Producing New Media Ethnographies with a Multi-Sited Approach

Kate Hennessy, Claude Fortin, Aynur Kadir, Reese Muntean, and Rachel Ward

Making Culture Lab at Simon Fraser University's School of Interactive Arts & Technology (SIAT)
Surrey, British Columbia, Canada
{ hennessy_kate | cfortin | akadir | rmuntean | rmward }@sfu.ca

Abstract

Ethnography is an inductive methodology that generates its own object of study through a series of encounters, while laying bare the modes of construction that are used to do so along the way. The result, the ethnographic media text, serves as the canvas for a subjective reflection on culture, but it is also often its own art piece that can take the form of a literary work, an illustrated catalogue, a collection of photographs, a video or an installation. What happens when ethnographic works are made with electronic media or when they are interactive? Does the use of digital research tools disrupt the making of ethnographies or does it trigger the emergence of new possibilities for ethnographers? Are some methodologies better suited to addressing the new ontological conditions of emerging digital-material research tools? By presenting three new media ethnographies that have been produced with a multi-sited design approach, our article suggests that this particular methodology might offer significant advantages when conducting ethnographic research involving new media technology. These examples of practice aim to show how the affordances of electronic art can better support an object of study that is complex in scale, multi-dimensional, shifting, and multiply situated.

Keywords

Multi-sited ethnography; research-creation; inductive approaches; digital cultural heritage; intangible heritage; Aboriginal research.

Introduction

As Tyler remarks, *in lieu* of providing scientific insights or political understandings, ethnography is a form of writing that engages in a process of negotiating and renewing ethical visions of the world. [1] Ethnographers achieve this by using three rhetorical strategies: *descriptive* (by presenting subjective observations on people and cultures), *interpretive* (by highlighting the relationships between these observations), and *reflexive* (by exposing the constructed nature of the relationship between the observer and the observed).

Ethnography is an inductive methodology that generates its own object of study through a series of encounters, while laying bare the modes of construction that are used to do so along the way. This implies that it is, as often as not, an open-ended exploration which consists of carefully documenting, not only a set of observations, but also a research process that will itself be submitted to scrutiny.

In cultural anthropology, the ethnographic text serves as the canvas for a subjective reflection on culture, but it is also often an art piece that can take the form of a literary work, an illustrated catalogue, a collection of photographs, a video or an installation; it has the dual status of research outcome and cultural product – *the research-creation*. As such, it can go beyond describing, interpreting, and reflecting on a given understanding of culture to provide valuable knowledge on the material practices of art-making. This implies that there may be a body of ethnographic inquiry that undertakes similar research objectives and strategies as do some research-creation methodologies in the arts.

But what happens when ethnographic works are made with new media technologies or when they are interactive? What are the ethical implications of such forms of artistic production? What opportunities and challenges arise when ethnography is practiced within the parameters of technical culture? Does the use of digital research tools disrupt the making of ethnographies or does it trigger the emergence of new possibilities for ethnographers? Are some methodologies better suited to addressing the new ontological conditions of emerging digital-material research tools? How could they best support new media creative practices?

Based on the assumption that some ethnographic texts may also be understood as research-creation projects, this paper suggests that a multi-sited design approach to making culture might offer significant advantages when conducting ethnographic research involving interactive new media technology. To support this claim, the first part of this paper will expound multi-sited design ethnography as a methodological tool recently introduced to the study of human-computer interaction (HCI), while the second part will provide three examples of practice in new media. The paper will conclude with a discussion on multi-sitedness.

