areas, or as stated on the exhibition boards, ancestry of the drums, through the chosen drums: Lule Sámi, North Sámi, and South Sámi areas (Porsanger and Olli, focus group discussion, March 23, 2023).

Porsanger made an initial list of 12 Sámi drums. In collaboration with Saemien Sijte, Árran, and Siida, they had several meetings to go through all the drums. In the beginning of 2021 they landed on the list of five selected drums, including the the goavddis of Paul-Ánde and four other drums: *Giemasámi rumbu,*[34] *Duortnossámi govadas,*[35] *Julevsáme*[36] goabdes, and Freavnantjahke gievrie (Porsanger and Olli, focus group discussion, March 23, 2023).

Together they proceeded to write letters to inquire to digitize the chosen drums in the European museums, where the drums were currently housed and owned by: GRASSI Museum für Völkerkunde in Germany, where the Giemasámi rumbu is currently housed and owned by. Statens Historiska Museer in Sweden owns the Duortnossámi govadas, and the drum is currently on loan and exhibited at Ájtte sáme guovdásj[37] in Sweden. Also, the Julevsáme goabdes is housed and owned by Statens Historiska Museer, and this drum is also currently on loan and exhibited at Ájtte. At the time in 2021, Meininger Museen in Germany owned and housed the Freavnantjahke gievrie, but this drum was repatriated to Saemien Sijte in 2023. Each letter was sent individually to these museums together with the Sámi museum

[34] North Sámi term for a Sámi drum originating from the historical Kemi Lappmark region.

[35] North Sámi term for a Sámi drum originating from the historical Torne Lappmark region.

[36] Lule Sámi area.

[37] Ájtte is a Swedish mountain and Sámi museum in Jåhkåmåhkke/Jokkmokk.

who had chosen the respective drum. All the letters got positive response from all the museums. The goavddis of Paul-Ánde, selected for the digitization project, was already at SVD premises and was the first drum to be digitized (Porsanger and Olli, focus group discussion, March 23, 2023).

Porsanger traveled to Europe together with Magnani along with the 3D equipment from SVD. It was a 10 day trip. Prior to the travel, a joint letter signed by the partner museums was sent to museums in Europe, requesting the digitization of the selected old Sámi drums. At the time, as the only Sámi museum with its own 3D scanners, SVD was qualified and authorized by the partner museums to digitize the drums. An interesting note regarding authorization to handle old Sámi drums emerges in the documentary 'Máhccan – Homecoming' (2023), which is about the repatriation of Sámi cultural heritage, directed by North Sámi filmmaker Suvi West. In the documentary, West travels to Germany to see Sámi drums. Before seeing one of the drums in a German museum, she chooses not to see the Sámi drum, citing her status as an outsider to the respective Sámi community from which the original drum originates. Although Porsanger, part of the North Sámi community and an outsider to the South Sámi and Julev Sámi communities, and Magnani, an outsider to Sámi communities, were granted authorization by the partner museums to handle and digitize the chosen drums. This authorization was based on Porsanger's and Magnani's expertise in cultural heritage matters and 3D technologies, as well as Porsanger's extensive involvement in academia, focusing on Sámi religion and old Sámi drums—overall, Porsanger's legitimacy regarding Sámi cultural values, practices, and sensitivities around the old Sámi drums (Porsanger and Magnani, focus group discussion, April 24, 2023).

Before the digitization project in Europe, SVD had an agreement with the partner museums to receive the respective 3D models of the drums. Porsanger noted that the museums in Europe welcomed herself and Magnani with interest, particularly regarding their perspective on the cultural value of the drums to the local Sámi community. The first stop of the trip was in Leipzig, Germany, at the GRASSI Museum für Völkerkunde where Porsanger and Magnani created a 3D digital representation of Giemasámi rumbu. They continued to Meiningen, where the Meininger Museen is located. There they digitized the Freavnantjahke gievrie. From Meiningen they traveled to Jokkmokk, Sweden, to digitize two Sámi drums housed at Ájtte: Duortnossámi govadas and Julevsáme goabdes. Both of these drums in Ájtte are owned by Statens Historiska Museer in Sweden (Porsanger and Magnani, focus group discussion, April 24, 2023).

They 3D scanned the drums by using Artec 3D scanners and additionally, they used photogrammetry. After the 3D digital representations of the drums were created, Porsanger decided to create an animation based on the 3D models as part of the exhibition design, created by an external party based in Oslo, Norway (Porsanger and Magnani, focus group discussion, April 24, 2023).

Porsanger highlights an interesting aspect of the digitization journey regarding European museums' connections and interpretations of the Sámi drums in their possession. Porsanger states that "they [the Sámi drums] are significant to their [national] history, cultural history […], so they connect our [Sámi] cultural heritage piece to their historical persons who are important for them" (Porsanger and Magnani, focus group discussion, April 24, 2023). For example, the Freavnantjahke gievrie, used to be part of the collection of music instruments at Meininger Museen in Germany, until it was repatriated to Saemien Sijte in 2023 (Opitz, 2023, p. 33). In contrast, Sámi communities do not regard Sámi drums as musical instruments. Although it is the "source communities that initially ascribe value to their objects, when said objects are relocated to museums other meanings are attributed—and they often superimpose the original ones" (Cameron, 2007, p. 57).

4.3 Bridging the Ritual Gap: Opening of the RUOKTOT Exhibition

Writing the opening of the RUOKTOT exhibition is like narrating a ceremony. The various Sámi community members, researchers, politicians, scholars, students, authors, artists, colleagues, peers, activists all together joined to celebrate the return of Paul-Ánde's goavddis to Sápmi. The exhibition opened at SVD on April 12, 2022.

The opening ceremony of RUOKTOT – Sámi rumbbuid máhcaheapmi – Tilbakeføring av samiske trommer – The Return of the Sámi Drums, featured two great accomplishments: the legal ownership of the sacred goavddis was transferred to SVD. The other accomplishment was visually appealing: an integration of 3D digital representations of five Sámi drums accompanied by traditional Sámi storytelling during the opening.

The opening ceremony of the exhibition was commenced by a talented *juoigi*[38] Biret Ristin Sara. Her *luohti*[39] was a tribute to the goavddis and its adventurous journey from lying dormant to serving a purpose once again. Through her luohti and storytelling, Biret Ristin Sara's voice, sparking with energy, was accompanied by her skilful hand. She proficiently churned the air between herself and the glass display where the goavddis was exhibited, with the movement of her hand—renewing the relationship and the connection between the goavddis and the members of various Sámi communities that were present. Through her luohti, Sara told a story. According to Chatwin (1987), storytelling is among the earliest artistic expressions of humanity, originated within the oral tradition. Over time, its structure has adapted alongside societal shifts and advancements in media and oral storytellers, like Sara, frequently adjust narratives in response to audience feedback, fostering a shared collective experience. Chatwin (1987) continues that for example, the Australian Aboriginal storytelling tradition conceptualizes territory not as static land boundaries, but as a dynamic network of interconnected 'lines' or 'ways through'.

Refsland et al. (2007) conclude that "sung into existence by the ancestors, stories actually function as maps of their terrain" (p. 411). As a Sámi member of the local North Sámi community, I acknowledged and interpreted her performance as bridging the ritual gap. Sara took the place of a mediator—the Sámi community's affection for the goavddis resulted in traditional Sámi storytelling, mediated by Sara. The great drum ceremony built around the goavddis speaks of the value of sacred Sámi drums. Porsanger explains that "Sámi communities define the drums as powerful non-human beings. Every drum has its own persona and purpose to fulfil" (Porsanger and Olli, focus group discussion, March 23, 2023). Finbog states that "to me it has become clear that forging kinship comes from connecting with all your relations, be they human, non-human beings, entities, land and waters, or your surroundings, in deep respect and reciprocity" (p. 3).

After the drum ceremony, 3D animations of five Sámi drums were projected on three walls of the exhibition room. These 3D animations consisting of rotating images and sound of a beating drum attracted the gaze of the audience. The animations already dramatic in their size and motion, teased the audience with their unpredictability—sometimes dimming to black in

[38] Performer of Sámi vocal or musical expressions, both in traditional and contemporary contexts.

