

Small Collections Remembered: Sámi Material Culture and Community-Based Digitization at the Smithsonian Institution

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Abstract

Of the 158 million things housed by the Smithsonian Institution, about 56 objects originate from Sámi communities. By all accounts a small group of objects—even by the standards of the Arctic collections at the Institution—it may be easily overlooked or dismissed as insignificant, based on entrenched ideologies about idealized collections. Presenting a community-based methodology for the engagement of distant museum collections using three-dimensional (3D) technologies, this article establishes the latent potential of small collections for Indigenous communities. We demonstrate how a group of 56 objects not only chronicles complex histories of exchange and colonialism, but also provide a manageable conduit for learning and exchange to facilitate the continued restructuring of relationships between museums and descendent stakeholders, from the individual to community level. Small collections, far from incomplete, may not only contain materials significant to descendent groups on their own terms, but provide the grounds to generate new forms of Indigenous initiated, balanced reciprocity.

Sáme

Smithsonian institušuvdna áimmahuššá 158 miljon dávvira, main 56 dávvira gullet Sápmái. Dát sámi dávvirčoakkáldat lea oalle unni go dán veardida juoba Smithsonian institušuvnna eará árkatalaš čoakkáldagaid viiddodahkii. Unnit čoakkáldagat sáhttet museain adnojuvvot eahpedievaslašžan ja unnit beroštahttin dutkamiidda. Jurddašeapmi ollislaš ja dievaslaš vuorkkáid birra lea guhkká leamašan cieggan museasuorggái máilmmeviidosáččat. Dát čálus buktá ovdan, mo servošvuđot metodologiija bokte sáhttá čatnat oktii servoša, masa dávvirat álgoággus gullet, ja gáiddus museačoakkáldagaid golbmadimenšunála (3D) teknologiijaid vehkiin. Mii čalmmustahttit unna dávvirvuorkkáid mearkkašumi eamiálbmotjoavkkuide. Dán čálloš deattuhuvvo sámeservoša sajádat sihke dutkamis fágasuorggi dásis ja riikkaidgaskaš ovttasbarggus museasuorggis. Dát dutkamuš guorahallá dan, mo 3D-teknologiija sáhttá atnit gulahallan- ja dutkanreaidun eamiálbmogiide gulli čoakkáldagaid dutkamis – erenomážit jus daid vurkkodit guhkkii eret servošiin. Dutkangávdnosiid vuodul mii bastit dutkat dáid čoakkáldagaid mearkkašumi sámeservošiin. Mii čájehit mo 56 dávvira čalmmustahttet lotnolasgávppi historjjá ja ja kolonialismma, muhto maiddái mielddisbuktet vejolašvuoda láhčit oahppan- ja ovttasbargo-oktavuodaid museaiguin. Dánu mii hástalit sajáiduvvan museadoamma vugiid, bidjat guovddážiin servošiin, sihke ovttaskas olbmuid ja servoša oktasaš dásis. Unna

čoakkáldagat, lihkká mávssolaččat, sisttisdollet dávviriid ja ávdnasiid maid servošat atnet alla árvvus. Dat unna dávvirvuorkkát sáhttet bohciidahttit ođđa doaimmaid, maid eamiálbmogat ieža álggahit olahat dihtii eambo dásseárvvosaš gaskavuodaid museaiguin.

Introduction

Ethnographic museums were meant to place an encyclopedia of global human diversity at ones' fingertips (Hicks 2010; Turner 2020). The ideal collection provided immense geographic and temporal coverage, mapping cultural variation akin to natural scientific subjects from biological to geological specimens. To be comprehensive it was thought a collection should be extensive in scope and detail, containing descriptions about the material's broader cultural context. Travelers, missionaries, military officers and their kin, and later ethnographers acquired material culture and ancestral remains from colonized peoples in droves to fulfill this vision, filling large institutions like the Smithsonian from the 1840s (Guzmán 2018; Higham 2003; Parezo 1985).

Many early collections lacked detailed records regarding an object's place of origin, let alone manufacture or cultural context (Parezo 1987). Such haphazard collecting practices, by the mid 19th century, came to be regarded as incomplete and substandard, and calls to consistently record information on ethnographic collections were issued by major institutions (Gibbs 1867). By the late 19th and early 20th century, an increasingly professionalized class of salvage anthropologists prioritized the collection of material culture and records in linguistic and cultural context, a practice which continued through mid-century as urgent anthropology sought to record cultures being eroded by heavy post-war industrialization (Sturtevant 1977).

From their emergence under a salvage paradigm, many museums have changed in stance substantially. The acquisition of material culture has slowed, and contemporary museological practice—in an idealized form—has shifted toward building relationships with descendent communities, facilitating Indigenous engagement and co-stewardship, and more broadly catalyzing a processes of restitution and return (Flynn and Hull-Walski 2001; Fforde et al. 2020, Peers and Brown 2005; Supernant 2020). Indigenous institutions have formed, and revitalization and repatriation initiatives have expanded in scope and strength (Deloria 2018; Simpson 2009). The foundations of underlying cataloging systems have been critically examined through a decolonial lens (Turner 2015; 2020). In these contexts, small groups, or individual objects have

shown time and time again to have broader cultural significance, to communities and their partners.

Despite these large-scale shifts in museological practice, an informal discourse regarding the value of complete and well-provenanced collections dominates discussions in museums. Ideas about “collection gaps,” remain. Well-recorded and expansive assemblages convey value, while small collections or stray objects without documentation are prone to being overlooked by academics and publics alike. Lacking provenance or stature, they may be touted as inadequate or insufficient on anthropological terms. Deviation from the colonial-era ideal of a well-recorded, total collection, may today cloud Indigenous reconnection by discouraging engagement and study. Evoking an established corpus of literature that stresses the importance of objects often overlooked due to their diminutive size (e.g., Ambrose 2002; Loren and Beaudry 2006), this article shows how small collections, in this case activated by advancements in 3D technology, may be of significance to communities of origin.