A Multi-Sited Design Approach to New Media

All the authors of this paper are affiliated with the media anthropology lab of a HCI design department in which researchers conduct multi-sited design ethnographic research by building and maintaining *epistemic relationships* with informants encountered during fieldwork. Multi-sited design is a methodology recently introduced to the field of HCI by Dourish and other practitioners. [2]

This emerging HCI constructionist methodology combines two approaches: first, the practice of multi-sited ethnography as theorized by Marcus, [3] second, the tradition of participatory design that originated in Scandinavia. [4]

Multi-Sited Ethnography

Multi-sited ethnography is an interdisciplinary critical approach conducted in multiple, distributed, and shifting (micro) locales to later be analyzed against the contours of these sites' overarching (macro) context. [5]

While traditional ethnography typically sees one or sometimes several ethnographers describe a single, well-circumscribed site, in a multi-sited approach, one or more researchers can be sent to observe each of the fields in which stakeholders might play a role in the creation, production, distribution, and reception of a social structure.

Practically speaking, this means that fieldwork is conducted in a distributed environment made up of multiple sites. By moving in and out of these sites, the ethnographer can come to know the actors, customs, routines, practices, and idiosyncrasies tied to each one of these locales. This means that rather than studying a single location as the product of global phenomena, in a multi-sited approach:

"the researcher travels to multiple sites, following various pathways in order to assemble a narrative [which] is intended not to give the ethnographer more cases…but to expand a single case beyond its immediate location." [6]

By documenting observations, reviewing them, culling them, and drawing them together, one can get a sense of how an overall cultural structure functions. Because the mode of construction is to follow a single thread across multiple sites, multi-sited ethnography ostensibly produces "a distinctly different sense of 'doing research'." [7]

Participatory Design, Participatory Development

While Participatory Design (PD) is a set of methods used in HCI to engage people within a workplace, organization or community of practice in order to participate in the design of the computer systems they use in the everyday, the related approach of Participatory Development more broadly aims to "involve local stakeholders in development projects", notably in developing regions or countries. [8]

Perhaps these two distinct approaches point to what some authors refer to as a "drift in focus from participation as the means to a political agenda to participation, as a means to a smooth development and implementation, or sometimes as an end in itself." [9] What they have in common, however, is that both are inherently about the politics of design. Who participates in the design process?

Anthropologists tend to be familiar with collaborative approaches. For instance, collaborative ethnography aims to go beyond the solipsistic bias of participant observation, [10] while participant-generated ethnography takes a pragmatic stance towards the problem of gathering data in large-scale systems by actively involving informants. [11] As a result, many ethnographers using new media technology share a similar set of concerns as designers using PD.

New Tools, New Platforms, New Ethnographies, New Research-Creation Practices

The work that has laid the foundation for multi-sited design argues that the transnational character of everyday life in today's world system presents designers with unique challenges when making interactive media artifacts. [12] Multi-sited design is thus proposed as a tool that can effectively meet the conditions of contemporary life whereby "technologies are appropriated into local cultures and yet shaped by transnational politics and negotiations". [13]

It is for this reason that this emergent methodology has proved particularly well-adapted for our research. Multi-sited design allows us to each construct our research field as its own network of sites. This configuration can include physical, virtual, and imagined sites of representation. [14]

Practically, this means being able to relate and simultaneously explain phenomena, which occur within the new experiences of time and space enabled by connectivity and human-computer interaction. Whether events take place in real time or asynchronously, and whether they are situated in the hyperlocal or are mobile in global networks, multi-sited design offers ethnographers new tools to describe and interpret. Furthermore, the extant literature argues in favor of making the act of design part of the investigation: multi-sited design is thus a research-creation methodology:

"we attempt to build a multisited analytical framing in which design is central to both our research method and analysis, with a commitment to positioning design and ethnographic writing purposefully against exocitization or center-periphery binaries and toward empathetic connection" [15]

Producing ethnographies with multi-sited design gives researchers the flexibility to follow an object of study that is complex in scale, multi-dimensional, shifting, and multiply situated. Because our ethnographic texts are produced with interactive digital technologies, it also allows us to make better use of new media's specific affordances.

Three New Media Ethnographies

The following sections present three examples of practice that demonstrate how the multi-sited design approach can be applied to the production of new media ethnographies.