[39] Sámi vocal or musical expression.

moments of rotations and immediately after moving images of drums sparked the walls like ceaseless playing. SVD along with its RUOKTOT exhibition entered the radiant realm of 3D technology. Traditional storytelling and 3D animations were not incompatible but rather complementary. It resulted in community-based solution for tackling the ritual gap in contemporary era.

For some groups and individuals, “museum objects bear witness to ways of life and thinking that disappeared or changed through histories of colonization” (Magnani et al., 2018, p. 2). This includes the nationwide destruction of old Sámi drums centuries ago (see Chapter 3.1). Given the extensive history of Sámi drums, they encompass a variety of encoded cultural knowledge, making them of great interest to Sámi communities.

5 Interpreting Repatriation: Diverse Perspectives and Practices

5.1 Concepts and Practices in Relation to Repatriation

Before delving into the potential use of 3D technologies, specifically 3D imaging and modeling methods, in repatriation contexts in Sápmi, it is crucial to examine both traditional repatriation concepts and the ones emerging in the digital era.

Porsanger explains that the term repatriation was raised to public discussions during World War I and in the United States under the Vietnam War, when fallen American soldiers were transported back to the United States. This process was called repatriation (Porsanger and Olli, focus group discussion, March 23, 2023). In its simplest, repatriation is the process “of returning something to its owner or country of origin” (Tythacott & Arvanitis, 2014; Walsh, 2019, p. 8). Repatriation as a practice has become ubiquitous also among the domains of museums and heritage repositories. In this research project the focus pertains specifically to Indigenous insitutions and source communities claiming ownership or custodianship over cultural heritage of significant cultural value.

Porsanger explains that the RUOKTOT exhibition employs North Sámi term máhcaheapmi, in the meaning of repatriation of cultural heritage (Porsanger and Olli, focus group discussion, March 23, 2023). “According to Sámi oral tradition, a skillful spiritual expert, a noaidi, can possess powers to identify objects that have been stolen or taken away without permission. Often the drum was used for that purpose. This process is called máhcahit in North Sámi. The

traditional Sámi conceptualization of máhcaheapmi is coherent with the need to return the sacred Sámi drums to Sápmi" (Sámiid Vuorká-Dávvirat, 2022, p. 12).

Through cultural concepts and values, the RUOKTOT exhibition mediates intellectual and ontological perspectives on Sámi cultural heritage. By basing my research on Sámi cultural understandings, as explained by Holmberg (2018), I have prioritized the incorporation of Indigenous methodologies. Therefore, I have not engaged in the discussion of the validity of Sámi concepts but have rather strived to relate to them as something reciprocal and relevant on local and global level (p. 5). Porsanger concludes that "this repatriation in itself, the term in English […], it has [gender] connotations like re-*patriation* and […] re-*matriation* and so on, so for me the process of return of this Sámi drum [goavddis], return home, does not have any kind of gender connotation like repatriation or rematriation" (Porsanger and Magnani, focus group discussion, April 24, 2023).

Olli elaborates on the potential of 3D technologies in relation to the concept of digital repatriation. Olli interpreted the potential of 3D technology for repatriation, as a form of digital repatriation. Olli highlights that while culturally significant Sámi material culture is being housed outside of Sápmi in mainstream museums and repositories, it presents a possibility for Indigenous institutions and source communities to create 3D digital representations of the desired material kept in mainstream museums and repositories: "We can go there [mainstream museums and repositories] and see the objects, make a copy [3D model] and at least have something." Porsanger on the other hand approaches the concept of digital repatriation with caution, because due to the novelty specifically of 3D imaging and modelling methods in Sámi context, it may be rushed to label it as digital repatriation (Porsanger and Olli, focus group discussion, March 23, 2023).

According to Walsh (2019) "digitizing intangible heritage is the most common form of digital repatriation today" (p. 36). It is worth noting that while this concept is widely explored and employed in North American contexts, it is relatively new in Sámi context. Instead of directly inquiring about digital repatriation in Sámi context, it may be more appropriate to explore the contribution of 3D technologies, such as 3D imaging and modeling methods, to conversations about repatriation of cultural heritage in Sápmi.

5.2 Thematic of Ownership of the Goavddis

The goavddis does not belong to the Sámi museum, it belongs to the Sámi people. Porsanger (focus group discussion, March 23, 2023)

SVD has invested in purchasing Artec 3D scanners. SVD does not only focus on documenting their collections by creating 3D digital representations of material culture. They have also invested in advanced technology to create a 360° virtual tour of the RUOKTOT exhibition in 2023, available online through the Matterport[40] platform. In terms of the repatriation of the goavddis in RUOKTOT exhibition at SVD, this took a long time partly due its significant ENB status, making it relevant also to Denmark's national history.

In the following, I will outline the considerations behind these investments for the SVD. Porsanger elaborates on the thematic of ownership in relation to repatriated Sámi cultural heritage: "This concept [of ownership] is totally alien for our [Sámi] understanding of belonging […], this Sámi drum [goavddis] belongs to the Sámi people and it is available for the Sámi people through by the means of our own museum [SVD] in our exhibition." Olli adds that "it [goavddis] should be in Sápmi and it should be at the museum that can handle the issues […], the knowledge of how to do conservation and the pesticide issues" (Porsanger and Olli, focus group discussion, March 23, 2023).

Harlin and Olli (2014) highlight that "repatriation is not only a question of the transfer of ownership, control over artifacts or human remains. It is also a question of traditional knowledge and values" and that "it is considered important to get the oldest and rarest objects returned", since such material "includes sacred remains of traditional religions which have symbolic meaning" (p. 67). These are considerations central to the uses of technologies in the RUOKTOT exhibition. Through digital means, the Sámi drums are made available in new ways, both inside and outside museum, they can be displayed and approached without fear of pesticides, as highlighted by Olli (focus group discussion, March 23, 2023) but also

[40] Matterport is a technology company that specializes in creating 3D models of physical spaces. It offers a platform and software that allows users to capture, edit, and share 3D virtual tours of real-world environments (Matterport, 2024).

displaying without fear of breaking religious taboos, exposing the drums to larger museum audiences.

Similarly, in North America, newly established "Indigenous cultural centers have experiment with developing collection management systems that are more responsive to local cultural categories, vocabularies, and protocols regarding object storage, description, access, and use in contexts of ceremony, study, or instruction" (Glass & Hennessy, 2022, p. 166). Hollinger et al. (2022) also articulate that In North American contexts, NAGPRA has "also provided the impetus for agencies, museums, and tribes to reevaluate the concepts of ownership and authority to create new partnerships for the stewardship of human remains and other cultural items" (p. 86).

Tythacott and Arvanitis (2014) explain that "concepts of custodianship and community consultation, rather than possession, now tend to mark the language of many" (p. 5). They continue that "however, museums seem less able to initiate and sustain such consultations when it comes to cultural heritage that is attached to perceptions and constructions of national identity" (p. 5). Tythacott and Arvanitis (2014) further highlight that "museums should move beyond Western conceptualizations of objects" (p. 7). The Sámi cultural concept of máhcaheapmi brings an appropriate dialogue into the discussions of ownership in relation to repatriation, since máhcaheapmi entails the Sámi communities or individuals as active safeguarders of cultural heritage rather than passive owners. It is apparent that SVD has found innovative solutions from cultural traditions to matters, such as thematic of ownership in cultural heritage field, that are not directly addressed, or in some cases not even recognized by dominant museum structures. Virtanen et al. (2021) highlight that by "taking Indigenous values seriously has especially impacted the development of a strong ethical framework in research" (p. 18), which is crucial for the development of more holistic heritage management protocols and guidelines within the Indigenous Sámi heritage context.