This article presents the work of a group of Sámi scholars, artisans and curators alongside anthropologists and archaeologists who specialize in 3D digitization and/or work in Sápmi, the homeland of Indigenous Sámi communities (see Figure 1). To reconnect Sámi with their cultural heritage housed around the world, and especially those elders and youth who cannot easily travel, the Sámiid Vuorká-Dávvirat (abbreviated SVD, *En. The Sámi Museum in Karasjok*) developed a 3D digitization program, rooted in community values, to raise consciousness about distant museum objects and strengthen contemporary Sámi culture. We begin with a review of “big” collection histories at the Smithsonian, and the Institution’s shifting emphasis on stakeholder engagement through the implementation of digital 3D modeling. We present a history of the Sámi-led Museum in Karasjok in its broader context of Sámi museology, and show how the same 3D tool kits are being actively developed by Indigenous communities to engage their diasporic cultural heritage. We then discuss our group’s visit to the Smithsonian in the summer of 2022, predicated on the 3D digitization of a small collection of 58 objects which could be overlooked as insignificant or incomplete. We review community interest in the collection, alongside the significance that the group’s summer trip held for individual coauthors. We show how a digitization project, based on community desires and individual interests,

catalyzes a diverse body of meanings and potentials for descendants and their supporters, reawakening and reinforcing connections to cultural heritage housed internationally.

Collecting at the Smithsonian

In many ways, the Smithsonian Institution (SI), with its founding directive to increase and expand knowledge, embodies the pinnacle of collecting culture as the world's largest museum complex. Comprising 21 museums, 14 education and research centers and the National Zoo holding 158 million objects, the Smithsonian grew exponentially from its establishment in 1846. Its founding collection, weighing nearly 40 tons, included tens of thousands of natural history specimens and cultural items gathered by the U.S. Exploring Expedition between 1838 and 1842 from the Pacific and Antarctic oceans (Viola 1985). A comparison to other large collections in colonial state capitols reveals the magnitude with which American museums acquired their holdings. For example, the British Museum contains a mere 8 million objects, while The Musée du Quai Branly – Jacques Chirac in France and the Ethnological Museum of Berlin in Germany contain well under one million each.

Once an *ad hoc* process supported by traveling missionaries, militaries and travelers, the magnitude of collecting and organization at the Smithsonian grew exponentially through the mid-19th century (see Parezo 1985; 1987). Informal collecting practices became increasingly systematized and professionalized through the mid to late 19th century (Gibbs 1867). Under a salvage paradigm, growing assemblages of material culture and human remains were appropriated to the shelves of the Institution, contributing to the dispossession of Indigenous peoples across their territories (Gruber 1970). Through a process of trial and error including collection, transportation, and cataloging, early anthropologists went to great pains to categorize and collect information on material culture sent back to Washington D.C., in some cases in multiples to trade with other institutions (Nichols 2016, Turner 2015). In this era, conceptions of a well-rounded, well-documented, and whole collection came to figure prominently.

Through the mid-20th century, while collecting would never again approach the pace of the previous century, an urgency remained about the acquisition of material culture in the post-war years (Link 2016). Reverberations from the Civil Rights and Indigenous rights movements

alongside dedicated activism by Indigenous communities transformed relationships between descendants and museums. Through the 1970s, collections continued to prioritize well-documented materials, emphasizing the inclusion of Indigenous vocabularies and production contexts (see Sturtevant 1977), and by the 80s collaborative care protocols gained traction, incorporating visions of Indigenous communities (Flynn and Hull-Walski 2001). Momentous national repatriation legislation, including the National Museum of the American Indian Act (NMAI) of 1989 and Native American Graves Protection and Repatriation Act (NAGPRA) of 1990, codified portions of these transforming relationships (though not subject to the NAGPRA, the Smithsonian is subject to the repatriation provisions in the NMAI Act).

In light of these changing legacies and mirroring broader trends to facilitate community research using innovative digitization programs (see for instance GRASAC 2023; Rowley 2013), many scholars at the Smithsonian have pivoted to develop new programs and apply emergent technologies to encourage reparative relationship building with stakeholders (Greene 2015). The Recovering Voices Community Research Program provides funding for groups to visit and study archival and material collections—to engage and activate material culture on the terms of descendants (Bell 2011, Isaac et. al 2023). This program led to the digitization and parallel community study of an outrigger canoe from Queen Kapi‘olani housed by the SI during Josh Bell’s Wa’a project (Smithsonian Digitization Program Office 2023). Spawned from consultation and collaboration of the Repatriation Office of the Natural History Museum, digital 3D modeling and replication projects encourage repair, revival, remote access, and education surrounding material culture. For example, in Eric Hollinger’s collaborative work with Tlingit community members, the team digitized and milled repatriated clan objects for contemporary ceremony (Hollinger 2022; Hollinger et al. 2013). While digitization promises to mediate relationships in productive ways, digital materials should never be considered a replacement for the return of physical belongings (Boast and Enoté 2013).

In the context of this vast collection history and transforming legacy of museum practice, a small number of objects from Sámi communities were accessioned to the Smithsonian’s National Museum of Natural History (NMNH) between 1874 and 1961. Today, convergent with the need

for collaboration with Indigenous communities and capitalizing off of novel technological affordances, this small collection holds new potential according to contemporary Sámi desires.