While in some cases, the sites may be multiply situated in terms of their geographical locations, in other cases, their multi-dimensionality may be manifest in how they assemble physical, virtual, and imagined sites of representation. For this reason, each of the three new media ethnography is described according to its genesis, its contribution to knowledge, its methodology, and its specific sites.

Appalachian Punks: A Multi-Sited Ethnography of Changing Traditions in the Era of the Interactive Documentary (Rachel Ward)

While folklore studies of Appalachia have typically focused on the documentation and archiving of traditional music, the first example of practice presented in this paper explores the global permutations and transformations of "traditional" culture as facilitated by new access to digital archives of cultural heritage. In this research-creation project, ethnographic inquiry is conducted through the parti-

Figure 1. *Performance by Appalachian "punk" band*, 2013, Rachel Ward, photograph, ©2013RachelWard.

cipatory development of an interactive documentary that will be produced through research and collaboration with the Smithsonian Centre for Folklife and Cultural Heritage, Library of Congress, interactive documentary producers, Canadian scholars and musicians, and community stakeholders from the northern Appalachian regions, specifically Pennsylvania, West Virginia, Pittsburgh and Brooklyn.

Genesis of the Research

In 2013-2014, Rachel Ward traveled throughout northern Appalachia filming a documentary short entitled "Appalachian Punks: A Resurgence of Tradition." This film explored the renegotiation of traditional mountain music from a young, contemporary punk aesthetic. A key component of this work is the in-depth interview that was conducted with Lester McCumbers, one of the last living traditional Appalachian fiddle players. During this interview, he explained that over 30 years ago, a man from the Library of Congress came to record him, but neither he nor his family had since been able to locate the recordings.

The Appalachian Punks research-creation project begins with the digital return of this "lost song", by tracing its beginnings from the instruments of West Africa and ancient European folk songs, to the archives in Washington D.C., to tape, CD, MP3, to the punk bands that are now performing these songs in Brooklyn and uploading their videos to YouTube™ as seen in Figure 1.

Research Contribution

From a theoretical standpoint, this project builds on scholarship exploring the implications of recent developments in the field of interactive documentaries and the UNESCO 2003 Convention for the Safeguarding of Intangible Cultural Heritage. It poses the question: how do interactive documentary projects create access to collections and help (or hinder) safeguarding intangible cultural heritage?

Although there is significant research in the realm of digital cultural preservation and visual documentation of Appalachian music, there is a gap in the literature that explores the use of new interactive documentary forms as

tools in the dissemination and preservation of culture, or in the making of a collaborative, "public anthropology". As a platform that is becoming integral to our understanding of the documentary as a genre, interactive documentaries utilize "action and choice, immersion and enacted perception as ways to construct the real, rather than represent it" [17]. Importantly, from an interdisciplinary perspective, this project addresses the call for the use of Marcus's multisited method applied to the field of human-computer interaction design research. [18]

Research Methodology

Following her fieldwork in the Appalachian region, where struggles with poverty, illiteracy, and unemployment are pervasive, Rachel's dual roles as field-researcher and collaborative media producer have allowed her to identify community desires related to heritage preservation, technological training, and education. The culmination of her background and training in anthropology, new media, and film, in combination with her community connections in this geographic region, have uniquely positioned her to undertake an original research-creation project that is both culturally appropriate and accessible in collaboration with folklore scholars, curators, archivists, musicians, documentarians, archaeologists, historians, and local leaders.

Rachel is tracing the historical, transnational, and virtual flow of this music across global and digital borders using multi-sited ethnography. This approach calls for the "tracking" of a single object, metaphor or allegory across sites of interest. [19] In the context of this project, the path of one song is "tracked" across Scotland, Ireland, France, England, West Africa (Mali and Senegal), Canada, and the United States via archives, communities, and virtual/hybrid spaces. This music exists in distinctive styles throughout North America: the "Scottish" tradition of Nova Scotia, "prairie style" of Saskatchewan, French-Canadian sounds of Quebec, as well as the traditional Appalachian and Francophone Cajun in the southern USA.