Máhcaheapmi aims to maintain and develop cultural justice and sensitivities in museum domains, foster community involvement, and therefore not only prioritize the goal of repatriating desired material but also emphasize a project-oriented approach, centered around the principles of máhcaheapmi. Regarding North Sámi linguistics, such as máhcaheapmi, "Indigenous languages reflect and construct a reality of transformation in their holistic representations of processes that accentuate interaction, reciprocity and respect, and relational accountability" (Virtanen et al., 2021, p. 51). "Language helps to choose, recognize, and

understand something as knowledge. Indigenous conceptualization reflects the ontological assumptions that are specific to a particular Indigenous culture" and "Indigenous terminology about various phenomena of specific interest for the way of life and life maintenance can and have been used to enrich and deepen the scientific understanding of these phenomena" (Virtanen et al., 2021, p. 38).

6 Digitization of Indigenous Cultural Heritage

6.1 The Art of Reproduction: Historical and Contemporary Perspectives

To elaborate the research question, I will describe the evolution of 3D technologies, which has its roots in the history of reproduction—at its simplest it involves gathering information from the original material (Walsh, 2019). Hollinger (2022) explains that "reproduction or duplication of 3D objects has been employed for thousands of years" (p. 182). He cites Harding and Fokkens (2013) and Goldsborough (2014), explaining that "early technologies centered on permanent molds and casting of ceramics and metals, primarily for tools and ornaments and die stamping of items like coinage." Hollinger (2022) highlights that "the ability to mass produce items with uniformity was a major innovation. Plaster casts of cultural heritage objects became popular among royalty during the Renaissance of the sixteenth and seventeenth centuries as a way of circulating art and architectural items, particularly from ancient Greek and Roman sources" (p. 182).

The practice of reproduction and duplication has come a long way. The practice of 3D replication and duplication has taken on new forms and methods and become ubiquitous in various disciplines. Another pivotal moment for 3D technology emerged in the 1970s and 1980s, coinciding with the computational, or as some sources suggest, the computer revolution. Magnani et al. (2020) highlight that "the computational revolution has shaped diverse domains of scholarship from the humanities to the sciences" (p. 737). Hollinger (2022) cites Ebrahim (2014), who explains that the computational revolution, particularly concerning CT scanning, was "first introduced in the 1970s, CT scanning, also known as computerized axial tomography (CAT) or x-ray computed tomography (x-ray CT) scanning, was initially developed for medical procedures. 3D laser scanning, developed in the 1960s, was slow and inaccurate until it was combined with computing capabilities in the late 1980s and 1990s, when it began to be applied to animation" (p. 183).

The evolution and current state of 3D technologies demonstrate a wide community of users and its applications within the cultural heritage domain. In cultural heritage context, digital technologies have predominantly emerged from archaeology, from visualizing ancient findings to the reconstructions of historical edifices by institutions like the Ministry of Antiquities in Egypt (2020), and presentation of cultural artifacts, heritage objects, and spaces through online exhibitions, like the Museum of Indian Arts & Culture (2024) and SVD have done (see Chapter 5.2). Furthermore, institutions like the Smithsonian Institution engage Indigenous communities through artifact and heritage object replication using 3D technology (see Chapter 1.1). Additionally, digital 3D models have been used for study, preservation, and restoration of cultural heritage material (Dellepiane et al., 2017). In the cultural heritage context, photogrammetry and laser scanning are prominently integrated (Walsh, 2019, p. 51), attributed to the "declining costs of and improvements in computer technology, including both hardware and software advances" (Magnani et al., 2020, p. 738). SVD employs both photogrammetry and laser scanning in documentation of material culture, and more recently, LiDAR technology has been integrated into their outdoor building documentation processes. These various applications highlight the flexibility and significance of 3D technologies in the cultural heritage domain, shifting the perception of 3D technologies as an alternative practice to actively exploring its potential within the domain.

The utilization of 3D technologies in Indigenous cultural heritage contexts leads to critical questions: who owns and manages the captured data, meaning metadata and digital 3D models? How are they negotiated and stored? How does law and context specific policies demarcate ownership, access, and management of this digital data? How can Indigenous museums and repositories assert their authority over digital heritage? This is all part of Indigenous data sovereignty.

6.2 Indigenous Data Sovereignty

Indigenous data sovereignty intersects in Indigenous digital heritage contexts in several ways, including legal, ethical, and cultural considerations. Kukutai and Taylor (2016) write that "In July 2015, an international group of scholars, representatives of indigenous organisations and government personnel from the CANZUS group of Anglo-settler democracies—Canada, Australia, Aotearoa/New Zealand and the United States—gathered in Canberra to participate in a workshop, 'Data sovereignty for indigenous peoples: current practice and future needs'"

(p. 1). The purpose was "to identify and develop an indigenous data sovereignty agenda, leveraging international instruments such as the UNDRIP" (ibid.).

Walsh (2019) emphasizes the importance of considering matters of "ownership and accessibility" when cultural heritage material becomes accessible in the digital realm (p. 39). In cultural heritage contexts, when 3D digital representations are created, the following questions arise: who has ownership over the captured data: the institution that created the 3D model or an external party commissioned by the institution? Who is allowed to access this 3D model, and is it available for download?

The term 'digital colonialism' describes the act of possessing data "without the consent of its originating community" (Walsh, 2019, p. 39). In the case of SVD's digitization project of the old Sámi drums, the situation is less complicated to address, since the digitization was conducted by SVD staff, and the cultural heritage digitized was part of Sámi heritage. Therefore, it was culturally appropriate for SVD to digitize the drums. However, the concept of digital colonialism would apply if, for example, someone would download, distribute, or 3D print the 3D models of the Sámi drums without consent. Therefore, it was important for Porsanger and Magnani to elaborate on research data management during their digitization journey in Europe.

There are no paramount guidelines or universally recognized legislation regarding Indigenous data management. However, "the CARE[41] Principles for Indigenous Data Governance were created and published by Global Indigenous Data Alliance (GIDA) in 2019." They assert that "research involving Indigenous Knowledges, data and specimens should provide Collective Benefit to the Indigenous rights-holders of that data, that Indigenous Peoples should have the Authority to Control their own data, and that such data should be collected and managed Responsibly and Ethically" (The University of Arizona, 2024). Additionally, the creation of the CARE Principles was "in response to the need for Indigenous communities to have control over the application of data that pertains to them" (GIDA, 2024; Snipp, 2016). In some cases, institutional guidelines regarding digitization of cultural heritage are inspired by

[41] CARE stands for "Collective Benefit, Authority to Control, Responsibility, and Ethics" (GIDA, 2024; Snipp, 2016).

and follow the structure of the CARE Principles (Bodard and Walsh, focus group discussion, July 28, 2023).

"Indigenous communities and their collaborators have been increasingly presented with opportunities based on technological innovation" (Magnani et al., 2018, p. 2) Even if "digitisation of cultural heritage has become more and more present within the GLAM"[42] (Bodard et al., 2023, p. 11) and 3D technologies are largely employed and explored in the context of Indigenous cultural heritage, Indigenous communities have voiced their valid concerns. For example, Hopi groups, amongst communities of Native Americans in the United States, "are deeply suspicious of any graphic representation of their culture, particularly ritual knowledge, and practice" (Isaac, 2007, p. 82). According to Hollinger and Csoba DeHass (2018), "the lack of regulations, guidelines, and widely shared best practices regarding 3D modeling of Indigenous heritage makes it one of the most important roles of researchers to thoroughly explain the nature of 3D models and the possible dangers of misuse and misappropriation to the collaborating communities" (p. 7).

It is crucial for museums and repositories to establish protocols and practice regarding digitization, Indigenous digital heritage, and subsequent research data, namely the ownership and access to digital data and 3D digital representations, in order to avoid misuse and misappropriation of digital heritage.

6.3 Navigating Ethical Considerations in Digitization

6.3.1 Environmental and Cultural Sustainability

Walsh and Bodard both highlight the importance of access, control, and privacy regarding ethical considerations associated with 3D models of Indigenous cultural heritage. Walsh has history in handling and digitizing sensitive Indigenous cultural material, by leading a university course in digitizing the original material. After the digitization process, access to the 3D models was granted only to university students enrolled in a particular university course and the digital models were used as learning resources. Regarding ethical considerations, or guidelines, in digitization generally, Bodard adheres also to the principles of environmental aspect: conducting digitization processes "at maximum resolution" requires

[42] Galleries, Libraries, Archives, and Museums sector.

rendering processes lasting for hours: “The computers running on high intensity use a lot of electricity” (Bodard and Walsh, focus group discussion, July 28, 2023).