Sámi Museology and the RiddoDuottarMuseat

Indigenous Sámi museums were founded after WWII across Sápmi according to local Sámi value systems (Porsanger 2021). An important Sámi cultural worker, Marit Teigmo Eira, who worked for many decades as a museum leader at The Sámi Museum in Karasjok, wrote about foundational principles to Sámi museology in 1988. She stated that across national borders, Sámi museums should disseminate knowledge that majority societies silenced and failed to teach. They should combat prejudices against the community, strengthening the self-esteem and dignity of individuals and the people as a whole. She elaborated on the importance of traditional Sámi perspectives for both the creation of museum collections and exhibition work. Objects may be chosen and shown in accordance with their importance for the culture and values such as intuitivism, richness of ideas, flexibility, simplicity, and ingenuity (Norwegian: *intuitive, iverikdommen, fleksibiliteten, enkelheten, oppfinnsomhet*) (Teigmo Eira 1988: 35-36). Sámi museum work, in her view, highlights the importance of process and movement in time and space rather than emphasizing a specific historical moment or period. Teigmo Eira writes that the saying “*Buoret jođus go oru.*” literally meaning “Better to be in motion (in search of resources) than to stay permanently in one place,” embodies a unique value system and way of thinking, fundamental to museum work in Sápmi (Teigmo Eira 1988:32).

The Sámi Museum in Karasjok (SVD) was founded in 1972, launching from local Sámi initiatives to collect material culture that predated the Second World War. When the retreating German army burned the Northern parts of Sápmi in Finnmark and Northern Finland (Niemi 2022; Seitsonen 2020), they destroyed to a great extent physical manifestations of community knowledge, worsening processes of assimilation that originated through missionization in the 17th century and culminated in the Norwegianization policies of the mid-20th century.

Technological transformation further accelerated post-War cultural change (e.g., Pelto 1973). In response to these shifts, SVD was established under the Norwegian museum system at the height of the Indigenous movement in Sápmi, and later moved under the Sámi Parliament in 2002. In 2006, The Sámi Museum in Karasjok was consolidated under the RiddoDuottarMuseat (RDM),

which includes a consortium of four Sámi museums and The Sámi Art Collection which was established in 2015/2016. Today, the Museum in Karasjok is the steward of approximately 5,000 objects, primarily collected after the Second World War.

Looking to foreign collections, one or a few objects may maintain symbolic and practical importance for cultural revitalization initiatives and community wellbeing. They are actively sought by Sámi and their institutions. By 1978, The Museum in Karasjok began to search for sacred belongings housed abroad, and acquired a long-term loan for the spiritual leader Poala-Ánde's drum (*goavddis*) in 1979 (Porsanger 2022 a,b). Coinciding with increased global momentum for repatriation through the 1990s, Sámi desire to reengage their cultural heritage and ancestors housed in foreign or southern museum collections surged across Fennoscandia through the 2010s. Human remains have been reburied in Sweden, Finland, and Norway (Svestad 2013, 2019). In Finland, major national collections have been returned to the Siida Sámi Museum (Harlin 2018). In Norway, the Bååstede project was initiated in 2009 (Gaup, Jensen, and Pareli 2021). Following a report in 2012, approximately 1600 objects were legally signed over to Sámi institutions in 2019, though in many cases their physical transfer to Sápmi has not yet occurred (in Kárášjohka, of the 130 objects only one has returned home). Repatriation of material culture has risen to prominence to promote community wellbeing, as both fuel for linguistic and cultural revitalization programs, facilitating processes of contemporary production and decolonization.

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. For example, when The Sámi Museum in Karasjok requested the ownership of a 400-year-old sacred drum from the National Museum of Denmark in 2006, the Danish Museum denied the appeal arguing that the drum originated from a particularly well-documented and whole collection from the period of 1580-1820 (Porsanger 2022a).

Recognizing the importance of finding and reconnecting with museum collections dispersed across and beyond Sápmi, initiatives have begun to reach internationally using new 3D media. Joining other Indigenous communities who have pioneered digital applications in museums (Hollinger et al. 2013; Csoba DeHass and Taitt 2018), Sámi institutions have been quick to adopt a 3D toolkit to restore to life and bring to consciousness cultural heritage housed on distant shelves. In Kárášjohka, Jelena Porsanger and colleagues have initiated exhibitions centering 3D models and Sámi perspectives, to begin conversations on the repatriation of the *goavddis* by drawing attention to its absence. In Norway and across the border in Finland, where material culture plays an important role in community making and processes of decolonization (Magnani and Magnani 2022), conversations about how these technologies can be used as tools to aid artisans have emerged in earnest (Magnani, Guttorm, and Magnani 2018). Stressing the importance of pan-Sápmi collaboration, risks, and benefits of new digital technologies for Indigenous heritage, the RiddoDuottarMuseat has developed guidelines for Sámi museums handling digital 3D data (RDM 2022).

It is in this contemporary technological context and launching from long-term desires to reconnect with diasporic Sámi materials that SVD's Director, Jelena Porsanger, initiated a visit to the Smithsonian collections in 2021 with support from the leadership of RDM. These conversations emerged from previous collections work conducted by Matthew Magnani during the Smithsonian Institution's Summer Institute in Museum Anthropology (SIMA) in 2018.