The project explores regional variations based on European settlement and the syncretic blending with First Nations and African American styles. For instance, the signature "Red River Jig" dance of the Aboriginal Métis (residing in Canada and the northern United States) is clearly traceable to the fiddle music introduced by French fur traders in the 1600's and the pow wow dance tradition. [20] This data is then published in a web-based, user-navigable interactive documentary, in which the viewer can trace the movement of a song from its African/Aboriginal/European origins to a live-stream of Brooklyn bands uploading their "punk" reinterpretations on YouTube™. The user can pause at specific interactive nodes for an in-depth exploration of multimedia sites containing film clips, audio, interviews, photographs, and archival materials.

Research Sites

This interactive documentary combines theory and praxis as a visual representation of transdisciplinary research related to globalization, digital repatriation, intangible cul-

tural heritage, traditional knowledge (TK) transmission, and participant production as a research method.

Through collaborative research, Lester's "lost song" is traced as a metaphor for cultural knowledge and globalization, while addressing important (yet little known) African, First Nations and multi-cultural contributions. Distinct from folklore studies that focus solely on documentation, here, music is utilized "as a tool of discovery to question value systems – not just the differences between genres or subjects, but how the divides themselves are constructed and negotiated". [21] At the local level, this research will make a significant contribution to the creation of a digital resource that attends to local needs by focusing on the "value of meaningful community participation in efforts to safeguard their digital cultural heritage". [22] This type of methodological advance in the field of digital, participatory, and interactive documentation will reinforce the development of visual, collaborative, and interactive methodologies as novel fields of scholarship.

New Media and Intangible Cultural Heritage: Digitization, Documentation, and Circulation of Uyghur Dastan (Aynur Kadir)

The second example of practice presented in this paper is a media archive co-produced by the Making Culture Lab, the Xinjiang Folklore Research Center, Uyghur folk artists in Khotan Village, Xinjiang, and youth participants from the Uyghur community. Dubbed the *Digital Uyghur Dastan Archive Prototype*, the end product is to be designed in collaboration with community members through a slow, ongoing iterative design process. The purpose of this research-creation project is to use digital media to give tangible form to an intangible cultural heritage in China, which is increasingly endangered.

Genesis of the Research

China's vast northwest region, Xinjiang Uyghur Autonomous Region, has a rich and colorful history and has long been a unique blend of cultural influences. For hundreds of years, it was a vital link in the famous Silk Road, the overland trade route that connected China with Europe through Central Asia. Xinjiang's Uyghur people represent the easternmost expression of Turkic Islamic culture.

One of the largest traditions among Uyghurs includes *Dastan*, epic oral narratives which use both poetry and prose to dramatically recount events from the past. Dastan embrace a wide range of themes: not only the Uyghurs' ancient "heroic age", but also religious tales, love stories, and historical events like farmer revolts. Uyghur folk Dastan are of great length and complex subject matter, and are musically and instrumentally demanding. Dastan are played and performed by *Dastanchi*, skilled and specialized folk artists. They display their talents on market days and during traditional festivals. Dastanchi accompany themselves on traditional Uyghur instruments like the *rawap*, *dutar*, and *tembur*, while simultaneously adopting

the roles of numerous characters during poetic and narrative Dastan verses.

However, as modernization continues to transform Xinjiang, Uyghur Dastan are rapidly vanishing from public view. Dastanchi, nearly all of them elderly, are now facing significant challenges to the sustainability of their ancient craft. In the past decade, researchers and students from Xinjiang Folklore Research Center collected an archive of over one hundred magnetic audiotape recordings and more than fifty videotapes of different sizes and formats documenting the Dastan. This collection needs proper organization and archiving in order to be digitized and returned to the community.