Walsh states that ethical considerations in Indigenous cultural heritage contexts are crucial, specifically if the person who is conducting the digitization project, is an outsider to the respective source community, where the material is originating. Walsh encourages to ask the following questions, prior starting the digitization project of Indigenous cultural heritage: “What consultations have been done with communities? The objects, has there been a request for repatriation? Who is going to be handling the object, while digitizing it? How should it be handled? Who has access to it [3D model] and who is responsible for the long-term storage of the data?” (Bodard and Walsh, focus group discussion, July 28, 2023).

Bodard continues that, fundamentally, before taking on any digitization projects, it is crucial to consider whether the digitization of the desired material should be done at all? Regarding data dissemination, the CARE Principles advocate for “the right to refuse, the right to say 'no' to certain uses of data” (GIDA, 2024). Bodard summarizes that one of the most important things to keep in mind when elaborating on these matters, is the principle of “nothing about us without us.” Walsh advocates for consulting with members of the respective source community from the place of origin of the material and highlights the concept of ‘slow digitization’ (proposed by Prescott & Hughes, 2018), which contains everything that goes into digitization, the whole process, from the beginning to the end (Bodard and Walsh, focus group discussion, July 28, 2023). Both Magnani and Porsanger also emphasize that ethical considerations must be addressed from the very beginning of the digitization project. This includes decisions, such as 1) language used regarding naming files and 2) structuring of files. According to Porsanger, this is explained as “research data management.” These priorities were discussed during Porsanger’s and Magnani’s digitization project in Europe, focusing on the replication of old Sámi drums, prior the RUOKTOT exhibition (Porsanger and Magnani, focus group discussion, April 24, 2023). This led to the creation of “3D Data Management and Sharing and Indigenous Cultural Heritage in Museums: Guidelines for RiddoDuottarMuseat,” which was approved by the RDM board in 2022 (RiddoDuottarMuseat, 2022).

Magnani explains that because there are no consistent patterns regarding ethical considerations or guidelines, each institution, whether it is a museum or academic institution, operates with their “own set of understandings, often based on previous experiences with

photos or cases like 3D modeling." He explains, "it is a little bit of a dance between what your [SVD's] expectations are and then what all of these different, vastly different institutions expect." Porsanger reflects on their digitization journey with Magnani in Europe, saying that they have "contributed to an educational effort," meaning that the digitization project overall has enriched other European museums' knowledge about handling, both, 1) sensitive Indigenous cultural heritage and 2) captured data. Porsanger continues that the museums in Europe lacked institutional guidelines for managing this type of data, due to its quite recent introduction to the domain of research data management. This gap extended not only to mainstream institutions in Europe but also to Sámi museums, highlighting the novelty of 3D technologies in the domain of Indigenous cultural heritage globally and locally (Porsanger and Magnani, focus group discussion, April 24, 2023).

Olli adds that RUOKTOT exhibition production has contributed to the understanding of cultural integrity of physical material: as a supporting party in the digitization project of the old Sámi drums, Olli encouraged Porsanger and Magnani leave enough time to interact and communicate with the drums as if they were persons, undergoing digitization, stating that "it was important to explain to the drum that this [digitization] is part of the work that we need to do" (Porsanger and Olli, focus group discussion, March 23, 2023). As mentioned earlier, the Sámi communities define Sámi drums as non-human beings (see Chapter 4.3), which makes the drums not the most approachable material to digitize, versus everyday utensils, such as spoons and bowls. The same thematic was shared by Alex Lucas, NAGPRA's program manager and interim repatriation coordinator at the University of California, Berkeley, to an online journal Hyperallergic in 2023: "A lot of these items [sacred Indigenous objects and remains] are considered to be living and breathing, and need to maintain that cultural use, and that is something that practitioners in the field within museums have become a lot more aware of over time" (Hyperallergic, 2023).

These elaborations on environmental and cultural sustainability relate to ethical considerations that arise when digitizing Indigenous cultural heritage material, emphasis on material of high cultural and spiritual value to the source communities. These considerations are often specific to particular groups, sometimes conflicting with mainstream obligations or desires, such as matters related to open access.

6.3.2 Access and Privacy

Magnani underscores the kind of default setting regarding open access within academic institutions and advocates for critical approach to how Indigenous cultural heritage is made available digitally. He emphasizes that simply uploading 3D models online for unrestricted downloading or "placing them under a Creative Commons license" is not ideal—these decisions need to be also culturally sustainable. He recommends an open dialogue between museums, universities, and source communities to critically and carefully establish conditions for both open and restricted access, regarding digitized Indigenous cultural heritage. As an example, Porsanger highlights the Smithsonian Institution in the United States, which operates through a "specialized committee responsible for granting permissions for 3D scanning and subsequent publications" (Porsanger and Magnani, focus group discussion, April 24, 2023). The Digitization Program Office (DPO) supports discovery through digitization: "Founded in 2009 as a division of the Smithsonian's Office of the Chief Information Officer, DPO partners with others to increase the quantity, quality, and impact of digitized Smithsonian collections" (Smithsonian, 2024). Overall, Bodard, Walsh, Porsanger and Magnani highlight the importance of addressing ownership of digital data associated with tangible heritage. Porsanger suggests to contribute to this matter through ICOM. She states that it is necessary to integrate discussions about digital data ownership into the ICOM code of ethics, since most European museums adhere to the principles of ICOM (Porsanger and Magnani, focus group discussion, April 24, 2023).

Porsanger is concerned with matters regarding access and privacy of Indigenous cultural heritage, explaining that "we have learned through several examples from other Indigenous contexts but in particular publications of 3D models by the British Museum and other larger institutions, who make 3D models downloadable and publicly available, accessible." She continues that regarding 3D digital representations of Sámi drums, "we thought that we would not join this […], we will not make the [3D] model accessible and downloadable in this way […], but we cannot just store them [captured data] without letting anyone touch them or use them, so it must be a balance and the balance must be in the values of the institution which is storing and has decided to make these 3D images [3D models] or if this institution shares these files with other institutions, so it must be a mutual agreement […] with the third party so they share the same ideas about storage and sharing of the digital data." She concludes by stating that "how can we protect this [captured data] and how can we store and share this digital data." She also highlights the sensitive character of the old Sámi drums: "We thought

that since we started with one of the most sensitive items [drums] and because of the sensitive character of the drums […], and because of their religious connotations and […] the whole history connected to the drums, these files will be very precious […], so we felt responsible for how they will be stored" (Porsanger and Magnani, focus group discussion, April 24, 2023).

6.3.3 Challenges in Managing Cultural Data

Magnani et al. (2018) highlight that "in uninformed hands, these advances threaten to distribute indigenous heritage in culturally-inappropriate and uncritical ways, under the banner of open access" (p. 2). Both Porsanger and Olli raised concerns regarding misappropriation of open access to 3D models of Sámi cultural heritage. The 3D models could be irresponsibly downloaded and that could possibly lead to out-of-context 3D printing (Porsanger and Olli, focus group discussion, March 23, 2023). Isaac (2015) highlights similar concerns raised by Indigenous communities with restrictive knowledge systems, such as the Pueblos. Examples of communities were "cited to illustrate how potentially harmful this 3D printing technology could be if used in an inappropriate context" (p. 293). In order to avoid these type of appropriations, Bodard highlights the importance of Indigenous institutions and communities leading the digitization projects and not just being part of them (Bodard and Walsh, focus group discussion, July 28, 2023).

6.4 The Potential and Challenges of 3D Technology

6.4.1 The Potential of 3D Technology for Communities and Museums

Olli mentions the potential of 3D technologies, namely the 3D models of cultural heritage for logistics, concluding that "I will never recommend us to take the drum [goavddis] travelling around and telling our story, but we can take a digital copy [3D model] with us all around the world, to talk about our history who we are as a people. I think that the digital world gives us new possibilities, taking our place in the world history and the world society" (Porsanger and Olli, focus group discussion, March 23, 2023).