Visiting a Small Sámi Collection

The Sámi collection arrived at the Smithsonian through at least 14 known accession events (though several objects lack accession records) and initially contained 58 objects (since reduced to 56), ranging in age from the late 19th century to the 1960s, and in size from a needle case to a reindeer-drawn sledge. Sámi objects at the Smithsonian provide a full history that attests to Sámi tradition, exchange, and resistance from the 19th through 20th centuries. Judging by some of their (non-functional) forms and caricature engravings, many objects in the collection appear to have been made for tourist markets and acquired by travelers to Sápmi in the first half of the 20th century. Other portions of the collection (seven objects) reflect Sámi exchange with other Indigenous communities, for instance when Sámi reindeer herders were moved through a United

States government to establish herding practices amongst Alaska Natives (Vorren 1994). Twenty objects were collected by the family of an American diplomat. Other materials demonstrate histories of Sámi oppression—one carving attributed to Lars Hætta, a Sámi involved in the Guovdageaidnu rebellion in 1852—matches other crafts he produced while imprisoned at Akerhus Castle in Oslo (see Davy 2018, Grini 2022). Significantly, most of the collection dates from before the Second World War, material which is largely absent in Sámi museums.

The group visiting the collection included Sami Laiti, a Sámi *duojár* from a prominent crafting family in the Anar area of Sápmi; Jelena Porsanger, former Rector of the Sámi Allaskuvla, Sámi University of Applied Sciences in Kautokeino, and current director of The Sámi Museum in Karasjok, a pathfinder of Indigenous methodologies who incorporates 3D technology in community-based museology (see Porsanger 2004, 2014; Porsanger and Seurujärvi-Kari 2021; Porsanger et al. 2021); Natalia Magnani, a sociocultural anthropologist who has worked in Sápmi since 2014, when she began to study and support museum-based cultural revitalization initiatives in the Skolt Sámi village of Če'vetjäu'rr (Magnani and Magnani 2018; Magnani 2018); Matthew Magnani, an anthropological archaeologist who has worked in Sápmi since 2014, with broad interest in digital applications in the field (Douglass et al. 2017; Magnani 2014; Magnani et al. 2016; Magnani et al. 2020); Anne May Olli, director of the RiddoDuottarMuseat, who was originally trained as a museum conservator; Samuel Valkeapää, Assistant Professor and North Sámi *duojár* based at the Sámi Allaskuvla, where he integrates 3D technologies to teach Sámi (and Indigenous) craft and design; Eric Hollinger, Tribal Liaison in the Repatriation Office of the Smithsonian's National Museum of Natural History where he collaborates with Native American tribes in the areas of 3D digitization and replication, traditional care of collections and pesticides detection and mitigation; and Paula Rauhala, a North Sámi conservator from Avvil (Ivalo) who works at The Sámi Museum in Karasjok and is currently completing her master's thesis on 3D technologies and repatriation in Sápmi.

The pre-trip planning that scaffolded the trip involved coordination with Eric Hollinger, who visited project partners at their home institutions in Sápmi in March 2022. Before the trip, participants reviewed digital collection records to see which objects and subject areas were of interest for study and 3D modeling. On May 30th Jelena Porsanger and The Sámi Museum in

Karasjok arranged a meeting amongst the Elders' Association of Kárášjohka, which holds its monthly gathering on the museum's premises, to establish priorities for community reengagement and digitization (see Figure 2). Through the meeting, held in North Sámi, Porsanger reviewed a list of collections to foster a discussion of their interests, concerns, and to highlight objects that they wanted to know more about and see represented in 3D.

Some objects immediately evoked strong attention from the group of elders. For instance, they were particularly engaged as they reviewed *gákti* (traditional dress). Other objects energized the group and conjured a desire to inspect material more closely through the application of 3D modeling. Two sledges, a pair of reindeer skin boots, and a needle case were selected for digitization. There was much interest in the two Lars Hætta models. Lars Hætta was a North Sámi man from Guovdageaidnu, associated with a landmark rebellion in 1852, who carved models while imprisoned in Oslo (see again Davy 2018). The elders were also interested in the *fierra*, the wooden insert of a woman's hat (*ládjogahpir*), that stopped being used at the beginning of the last century but is actively being revitalized today (Guttorm 2007; Harlin and Pieski 2021). The elders desired the materials in the Smithsonian collection be recorded correctly, with Sámi language names. Over the course of the week at the Smithsonian, Porsanger prioritized the wishes of this group for digitization.

At the Smithsonian, participants were able to survey large portions of the collection at once. We pulled material from drawers and observed objects closely, with a particular focus on raw materials, object form, production patterns, context, and provenance. To bring back representations of the objects to Sápmi for further study, we created 3D models according first to community, then individual desires. The group ran two parallel data-capture processes, employing Artec white-light scanners (see Figure 3) and photogrammetry (see Figure 4), which evoked a number of meanings for the small collection.

Sami Laiti

Through the trip, Sami Laiti led the photogrammetric digitization of materials. He digitized knives and other engraved pieces he was personally interested in, and some selected by elders, including the *fierra*. Through this process he honed his skills in photogrammetry, which he had

already used to document his own *duodji* production in Sápmi. From Laiti's perspective, the collection provided limited potential to inform contemporary *duodji* in practice. However, there were some interesting elements of the collection that piqued his interest as an artisan. For instance, Sámi knife sheaths are often made of two adjoining elements of antler riveted together. He noted that the rivets seen in the knives were particularly large. He wondered if this was related to material availability or a technical decision. He also questioned the size of many objects in the collection—some cups and other “hard” items were very small. He wondered whether this was due to a collection bias to facilitate ease of transport by the collector.

Through a process of close looking and digitization, Laiti found the correction and completion of NMNH records essential. He said materials were often wrongly attributed as bone or antler. He felt that even these small discrepancies were unsettling. In another case, based on his knowledge of needle case production, he was able to reunite two pieces that had become separated during their curatorial history. He identified matching wear patterns caused by the exterior needle case (object number E26994) on an interior leather strip (ET17767), used to house tools for sewing. He described using his knowledge as an artisan to bring these pieces back together in spiritual terms.