This project is especially urgent since only a dozen Dastanchis are still alive and available to record the most recent Dastan versions and to determine ethical treatments and cultural protocols for digital archiving. As a result, important questions regarding representation, copyright, intellectual property, ownership, and control of documentation and circulation in digital form must be addressed immediately for this knowledge to be transferred across time and space, for the benefit of future generations and publics around the world.

Research Contribution

The need to safeguard intangible cultural heritage around the world has garnered international awareness in recent years as a growing number of traditions have been deemed endangered. [23] This research focuses on the blending of theoretical, practical, and ethical issues in the collaborative design of a digital archive for intangible cultural heritage in order to assist in the safeguarding of Dastan.

The development of digital media technology has facilitated new ways of preserving and protecting such cultures. [24] For example, digital archiving and participatory filmmaking are seen as important tools for the documentation and revitalization of Aboriginal languages and cultural practices. [25] This nexus of culture and technology must take into account local cultural protocols for ownership and circulation, and Indigenous curatorial approaches. [26]

A number of media-specific questions arise from this research-creation project: How can digital knowledge sharing be facilitated through multi-sited ethnography and participatory design? How do existing cultural protocols and social, national concerns shape access and control of traditional knowledge in virtual space? What are the current protocols in which Uyghurs preserve and transmit their cultural heritage? How can we apply these understandings to represent intangible cultural heritage in a digital world while utilizing community-based approaches? What kind of challenges and opportunities are associated with media production, and archiving within the Uyghur context? What are the possible categorizations, meta-data standards, and technical treatments for media materials in the archiving process? What are the most appropriate ethical frameworks for the circulation of Uyghur digital heritage?

This research aims to explore emergent theoretical and practical issues regarding ownership chronologies, continu-

ity of traditions, repatriation potentialities, and to collaboratively negotiate opportunities and challenges associated with the digitization and return of cultural heritage. The outcome and level of access will be determined through collaboration process and will highlight usage of cultural protocols and national concerns as defining features of an interactive system. This research will draw attention to the importance of understanding traditional protocols for the handling and care of intangible culture, and how these may be adapted for use in preserving digital versions of culture.

Finally, this study expounds on how traditional cultural gatekeepers think and have functioned in the past and how their role may evolve in the future. The archive development process – understanding what a digital archive means at the community level – will make a significant contribution to research by addressing a gap in this area of research and by providing a platform with the potential to connect later generations with their culture in a sustainable way.

Research Methodology

As a media maker and Uyghur community member, Aynur Kadir is uniquely situated to undertake a research-creation project that involves developing and critically analyzing a digital archive prototype for the audio-visual materials of Uyghur Dastan. Her research plan begins with an investigation of the discourse surrounding the mobilization of Uyghur identity. It is to be conducted within the context of her role in the design and development of a community-based, sustainable web-based digital heritage prototype for and in collaboration with the Uyghur community.

The Digital Uyghur Dastan archive prototype is then to be designed through an iterative design process with community members using multi-sited ethnography and collaborative participatory design methods. These research strategies are needed because a single-sited ethnographic approach would not be a suitable tool to effectively produce and evaluate this collaborative digital archive system.

The reason for this is multifold. First, Aynur intends to conduct traditional anthropological fieldwork in different villages of Xinjiang region with collaboration with folk artists. Second, she will also categorize and organize physical/material archives in Xinjiang Folklore Research Center, China. And third, the post-production and media producing will take place in the Making Culture Lab, Canada.
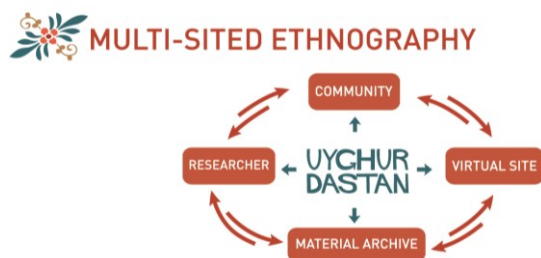

Figure 2. Diagram of the multi-sited design research model used in *Digital Uyghur Dastan Archive Prototype*, ©2013AynurKadir.