Porsanger elaborates on the potential of 3D technologies for the Sámi community, saying that "it can reconnect us with our past which can be a vehicle to establish relationships with major museums or other non-Sámi museums. I believe in the use of new technologies in the museum work, which will have potential to make this much more living, much more exciting and can add kind of action into the static presentation of objects." Magnani continues that one

of the benefits of employing 3D imaging and modeling methods is to document materials from museum collections. He suggests that 3D technologies have potential to become a standard practice in documentation in museums and repositories, just like photography has been established as a standard practice. He adds that there are many significant Sámi heritage objects left in collections around the world, that could be useful for artisans to see (Porsanger and Magnani, focus group discussion, April 24, 2023).

Porsanger highlights that the digitization work, conducted by SVD, can be a trigger to draw attention to absence of cultural heritage in Sápmi. She explains that "I think we can make visible our work with 3D [methods] and with this [RUOKTOT] exhibition. And now when this exhibition will travel around Sápmi this year and next year and maybe the year after, I hope that it will make a contribution and will contribute to change." Magnani continues that the RUOKTOT exhibition production has set foundations about how to handle the data associated with Indigenous cultural heritage (Porsanger and Magnani, focus group discussion, April 24, 2023).

Bodard and Walsh consider it important that communities themselves are doing the digitization, instead of museums doing it and then them having more control over the digitization project, research data management and access to the data. They see that there is a lot of potential for learning and teaching community members who want to take part in digitization projects. Both Bodard and Walsh recognize the potential of 3D technologies for Indigenous communities, emphasizing the importance of communities making their own decisions. Bodard emphasizes that "digitizing to the extent that your community finds it useful and acceptable to do so." Walsh sees the potential specifically in preservation, studying, and replication of cultural heritage. Bodard continues that in his understanding, the value of 3D technologies for Indigenous communities is that "it is allowing engagement with both the materials and the heritage and the technologies from within that community." He sees the potential in several areas, such as in connecting the community members with the remote material culture, in terms of: engagement with the technology, with methodology, with the heritage, of conservation of the heritage and in terms of Indigenous institutions and source communities being involved in leading the decisions regarding digitization, about having access to objects that may not have been or may never be repatriated for various reasons (Bodard and Walsh, focus group discussion, July 28, 2023).

Porsanger also mentions the potential of 3D technologies to bring the Sámi heritage housed abroad closer to the local community. She mentions that community elders often ask her if SVD is going to showcase more of the digitization work, in the aftermath of the RUOKTOT exhibition. The elders express a desire to see what the museum has achieved regarding digitization. Porsanger highlights that SVD has managed to achieve the elders' acceptance of the use of new technologies and achieved their genuine interest in the use of these technologies (Porsanger and Magnani, focus group discussion, April 24, 2023).

6.4.2 The Potential of 3D Technology for Conservation

Olli, the director of the RDM consortium and an object conservator, sees the potential of 3D technology in conservation within the museum domain, explaining that "this project [RUOKTOT exhibition production] has led us […], using 3D technology and conservation." Olli emphasizes the potential of 3D technology in safety measures regarding conservation of organic material and artifacts. For instance, regarding the matter of contaminated Sámi material culture, sometimes saturated with pesticides, could be beneficial to create 3D digital representations of the contaminated material, for the object conservators to examine, without inhaling toxic vapors accumulated in the air (Porsanger and Olli, focus group discussion, March 23, 2023). The "use of pesticides and preservatives in museums dates back hundreds of years" (Hyperallergic, 2023). A lot of Sámi material culture housed in museums have been treated with pesticides globally. In her master's thesis, Olli herself has researched contaminated Sámi cultural heritage in Sápmi. In her research Olli (2013) has found out that museums that house Sámi material culture, particularly Sámi material culture made of organic material, are often contaminated "with residues of arsenic, mercury chloride or DDT and other organochlorines" (Olli, 2013; Porsanger and Olli, focus group discussion, March 23, 2023). Recent tests tell that much of the material from NM "has been impregnated and contains high levels of pesticides" and Olli's research thorough her conservation career reveals that the goavddis "is contaminated with toxic pesticides" (Grini, 2023, p. 133). Also, Pedersen sees the value of 3D technology in conservation, saying that "for example with pesticides, so you cannot really touch them [contaminated material], with digitization [3D digital representations] you can do anything" (Pedersen, personal communication, September 12, 2023). This same concern, and the possible solution to the matter, has been raised in Alaska, where "many Tlingit people believe that spirits, once controlled by the shamans, may still inhabit the objects and pose a potential risk to anyone who handles them without careful preparation. The objects are also fragile, and many are contaminated with original mercury-

based red paints as well as pesticides that were applied to preserve the objects after they were collected. The Tlingit Hoonah Indian Association recognized that, by having 3D reproductions for exhibition and educational handling, it could safely avoid the risks posed to both the handlers and the objects" (Hollinger, 2022, p. 186). Both the perspectives of Olli and Pedersen and the Tlingit case in Alaska demonstrate how the integration of 3D technology, namely 3D digital representations of contaminated heritage material, could connect the remote material culture with the local source community, without the risk of inhaling toxic vapors, since "pesticides can break down in the air, be breathed in, and move away from the treated area into new areas" (National Pesticide Information Center, 2016). For example, "dichlorodiphenyltrichloroethane (DDT) has been used from the mid-1930s to 1987 as a very effective insecticide" (Harlin & Olli, 2014, p. 62). Alex Lucas, NAGPRA's program manager and interim repatriation coordinator at the University of California, Berkeley, said to an online journal Hyperallergic in 2023 that "museums involved in repatriation efforts have been carrying out pesticide assessments while maintaining the cultural integrity of the material and cultural use of the material while it contains toxic pesticides" (Hyperallergic, 2023).

6.4.3 Exploring the Role of 3D Technology in Repatriation

While 3D technology poses an appropriate and effective use for museums and repositories regarding Indigenous cultural heritage management, documentation, presentation, preservation, community-cohesion and consultations, conservation, and establishing relationships with mainstream museum institutions, Appelt highlights that "I think it is [3D imaging and modeling] a wonderful method, but other ways, you could go about things that could serve a number of different purposes" (Appelt, personal communication, June 16, 2023), meaning that while 3D digital representations are valid for different purposes, but for example, comparing different replication methods, digital and manual, is crucial: while 3D digital representations can be accurate in size and measurements, they fall short in capturing the tactile experience of the original material, including distinct smell and texture. Therefore, in line with Appelt's discussion, it is crucial to elaborate whether 3D digital representations can replace the original material? As a conservator at SVD and a North Sámi community member, the smell of reindeer leather of the drumhead and the texture of treated wooden bowl, is part of the whole tactile experience of the original material. Appelt concludes that "my hope would be that they are [3D models] making things accessible in, as close to the artifact itself" (Appelt, personal communication, June 16, 2023). This similar matter is raised in the North American context by Watkins (2022) (see Chapter 2.2): "what does it mean to

repatriate and return objects when technologies are available to allow others to re-create special objects? Is digital repatriation—whereby museums retain the physical object while tribal members get exact replicas—good enough for future events?" (pp. 47-48).

Olli and Porsanger discuss digital repatriation in Chapter 5.1. Olli identifies the 3D digital representations of old Sámi drums as examples of digital repatriation, while Porsanger approaches this concept with more caution. Porsanger mentions that during their digitization project with Magnani, they did not reflect deeply on it due to its novelty in the Sámi context, but, however, Porsanger acknowledges that it is a possibility (Porsanger and Olli, focus group discussion, March 23, 2023). Walsh (2019) approaches the concept of digital repatriation also with caution, agreeing with Oruç (2022), stating that while 3D technologies "can act as a supplement to repatriation, but is not an alternative, and many ethical concerns face the future of 3D imaging repatriated material" (p. 74). Walsh (2019) highlights that "some individuals and traditions may view digital reproductions with the same importance as the original object, while others do not" (p. 47).