Through engaging the materials for digitization and study, the inspiration and affirmation that Laiti derived from the trip was central to his reflections. As an artisan who has learned both through his own family and secondary craft education, observing the consistency in patterns across his own production and museum collections was reassuring. Seeing the similarities between his own products— for instance in knife morphologies-- and those on the Smithsonian shelves affirmed that his practices are in fact longstanding Sámi traditions, not inventions of his father immediately before him. Engaging collections internationally made him want to double down and focus on his traditional craftwork which incorporates wood, antler, and other local raw materials. Laiti conveyed the importance of small collections as a key to establish connections with museums around the world. He expressed the small collection's broader community utility, both in terms of specific pieces of interest, but also the potential for forming new connections to share expertise. With objects like the *fierra* and *gietka* (cradle), the small collection will provide a foothold to promote knowledge exchange between Sápmi and the Smithsonian. Internships for

Sámi students may emerge. Network building with other Indigenous bodies in the United States (e.g., NMAI), where Indigenous communities are perceived to be ahead of the curve in processes of decolonization, facilitates learning from others' experiences to handle lagging national governments in Fenno-Scandinavia.

Jelena Porsanger

Porsanger worked to secure broader input from the residents of Kárášjohka to tailor the trip in consideration of broader community priorities. Over the course of the week, she set project goals based on the feedback of elders, ranking objects for digitization first according to community desires, followed by the individual interests of group members present in the Smithsonian collections.

Of all the collection, the *fierra* (E260560) was of special interest to Porsanger for several reasons: the powerful revitalization movement seen across Northern parts of Sápmi supporting the production and use of womens' headdresses, *ládjogahpir*; a desire to have on museum display and available for closer study the wooden insert from an old *ládjogahpir*; and the biography of this object in the Smithsonian's collection– the *fierra* was collected in Alaska, thus witnessing a part of Sámi history from the end of the 19th century. Three-dimensional modeling facilitates access to this unique piece of *duodji*, which could be analyzed by professional artisans (*duojárat*) in the home community. This would provide the opportunity to reawaken *duodji* techniques which have not been in use for quite a while, since *ládjogahpir* have not been in use for a century until the recent revitalization. The biography of the *fierra*, in turn, may also be studied with the help of historical sources and the knowledge of family relations. Looking from an Indigenous Sámi perspective, it is interesting to reconstruct a connection between a museum object and a person or a family who possessed the object in the past. This is an example of a Sámi reconnection, which might be established using digital means. When reengaged with the community, the digital representation of the *fierra* back home in Kárášjohka will bring new and diverse perspectives on the history of use, family histories, and *duodji* techniques.

Porsanger was struck by the company of the Benin bronzes, which occupied a section of the Smithsonian's conservation lab and were undergoing final checks and documentation before

repatriation to Nigeria. Porsanger described the advantages of the Smithsonian visit in terms of the comparative perspective that emerged through the exchange, particularly as it relates to repatriation. Discussions on repatriation in Sápmi are nascent. She saw promise in understanding how repatriation is approached in a diversity of tribal contexts in the US by large institutions, juxtaposed with their perspectives from the standpoint of a small Indigenous organization.

Porsanger looked further to exchange ideas surrounding the integration of 3D modeling, printing, and milling, as it relates to collaborative projects being undertaken at the Smithsonian. Inspired by the Repatriation Office's collaboration on a Tlingit wooden hat (Hollinger 2022), she was excited to disseminate knowledge about a story of successful 3D collaboration between a large institution and an Indigenous community. A comparative perspective provides the opportunity to think through alternative approaches to similar issues faced by other Indigenous communities and institutions at home in the Nordic countries.

Natalia Magnani

In reviewing the collections prior to the trip, Natalia Magnani looked for museum objects that might reveal something about historical patterns of exchange, state infrastructural expansion, and sedentarization, including knives, antler spoons, and pipes produced for a tourist market. Over the course of the week, Magnani participated in a close study of the collections alongside Laiti and Valkeapää, whom she has worked with since 2016 and 2020, respectively. Together, they inspected objects in consideration of their production histories and intended use (e.g., in an attempt to discern tool markings that indicated mobility or manufacture in a sedentary village workshop, or whether they were intended for family use or sale to a visitor) (see Figure 5). In parallel, she contributed to 3D digitization through photogrammetry.

Following the trip, Magnani emphasized the value of approaching the collections together, from variable perspectives—every member of the group, she noted, had something different to add to the conversation, from the *duojár*, to educator, to anthropologist. Knowledge of the *duojár*, matched to anthropological perspectives and technological approaches, imbued the small collection with immense meaning. A different group would have provided observations from other, overlapping but unique angles. She recognized the collaborative potential of extending

ethnography into museum spaces, in continuation of conversations on craft that emerged through her work in Sápmi.

Reflecting further, Magnani highlighted the importance for both trip participants and institutions, spanning RDM to the SI. Hollinger and the Smithsonian team demonstrated extreme care as hosts, while the group itself was interested in creating ties to the institution that would create stronger relationships in the future— similar to the Sámi concept of *verddevuohta*, which encapsulates the mutually beneficial exchange of goods and services between Sámi (and non-Sámi) practicing different livelihoods.

Matthew Magnani

Prior to travel, Matthew Magnani helped facilitate discussion and reflection upon the museum collections with individual participants and attended the meeting with elders in Kárášjohka. He was most interested in developing an understanding of how the technologies presented in this piece could be best applied to meet community desires. Over the course of the week, he focused on white-light scanning selected materials. In parallel, he contributed to setting up, and periodically running the photogrammetry station.

Reflecting upon the week, Magnani considered both the challenges but also innovation that emerged through the group's visit. Even with the support of Smithsonian staff and working with an experienced team, he found it daunting to balance the collection of usable digital resources with broader trip organization. He was struck by unforeseen developments in both technological and social aspects of the trip. For instance, interest from within the group to donate digital assets to the Smithsonian was unexpected. Samuel Valkeapää brought crafts he had made himself, and pushed conversations on digital data curation and stewardship in new directions. At the end of the week and through practical experience, the broader project team had become efficient at capturing data for 3D models. In parallel, the focus by the group on building mutually beneficial relationships at an institutional level figured prominently.

Anne May Olli

Anne May Olli expressed interest in material collected prior to mid-century, scarce in Sápmi because of the history of war in the region, now most prevalent in major museum collections across the Nordic countries, Europe, and Americas. With small pre-war collections in Sámi territories, and histories of exchange between Nordic and other institutions abroad, she says it is particularly important that institutions like RDM reach across national borders. Based on her professional training she was particularly focused on assessing the histories of pesticide use at the Smithsonian. To this end, Olli arranged for the use of a portable X-ray fluorescence analyzer to test for common contaminants in the Sámi collection (see Figure 6). Additionally, the lockers in which the objects have been kept were examined for traces of possible contamination from previous conservation treatment (for instance, mercury vapor tests were conducted to see the levels of off-gassing in relevant museum cabinets). In the future, Olli is interested in exploring new approaches for organic pesticide detection.

At the end of the week, Olli wanted to further strengthen connections with the Smithsonian. These ties, she reflected, would not only facilitate information sharing and dialogue related to Sámi cultural heritage housed at the Institution, but provide increased legitimacy to their museological practices at home. Relationships with large institutions like the Smithsonian demonstrate capacity for high quality work in Scandinavia. She further expressed the potential for new technologies to serve the needs of Sámi conservation. She expressed interest in utilizing 3D technologies to allow for the observation of objects that from a conservation perspective, are too difficult to regularly examine. For instance, she raised the example of the *beaska*, or Sámi reindeer overcoat (E014800-1), an object that was gifted by the University of Oslo for Philadelphia's Centennial Exhibition in 1876. The coat exhibited high levels of mercury, which discourages direct handling. A 3D model of this jacket would reduce the need to travel to see the coat, and mitigate exposure to harmful contaminants.

Samuel Valkeapää

As an educator at the Sámi Allaskuvla, where Sámi histories become a medium to provide sustainable solutions for a changing world, Valkeapää emphasized both the importance of museum collections— assemblages he referred to as coursing with “history bound to their materiality” – and addressing the hurdles to their access. Far from Sámi land, distance brings

challenges to access collections like those housed at the Smithsonian and other institutions around the world. New digital tools, such as 3D modeling, paired with community engagement and collaboration, offer possibilities for communication and mutually beneficial knowledge sharing.

Small collections are important. A small collection located at the Smithsonian confers even more meaning, because it is embedded in an Institution with vast capacities and experiences engaging a diversity of communities. Drawing on these experiences, Valkeapää feels strongly about finding technological solutions to facilitate and prioritize Sámi needs. The potential of these new technologies to aid in the gathering, protection, and distribution of information regarding Indigenous cultural heritage is immense. Ideally, solutions implementing 3D modeling should support the maintenance of traditional knowledge, but also allow for their protection in culturally appropriate and mutually beneficial ways (e.g., expanding catalogs to include culturally relevant information).

On the trip, Valkeapää took interest in studying the *stuorra niibi* (big knife) in the collection (E381707). He was interested in the piece because of its roughness of finish, and the intelligent technical solutions used by the maker. Smithsonian archives assumed the knife to be Sámi, but Valkeapää doubted its attribution based on his close inspection. Digitization of the object using photogrammetry provided the potential to continue studies following the trip in Sápmi.

Valkeapää emphasized the importance of recording information alongside the oldest generations of Sámi, who hold a knowledge base that spans over a century but that is rapidly narrowing. Continued provenance study of the knife unexpectedly led Samuel to the surrounding environments of his father's family, his ancestors, and history. Gathering and correcting information on these objects, he says, should be done as quickly as possible. Finnish education, which is typically praised for its quality, is more often overlooked for effectively disturbing the transfer of oral knowledge between generations of Sámi. Provenance research, and recording these details, reaffirms intergenerational connections and may be used to defend Sámi human rights.

Since Sámi collections at the Smithsonian were relatively old, Valkeapää wanted to know what kinds of new accessions might be possible at the Institution. He brought two *guvssit* (pl., burl

cups) with him, which he became interested in accessioning as born-digital assets to the Smithsonian collections. He envisioned that digitizing one's self-made and used contemporary Sámi object could provide deeper art-historical information about its function, locality, use, and Sámi epistememes. With this kind of vision, he probed whether or not the Smithsonian has or could build safe structures or platforms to ethically store and share Sámi cultural heritage. Digital exchanges, he believes, will facilitate processes of research and curation for museums and stakeholders alike, keeping collections current, building digital competencies, and supporting exchange with and for Indigenous communities. These kinds of innovations would provide new avenues for museums to strengthen a safeguarding of intangible cultural heritage, and even be scaled up to inform international policy (UNESCO 2019).