7 Conclusion

In this master's thesis I have examined to what extent does the integration of 3D digital representations of old Sámi drums within the RUOKTOT exhibition serve as a form of repatriation in a Sámi context. I have explored this question through two main lenses, focusing on 1) access to cultural heritage and 2) control over it, focusing specifically on the digitized old Sámi drums. I have narrated the production, design, and content of the RUOKTOT exhibition, produced by SVD in 2022. I investigated the experiences of Porsanger, Olli, Magnani, Pedersen, and Appelt through interviews and focus group discussions, focusing on their encounters with the original goavddis and the display of 3D digital representations of five old Sámi drums within the RUOKTOT exhibition. I investigated the experiences of Bodard and Walsh through focus group discussion, focusing on their encounters with digitization of Indigenous cultural heritage. The master's thesis centers around six matters: 1) the RUOKTOT exhibition production and design, 2) the case of Paul-Ánde's goavddis at SVD and the repatriation process, 3) the digitization process of the goavddis and the old Sámi drums chosen for the RUOKTOT exhibition, 4) the various concepts of repatriation, and 5) the potential and challenges of 3D technologies for Sámi museums and communities in relation to repatriation, and 6) the ethical considerations in digitization processes of Indigenous Sámi cultural heritage.

Methodologically, I chose interviews and focus groups discussions to highlight the research partners' understanding of repatriation and relevant concepts. I wished to allow the partners time to reflect upon core themes such as digitization of Indigenous Sámi cultural heritage, the ethical considerations involved in digitization projects, and the value of Sámi cultural heritage to its respective communities, institutions, and repositories.

These discussions furthermore, are based upon my historical investigations of the goavddis of Paul-Ánde. Contemporary contexts of Paul-Ánde's goavddis, and other old Sámi drums are also explored, along with previous efforts to repatriate Sámi cultural heritage in Norway, Sweden, and Finland. I have also mentioned other Indigenous repatriation efforts globally.

The journey of Sámi noaidi Paul-Ánde and his sacred companion, the goavddis, began at a difficult time and ended brutally. Little did he know about what the impact his journey would be for Sámi futures. The goavddis has become a pioneer in Sámi cultural heritage management, it has become a symbol for the innovation and development of 3D digital realm in Sámi context, developed for the benefit of Sámi museums and communities. More than 400 years later, Paul-Ánde and his goavddis have shaped new cultural domains for the Sámi and practices for the museums.

The goavddis, both as material and immaterial heritage, presents its own set of challenges in the digital realm. These challenges include the actual digitization as well as the subsequent research data management processes. The goavddis, existing as both material and immaterial culture, endured for centuries, its survival speaks of an enduring presence of traditional Sámi knowledge, duodji, cultural practice, and community life. The goavddis holds many meanings to Sámi peoples. Many Sámi communities define the old Sámi drums as powerful non-human beings, with their own purpose to fulfil. It also symbolizes a violent colonial history, including the nationwide destruction of old Sámi drums.

The significance of the goavddis is multiple to both NM and SVD. To NM it speaks to their national history and historical persons, whereas for SVD the goavddis embodies the resilience of a contemporary Sámi community, cultural practices, and identity. SVD serves as a mediator for the goavddis within and between Sámi communities.

SVD embraced 3D digital realm in 2020 by acquiring 3D scanners and participating in a 3D imaging workshop. The goavddis was digitized in 2020, four other old Sámi drums were digitized in European museums and in Ájtte in 2021. Both 3D scanners and photogrammetry

were employed. These five 3D digital representations were integrated into the RUOKTOT exhibition in animated form.

Digitizing culturally significant material involves many challenges. Often the organic material from Indigenous Sámi communities have been treated with pesticides by mainstream museums. There are additional challenges associated with handling such heritage objects, particularly concerning the goavddis and its revered abilities. This encompasses the animation and dissemination of such sacred heritage and extends to other Sámi heritage as well. Ethical guidelines or considerations can differ between institutions, and in some cases, these guidelines are absent. This underscores the pioneering nature of digital innovations in Indigenous heritage and museum domains.

Mainstream museum institutions possess a significant power and economic advantage in comparison to smaller community-based museums and repositories. The digitization processes of Indigenous Sámi cultural heritage have made a visible need to develop culturally sustainable and ethical heritage management practices. These matters require collaborative efforts involving both source communities and museum institutions. SVD aims to foster a platform where Indigenous museums and communities can pioneer the development of such guidelines. Through its work, SVD has recognized the importance of addressing ethical considerations prior to digitizing culturally significant Sámi heritage. This ensures that when digitization initiatives are taken, the material is handled in accordance with ethical and cultural standards.

In its existing practice context, repatriation has been applied to tangible material and human remains. Recent novel technologies have enabled repatriation discussions to evolve. There are new suggestions to how the practice of repatriation could be expanded, such as virtual repatriation and digital repatriation. Such concepts are currently under negotiations. There are questions of whether they really should be considered repatriation. Given the scarcity of empirical data and research in Sápmi I argue that it is too early to determine if digital sharing and creation should be considered as acts of repatriation. I suggest that the discussion should be broadened to encompass perspectives from the RUOKTOT partner museums: how do they interpret the 3D models of the old Sámi drums that they have received? Do the partner museums, now in possession of the 3D models, consider this acquisition as digital repatriation? Interviews and focus group discussions have revealed that these are not really considered clear-cut examples of digital repatriation. Olli supports the use of digital

repatriation, particularly in creating 3D digital representations of old Sámi drums. Porsanger, on the other hand, is more cautious. She is concerned with the current adequacy of current 3D imaging and modeling methods. It is worth noting that Olli's perspectives align with existing research in North America, where digital repatriation is recognized and practiced. It is important to note that not all research in North American contexts favor the adequacy of digital repatriation. Nevertheless, digitization of cultural heritage in North America is considered as part of the broader practice of 3D heritage preservation. This work argues that by first establishing digitization efforts as part of heritage management in Sápmi, on both institutional and community levels—then, after practicing digitization as a legitimate method, digital repatriation could be elaborated in the light of the 3D heritage management in Sámi context. For instance, broader research and collaborative studies could further develop this matter.

In the context of this master's thesis, rich discussions with the research partners have uncovered a keen interest in actively exploring the potential of 3D technologies. This includes utilization in exhibitions, facilitating access to collections without concerns about pesticides, enabling detailed examination of vulnerable or significant material, and facilitating the sharing of desired artifacts and materials across distances, engaging source communities. Such acts should be overseen and managed by the respective source communities.

While repatriation primarily concerns access to and control over the desired physical material, in the digital context, access is linked to the digital version of the material and subsequent research data, such as digital files. Additionally, control is tied to managing the digital files rather than physical material. In this manner, the respective parties, whether it be the Sámi museum or community, can access information related to the material by digitizing it and maintain control over the subsequent captured data. However, if the material is not repatriated, complete control over its utilization, including research and display, cannot solely be achieved through digitization.

The digitization projects undertaken by SVD have demonstrated that 3D imaging and modeling methods are valuable for visualizing the absence of the desired cultural heritage. However, they do not inherently replace the original physical material. Rather, these methods serve as powerful tools, facilitating the creation of replicas of heritage material and cultural artifacts in various formats. In cases where it is acknowledged that it may not be realistic to physically return all Sámi cultural heritage, for example from collections abroad, digital

sharing can be an alternative. However, 3D digital representations cannot replace the tactile experience of the original material. Regarding the old Sámi drums, a digital 3D model cannot provide: the smell and texture of the drumhead, the wooden bowl, or frame. It does not bring the tactile experience. 3D digital representations might however enable access to invaluable culturally historical information and wisdom that transcends verbal communication, which have endured for hundreds of years.

Another value of 3D technologies for Sámi museums, involves staying relevant within the global museum community in terms of practice and research. One of the aims of this study was to gain a greater understanding of the ethical considerations in digitization processes that are experienced by professionals working in memory institutions, cultural repositories, and heritage domains. While novel technologies often are assumed to be available only to mainstream museums, SVD has taken a leading role in applying 3D technologies. Doing so, they have made advances regarding uses of novel technologies, investigated how these could be used for cultural purposes. SVD has also developed 3D data management guidelines, with ethical considerations. This effort also places SVD within an international museum world, able to advocate from an Indigenous perspective. This is crucial to mitigate digital colonialism, particularly concerning open access and unrestricted access to 3D models.