Eric Hollinger

Leading up to the trip, Eric Hollinger's work with the Tlingit and other tribes on 3D applications to repatriation and cultural heritage restoration were studied by the Sámi group for parallels to their potential use of 3D. Hollinger was invited to Sápmi in March of 2022 where he toured The Sámi Museum in Karasjok, Sámi Parliament, Sámi Allaskuvla, and the Kautokeino Museum where he learned about the challenges and interests of the Sámi group and shared his experiences with repatriation and 3D collaborations. Hollinger assisted with the visit to the Smithsonian by arranging for tours of the NMNH and its Museum Support Center, NMAI's Cultural Resources Center, Smithsonian Institution Exhibits shops, demonstrations of Reflectance Transference Imagery (RTI) by the Museum Conservation Institute, demonstrations of pXRF testing for contaminated collections and meetings with Smithsonian Conservators, Curators and Collections Managers.

For Hollinger, the research interests of the Sámi group are shared with many Native American communities and will be of increasing interest for Indigenous groups all over the world. He has also seen a growing interest on the part of Indigenous communities in the use of 3D technologies for digitization and replication of cultural heritage collections. Hollinger considers the visit by the Sámi group to be an excellent model for Indigenous community-based research and collaboration that will be of value to other museums and Indigenous communities. The diversity of backgrounds, experience and expertise of the participants enabled them to engage with the

Smithsonian staff and the collections in a wide range of ways to maximize the take-aways for the group as a whole and the benefits to the Sámi community.

For the Smithsonian, the visit brought forward thinking about issues beginning to emerge from this new area of collaboration with 3D technologies. The fact that the group came equipped and trained to carry out their own digitization using white-light and photogrammetry is an excellent demonstration of the fact that Indigenous communities around the world are going to increasingly have the capacity to control the digitization process from start to finish and museums must be prepared to accommodate requests to conduct such digitization. Conversations were begun between the group and Smithsonian staff about sharing of the 3D files and the possibility of cooperating to post the 3D models to the Smithsonian's 3D viewer in English as well as the Sámi language and connecting to the work of the RiddoDuottarMuseat. Such shared curation and representation of the collections are likely to increase. The proposal by Valkeapää to offer the museum a 3D model of a *guksi* belonging to his family to continue to fill out the representation of the Sámi among the Smithsonian's collections raises new and important considerations about the gifting of born-digital collections. Such offers might expand Smithsonian collections and promote sharing that expands the educational potential of both the museum and the source community and promotes relationships that require cooperation and shared stewardship. Some Tlingit clan leaders have similarly expressed support for sharing 3D models or physical replicas with the Smithsonian because they value the educational mission of the museum and Valkeapää's proposal provides an opportunity to establish a precedent for how that might be carried out. And finally, the experience of working with the Sámi reminds the museum that any item or small collection of items may be more significant than may be presumed and that every item should be considered invaluable since we may not realize the intellectual, cultural or spiritual values of the collections we steward until they are activated again and engaged by source communities and experts. That is, after all, the entire point of housing collections for future generations.

Paula Rauhala

Looking through the object inventory prior to travel, Rauhala became interested in the Smithsonian's holdings of Sámi pipes. In Sápmi, coffee and tobacco were essential products of

trade, though often lack visibility in the discussion of local pasts. The Sámi made their first pipes out of organic materials, such as wood, reindeer antler, and birch bark, but they later adopted the clay bowl pipe, copied from those produced by Scandinavians, Finns and Russians. In the late 17th and 18th centuries, pipe smoking became more widespread among Finns and Scandinavians in Sápmi, and pipes made by Sámi were often traded for goods (Borvo 1999). Despite their historical ubiquity, SVD lacks pipes in their collection. Her interest in Sámi tobacco culture and pipe design crosscuts her personal and professional life. She connects with her grandfather Issát Sámmol Niillas (1917-1988), who passed away before her birth, through family photographs. Often, he was seen with a pipe in his mouth. Today, the art of pipe smoking is on the wane and both historical and contemporary pipe designs, both handmade and manufactured, are considered precious accessories and heirlooms. Handling and studying Smithsonian pipes is thus rooted in the exploration of personal history that connects her to her own immediate kin, yet also constitutes an exploration of materials that have resonance with broader communities of practice.

Beyond the material reconnection, the trip provided additional benefits, ranging from relationship building to exposure to new technologies, and honed practical experience with 3D modeling. Rauhala recounted the benefits of exposure to new ideas and technology that could have significant application in museums in Sápmi. She viewed the RTI demonstration with attentiveness, and she developed an interest in applying the method to understand different reindeer leather/skin processing methods and features of deterioration. She thinks RTI could reveal new visual perspectives on tanning and smoking methods. Through the week, Rauhala developed additional practical experience with 3D scanning using the Artec units at multiple scales—from the pipes and *fierra* on the smaller end, to objects as large as a sledge.

From a collections management point of view, it was fascinating how the Smithsonian NMAI Cultural Resource Center was assessing and managing their collections. In addition to preserving the physical elements of an object, they preserve and foster objects' cultural integrity by developing collaborative relationships. These collaborations have resulted in a renewed concept of collections as family heirlooms.

Reflecting upon the week, Rauhala expressed the exchange as a form of balanced reciprocity that emerged over the course of the trip. She described the trust that was built between individuals and institutions, as small as SVD, and as large as the Smithsonian. She was surprised at the ease with which good working relationships were established between institutions of such disparate sizes. Rauhala compared the quick headway made through relationship building at the Smithsonian to the slowness of progress with state governments in Finland and Norway. The provision of information about the collections their group provided, she felt, was balanced with what the Sámi group received in return—opportunities for future collaboration, internships, and resource and knowledge sharing. Looking to the future, the digitization and study of these exhibitions may lead to an exhibition surrounding Sámi pipe practices, facilitating a sharing of histories which lack material witnesses in SVD's collections.