Regarding the matter of digital colonialism or appropriation, this master's thesis highlights the importance of implementing safety measures regarding digitization of culturally significant material. Questions such as how the material is approached, who should handle it, which cultural protocols should be followed, how the material should be managed, who is responsible for the research data, and in what language the files should be, are all crucial considerations for culturally sustainable digitization projects. These are questions that enable procedures to show respect for Indigenous cultural ways and Indigenous data sovereignty. Olli emphasized the importance of Sámi customary law, by allowing time for interaction and communication with the Sámi drums before they were digitized. This was to ensure that the drums actually would allow themselves to be digitized. This is a matter that shows the significance of having museum staff with knowledge of customary law. Unfortunately, such considerations often lack power in mainstream museums and established heritage practice domains. Indigenous cultural practices, customary law, and methodologies within the field of heritage management are a narrow but growing domain and should be supported on both national and international levels to create a platform for holistic heritage management. This work argues that such holistic heritage management should be considered a process.

Customary law should be integrated in all aspects of practice, rather than as one element. One approach to integrate cultural protocols into ethical guidelines for the digitization of Indigenous cultural heritage of high spiritual and cultural value could involve collaboration with organizations such as ICOM. Overall, this work argues that learning how to conduct consultations with source communities and respective Indigenous museum institutions serves as an important factor for eventually leading to projects centered on reciprocal collaboration.

While 3D digital representations offer museums a valuable tool for increasing access to original material, the availability of cultural artifacts and other materials should be approached cautiously. This work argues that rather than seeing digital repatriation as a form of physical repatriation of tangible heritage, it should be regarded as an additional means of access. While 3D imaging and modeling methods can assist in the process of repatriating the original material, it is important to avoid generalizing them as equivalent to physical repatriation. Such approach overlooks the complex and often lengthy processes regarding both repatriation in its traditional context of returning over heritage to respective parties, and digitization of tangible material: both of these practices require varying methodologies, methods, and interpretations of the desired material or heritage—one might ask, does digital heritage, in this case 3D digital representations of old Sámi drums, bear the same meaning and value, compared to the original drums? Merging the value of tangible material and digital heritage together hastily in the Sámi context may diminish the complex values and presence associated with tangible heritage in relation to repatriation—the drum ceremony during the RUOKTOT exhibition opening, honoring the original goavddis, underscores the relationship and respect towards tangible Sámi drums. This type of connection with heritage reflects an understanding of cultural, social, spiritual, and intellectual value embedded within these drums, which have been fostered centuries.

Self-determination over cultural heritage is no longer nation-states' promise, since Indigenous-run museums together with source communities have further developed sovereignty, also within the matter of culturally profound digital heritage. The interviews and focus group discussions show that SVD has succeeded in asserting nuanced practice regarding thematic of ownership: better thematic to employ instead of ownership could be, for instance, custodianship, safeguarding, or stewardship.

Deeply rooted in Sámi oral and ontological traditions, máhcaheapmi serves as a valid cultural concept for understanding repatriation. It is a term collectively understood within North Sámi

communities. In media contexts, this word, however is mostly not in use. Repatriation is often translated as *repatriašuvdna* in North Sámi, which may not always be understood, especially by the elder generations.

In North American contexts, NAGPRA has fostered collaborations and consultations with First Nations regarding their cultural heritage. However, such legislation does not exist in Norway or Denmark. I argue that it is pertinent to ask, do Norway or Denmark need similar legislation? Practices regarding repatriation in Scandinavia are also not the same in these countries. Each country has different strategies. What the existing repatriation strategies have in common, is that they do not include specific treatment of material with sensitive and sacred ceremonial value such as the drums. Internationally, Norway and Denmark adhere to legislation such as UNDRIP, which outlines specific considerations for protection of Indigenous rights, including the right to access and/or repatriate ceremonial objects and human remains. While there is no NAGPRA in the Nordic countries, there still has been repatriations or deposits to Sámi museums in Norway, Sweden, and Finland. None of the Nordic countries, however, have specific legislation regarding sacred cultural heritage like the old Sámi drums that were taken, or looted from these communities. This creates a need for consultation processes to foster professional courtesy and allow to establish a collaborative and multifaceted approach to heritage management.

For future research endeavors, it would be interesting to examine 1) interpretations of the partner museums in RUOKTOT exhibition regarding the 3D digital representations of old Sámi drums that each partner museum received, 2) audience-centered desires regarding virtual exhibitions in Sápmi, or conduct 3) a comparative study of Indigenous/Sámi museums to examine digitization methods they use for replicating the desired material, to examine whether the choice of methods is influenced by factors such as method availability, cost-effectiveness, or the desire for high-definition 3D models. This study could discuss the different software and hardware used. Additionally, would be interesting to 4) test resurgence theories among Sámi communities using 3D technologies: has 3D digital representations of Sámi cultural heritage in a museum setting contributed to the resurgence of the respective community?

The matters surrounding access to and control over cultural heritage extend beyond the interaction between the Sámi and museum institutions. They also reflect historical politics. However, it is crucial to emphasize that repatriation and dialogue are not matters solely about

redressing historical grievances. These are also significant themes, for the future of relationships between museum institutions beyond Sápmi.

The research outcome is intended to facilitate knowledge exchange, and redirect attention within and between museum and heritage domains. This work argues that by recognizing Indigenous practices and methodologies as valid and legitimate, rather than merely alternative, new relationships can be forged. Perhaps one day, Indigenous cultural methods, practices, and methodologies will be acknowledged simply as research and practice, reflecting their validity and legitimacy, without being confined to simplistic and homogenous categories.

In the past, in Sámi communities, the noaidi was in charge of the drum. Access to the drums was regulated through collaboration between the noaidi and the community—the drums were not available to anyone at any time. Today, access to drums housed in mainstream museums is regulated, but by outsiders to the respective community, resulting in physical distance from the source communities. While 3D digital representations offer a solution by visualizing the original material, they cannot replace the original drums.

As an Indigenous museum SVD is both a space designated for exhibitions and collections of Sámi culture and North Sámi language. SVD is also a place where the relationship with the local community has developed through times. Local community members are consulted, partnerships are created, and collaboration is fostered. SVD's relations also extend out into Sápmi. From 2024 to 2026, the RUOKTOT exhibition will travel through Sápmi, starting at Ájtte, then to Nordlandsmuseet in Bådåddjo in collaboration with Árran, then to Saemien Sijte, and finally to Siida Sámi Museum. This exhibition will showcase how digital applications can enable vulnerable and precious heritage to travel, engaging broader audiences in various Sámi regions and highlighting the applicability of 3D digital representations for logistics. Various Sámi communities in other regions subsequently, will be able to explore the history and the present of their spiritual cultural heritage through digital representations, and perhaps assemble new meanings to the Sámi drums, in contemporary digital era. Such partnerships are expected to expand since the collections at SVD keep expanding, alongside the steps taking place to build a new museum for Sámi art and culture in Kárášjohka. The existence of the goavddis is affecting our contemporary Sámi communities and through the goavddis, the presence of Paul-Ánde resonates within museum walls in Sápmi.

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Appendix 1 – Interview Guide Focus Group Discussion with Dr. Jelena Porsanger and Anne May Olli

The questions in this guide will help provide answers to the following questions:

a. What were the objectives for producing the RUOKTOT exhibition?
b. What does the central position of drum animations and Paul-Ánde's goavddis in the exhibition represent/communicate according to the key persons?
c. How do the key persons perceive the process of creating 3D digital representations of various Sámi drums used in the exhibition?
d. How do the key persons perceive the repatriation process of Paul-Ánde's goavddis?
e. How do the key persons understand the concept of repatriation?
f. How do the key persons understand the Sámi cultural concepts of 'máhcaheapmi' and 'máhcahit'?