Better to Be in Motion

What do 58 objects sitting in the drawers of the largest institution mean when activated by an Indigenous community, their elders, artisans, educators and curators? Mediated by 3D modeling, this article emphasizes the potential of the smallest collections as vehicles for reconnection and exchange. An assemblage which may confer limited museological value or meaning, in a classic sense, must not be ruled out as significant to descendent communities and individual stakeholders. Small collections must not only be considered for the value they may inherently represent as (in)tangible cultural heritage, but also the potential of these objects to form new relationships and shape contemporary Indigenous visions beyond the things themselves.

Framed by the collection of digital 3D models, Sámi engagement of the collections evoked a number of different responses. Through the process of reviewing records in advance of travel, trip participants and broader community members expressed concern about the incompleteness, inaccuracy, or lack of a Sámi naming scheme associated with catalogs. Still, there was a cautious desire to contribute to museum records at the Smithsonian. While inspired through the visit, participants expressed a conservative approach towards sharing information. Multiple participants expressed a need to be critical about what cultural details are contributed to major museums and voiced that any exchange should contribute to a balanced reciprocity. This

discussion took place surrounding not only more traditional media, like two-dimensional museum records, but also regarding new digital media like 3D models.

New technologies have the potential to transform Indigenous engagements with museums both positively and negatively. The implementation and collection of 3D models by the Sámi group at the Smithsonian provides opportunity. Taken home, they will strengthen connections to cultural heritage housed far away, with latent promise to activate new relationships and meanings in the future. In parallel, these emergent dialogues surrounding new digital media facilitate productive but critical discussions on Indigenous data sovereignty and representation, building on locally established conceptions of cultural heritage protection already robust in Indigenous-led institutions. 3D digitization should take place cautiously, ensuring that the risks and benefits of modeling are assessed and understood to safeguard Indigenous intellectual property from misuse, including appropriative commercialization.

As the trip proceeded, the process of handling and digitizing objects evoked a broad range of meaning for participating individuals—ranging from the affirmation of family tradition, to a source of exchange related to traditional care, and a place to engage in dialogue about the responsible stewardship of 3D models. Launching from the consultation of elders and the knowledge of individual participants, the small collection also contains material culture meaningful to Sámi communities at large. To begin, the age of the collection conveys significance. Collections that predate the German burning are uncommon in Sápmi and provide perspectives on lifeways impacted by war and assimilation. Additional objects attest to important moments in history, or are otherwise rare in Sámi museums themselves. Most notably, a model produced by Lars Hætta while imprisoned following the Guovdageaidnu rebellion, is a potent symbol of resistance. The *fierra* is uncommon in Sámi museums but essential to contemporary revitalization movements. The histories of these objects, rare and of social importance in Sápmi, can be raised to consciousness through sharing their 3D representations.

Although the Sámi belongings in the Smithsonian collections generally lack extensive documentation, they may be interpreted through a contemporary lens of *duodji*. For materials that are rare in Sápmi or otherwise unique, complex digital representations produced during this

visit may allow for further study and sharing with artisans and broader Sámi publics. For instance, the Sámi who moved to Alaska to introduce reindeer herding in the 19th century adapted to new conditions, ecological environments, availability and quality of natural materials for making tools, clothing, shoes and everything they might have needed. The traditional value of being self-sufficient and inventive can be identified across the small collection, establishing a space for reflection and interpretation, as well as admiration for the innovative skills of Sámi ancestors. While oral histories surrounding Sámi in Alaska are actively passed down to this day—the names of people who moved are well known—few materials from these exchanges are available to display in Sápmi. Digital objects reflecting this period of history, deployed in Sápmi for educational purposes in a museum or classroom, would add breadth to stories of Sámi coping.

The trip was further highlighted by an exchange of ideas related to Indigenous and collaborative museology spanning Smithsonian branches, from the National Museum of Natural History to the National Museum of the American Indian and Smithsonian Institution Exhibits. Participants suggested that the presence of a small group of objects was significant because it provided the opportunity for intellectual exchange between their small Indigenous institution and the stewards of some of the largest collections in the world. Across these bodies, an exchange of ideas occurred surrounding collaborative collections care and digital 3D technologies. To spend time and learn about contemporary museum practices in the United States provides strong cultural capital to mobilize within Fenno-Scandinavian museum systems. For instance, knowledge gained through this trip may be deployed in the development of the new museum building in Kárášjohka, asserting visions of contemporary museology that will bring advanced equipment and higher levels of funding. Sámi authors of this article came away especially inspired to incorporate spaces for community gathering after visiting NMAI's storage facilities, which include a space to ignite fires and conduct ceremonies.

While the exchange discussed in this article took place over one week, a process of sharing information back with the community is just beginning. On October 31st, 2022, a small selection of 3D models were presented to the group of elders in Kárášjohka. While the study of material culture firsthand is ideal, the creation of digital assets represents one significant place to begin a

dialogue between institutions and descendant communities where (inter)national travel is expensive and time-intensive. Following conversations about the co-stewardship of data and in the footsteps of collaborative Tlingit projects, a small subset of 3D models may be placed online using the Smithsonian's Voyager platform, with protection against download, in the North Sámi language. This will amplify Sámi voices through the objects housed at the Institution. Other objects may be accessioned to SI as born-digital cultural resources. In the medium-term, these technologies and models may be integrated with teaching at the Sámi Allaskuvla and be used in presentations in museum contexts.

As Indigenous communities engage museum collections with increasing vigor and an expanded digital tool belt, and as institutions receive them, it is important for all parties to think beyond the largest museum holdings, and in fact the objects themselves, in consideration of the reciprocal relationships they represent. Using new technologies to approach these belongings promises to increase their relevance for descendants near and far. Confronting entrenched ideologies about what constitutes valuable research subjects in museums, we hope the message of this work will encourage curators and communities to think of no collection drawer too small to open.

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