The questions:

1. What is your position at RDM and what are your professional responsibilities?
2. How were you involved with the production of the RUOKTOT exhibition?
3. What sparked the production of the RUOKTOT exhibition?
4. What were the primary elements and factors regarding the exhibition design?
5. How were the Sámi drums used in the exhibition selected for 3D imaging and modeling processes?
6. How were you involved with 3D imaging and modeling processes of the Sámi drums and Paul-Ánde's goavddis?
7. Who carried out the series of creating 3D representations of the drums and Paul-Ánde's goavddis and what resources were required to do it?
8. How did you land on the decision to digitize the drums, and what other means related to repatriation or máhcaheapmi did you consider prior to 3D digitization efforts?
9. What do you think is the role and purpose of digitization of Sámi cultural heritage for Sámi communities and Sámi museums?
10. How were you involved with the repatriation process of Paul-Ánde's goavddis?
11. RUOKTOT exhibition employs Sámi terminology and Sámi cultural concepts: how do you understand the cultural concepts of máhcaheapmi and máhcahit compared to the concept of repatriation?
12. How did you interpret the repatriation of Paul-Ánde's goavddis when the decision was published?
13. Were you met with any expectations from the local Sámi community for having the goavddis repatriated? If so, in what ways? When did this happen and how was it expressed?
14. What do you think is the role and purpose of repatriation of Sámi cultural heritage for Sámi communities and Sámi museums?
15. Do you think creating 3D digital representations of Indigenous Sámi cultural heritage is necessary?
16. Do you think repatriation of Indigenous Sámi cultural heritage is necessary?
17. Following these discussions, is there anything else you wish to add?

Appendix 2 – Interview Guide Focus Group Discussion with Dr. Matthew Magnani and Dr. Jelena Porsanger

The questions in this guide will help provide answers to the following questions:

a. How do the key persons perceive the process of creating 3D digital representations of various Sámi drums used in the exhibition?
b. How do the key persons navigate ethical guidelines during digitization processes?
c. How do the key persons perceive the repatriation process of Paul-Ánde's goavddis?

The questions:

1. What kind of institution do you work for and what are your professional responsibilities at SVD?
2. How were you involved with 3D imaging and modeling processes of chosen Sámi drums and Paul-Ánde's goavddis and what resources were required to do it?
3. What kind of 3D modeling methods, equipment and/or software tools did you use and why?
4. How was research data managed during and after the process of 3D modeling the drums?
5. Did any ethical dilemmas occur during the process of 3D modeling the drums?
6. What do you consider as ethical issues with digitization in your work and why?
7. Do you have any examples of situations where guidelines have served you in your digitization work?
8. Do you have any examples of situations where guidelines have hindered you in your digitization work?
9. What do you think is the potential of 3D technologies for Sámi communities and Sámi museums?
10. Do you know if your institution's code of ethics is updated according to technological advances in regards to your digitization work?
11. Regarding digitization, is there a specific topic, or topics, you would like code of ethics to contain?
12. How were you involved with the repatriation process of Paul-Ánde's goavddis?
13. How did you interpret the repatriation of Paul-Ánde's goavddis when the decision was published?
14. Do you think creating 3D digital representations of Indigenous Sámi cultural heritage material is necessary?
15. Do you think repatriation of Indigenous Sámi cultural heritage material is necessary?
16. Following these discussions, is there anything else you wish to add?

Appendix 3 – Interview Guide Focus Group Discussion with Dr. Gabriel Bodard and Alicia Walsh

The questions in this guide will help provide answers to the following questions:

a. How do the key persons perceive the process of creating 3D digital representations of Indigenous cultural heritage?
b. How do the key persons navigate ethical guidelines during digitization processes?

The questions:

1. What kind of institution do you work for and what are your professional responsibilities?
2. How have you been involved with 3D imaging and modeling processes of Indigenous heritage material?
3. What kind of 3D imaging and modeling methods, equipment and/or software tools have you used?
4. Thorough your career, have any ethical dilemmas occurred during digitization processes?
5. What do you consider as ethical issues with digitization processes in your work and why?
6. Regarding digitization, is there a specific topic, or topics, you would like code of ethics to contain?
7. What do you think is the potential of 3D technologies for Sámi communities and Sámi museums?
8. Do you think creating 3D digital representations of Indigenous Sámi cultural heritage material is necessary?
9. Following these discussions, is there anything else you wish to add?

Appendix 4 – Interview Guide Interview with Dr. Martin Appelt

The questions in this guide will help provide answers to the following questions:

a. How do the key persons perceive the repatriation process and overall management of Paul-Ánde's goavddis?
b. How do the key persons perceive the process of creating 3D digital representations of Indigenous cultural heritage?

The questions:

1. What is your position at Nationalmuseet and what are your professional responsibilities?
2. For how long have you worked at Nationalmuseet?
3. When and how did the drum of Anders Poulsen enter Nationalmuseet?
4. How was your institution involved with preserving and storing Anders Poulsen's drum?
5. How were you involved with preserving and storing Anders Poulsen's drum?
6. What was the process of repatriation of Anders Poulsen's drum before the recommendation given to the Danish Minister for Culture? What options were considered?
7. How were you involved with the repatriation process of Anders Poulsen's drum?
8. What sparked the repatriation process of Anders Poulsen's drum and what resources were required to do it?
9. Were you met with any expectations from the Sámi community for having the drum repatriated? If so, in what ways? When did this happen and how was it expressed?
10. What was your reaction to the decision made by the Danish Minister for Culture regarding the repatriation of Anders Poulsen's drum?
11. RUOKTOT exhibition employs Sámi terminology and Sámi cultural concepts: are you familiar with the Sámi cultural concept "máhcaheapmi"?
12. How do you understand the cultural concept máhcaheapmi in regards to the concept of repatriation?
13. What type of concept(s) does your institution employ in regards to the concept of repatriation? For example: are there any Danish concepts being employed?
14. What do you think is the role and purpose of repatriation of Sámi cultural heritage for Sámi communities and Sámi museums?
15. Do you think repatriation of Indigenous Sámi cultural heritage is necessary?
16. Are you/your institution familiar with digitization of Indigenous Sámi cultural heritage?
17. What do you think is the role and purpose of digitization of Sámi cultural heritage for Sámi communities and Sámi museums?
18. Do you think creating 3D digital representations of Indigenous Sámi cultural heritage is necessary?
19. Following these discussions, is there anything else you wish to add?

Appendix 5 – Interview Guide Interview with Dr. Christian Sune Pedersen

The questions in this guide will help provide answers to the following questions:

a. How do the key persons perceive the repatriation process and overall management of Paul-Ánde's goavddis?
b. How do the key persons perceive the process of creating 3D digital representations of Indigenous cultural heritage?

The questions:

1. What is your position at Nationalmuseet and what are your professional responsibilities?
2. For how long have you worked at Nationalmuseet?
3. When and how did the drum of Anders Poulsen enter Nationalmuseet?
4. How was your institution involved with preserving and storing Anders Poulsen's drum?
5. How were you involved with preserving and storing Anders Poulsen's drum?
6. What was the process of repatriation of Anders Poulsen's drum before the recommendation given to the Danish Minister for Culture? What options were considered?
7. How were you involved with the repatriation process of Anders Poulsen's drum?
8. What sparked the repatriation process of Anders Poulsen's drum and what resources were required to do it?
9. Were you met with any expectations from the Sámi community for having the drum repatriated? If so, in what ways? When did this happen and how was it expressed?
10. What was your reaction to the decision made by the Danish Minister for Culture regarding the repatriation of Anders Poulsen's drum?
11. RUOKTOT exhibition employs Sámi terminology and Sámi cultural concepts: are you familiar with the Sámi cultural concept "máhcaheapmi"?
12. How do you understand the cultural concept máhcaheapmi in regards to the concept of repatriation?
13. What type of concept(s) does your institution employ in regards to the concept of repatriation? For example: are there any Danish concepts being employed?
14. What do you think is the role and purpose of repatriation of Sámi cultural heritage for Sámi communities and Sámi museums?
15. Do you think repatriation of Indigenous Sámi cultural heritage is necessary?
16. Are you/your institution familiar with digitization of Indigenous Sámi cultural heritage?
17. What do you think is the role and purpose of digitization of Sámi cultural heritage for Sámi communities and Sámi museums?
18. Do you think creating 3D digital representations of Indigenous Sámi cultural heritage is necessary?
19. Following these discussions, is there anything else you wish to add?