During the collaborative process, Aynur will create the digital archive virtual site, which is open to community and researchers to add continuous data/metadata of latest related Dastan materials. This virtual site will be another important "field site" that will be used to reproduce/represent traditional cultural knowledge. As represented in Figure 2, in this project, Uyghur Dastan is therefore the key location that connects different geographical communities, research labs, and virtual sites created by researchers and community together.

The interdisciplinary practice of multi-sited ethnography will allow Aynur to mobilize her cultural and academic identities and responsibilities during the research and production of this digital media research-creation project. In her quest to find answers to the ethical, practical, and theoretical questions raised by her research, she will also "follow" the Uyghur Dastan in different sites.

Based on collaborative participatory design experience and multi-sited ethnographic fieldwork, Aynur will trace representation, ownership, and intellectual property issues surrounding Uyghur digital cultural heritage. Not only will attention be drawn to the important role of digital technologies in the preservation and revitalization of culture but questions and concerns about how to best represent intangible expression in digital space and intellectual property issues in cultural heritage will also be explored. In summary, Aynur will set out to investigate both global and local theoretical, ethical, technical, and practical considerations for the Uyghur digital archive context.

ʔeləw̓k̓ʷ – *Belongings*: A Tangible Table in c̓əsnaʔəm, *the city before the city* at the Museum of Anthropology (Reese Muntean)

ʔeləw̓k̓ʷ – Belongings is an interactive tangible tabletop activating replicas of Musqueam belongings excavated from the c̓əsnaʔəm archaeological site along the banks of the Fraser River in what is now known as Vancouver, British Columbia. These ancestral belongings, along with contemporary objects of significance in Musqueam life, are placed on the tangible table to access cultural knowledge and stories about the First Nation's long history of fishing as well as its practice today. The table was designed by faculty and students at Simon Fraser University's School of Interactive Arts and Technology's Making Culture Lab and Tangible Computing Lab along with curators from the Museum of Anthropology (MOA). The table was installed in MOA as part of c̓əsnaʔəm, *the city before the city*, an exhibition hosted by three institutions (Musqueam Indian Band, the Museum of Vancouver, and MOA) in an exploration of one of largest ancient village sites on which Vancouver was built.

Genesis of the Research

Building on an existing research relationship with the Museum of Anthropology, The Making Culture Lab approached c̓əsnaʔəm, *the city before the city* curators Jordan Wilson and Sue Rowley about the possibility of contrib-

uting an interactive media-focused project to the exhibition. After consultation with the curators and representatives of the Musqueam Indian Band, an interest was confirmed in developing a tangible computing application to convey the complex significance of belongings—known by archaeologists as artifacts—for contemporary Musqueam people and their continuity with ongoing everyday practices. Making Culture Lab Researchers partnered with Dr. Alissa Antle's Tangible Computing Lab to begin an iterative co-design process with curators Rowley and Wilson that would merge interaction design research with critical museological approaches to representing archaeological collections and their contemporary lives as 'belongings'.

Research Contribution

This research builds on the movement of repatriation and digitization of cultural objects as well as the reviving, archiving, and again, digitizing, of intangible heritage. Processes and protocols are developing for sharing traditional knowledge digitally within a community while retaining the cultural customs around such knowledge, and institutions are opening their own archives for input and annotation from community members and local experts. [27] ʔeləw̓k̓ʷ – Belongings was similarly developed using values-led participatory design methods to highlight Musqueam values and voices along with the goals of the museum curators in the creation process. [28] This work further explores how interaction design and tangible user interfaces can be used to share cultural objects and intangible heritage with museum visitors as seen in Figure 3.

Research Methodology

ʔeləw̓k̓ʷ — Belongings represents a multi-sited approach to the collaborative design of an interactive media installation for a major Canadian museum. Reese Muntean from the Making Culture Lab was involved in the development of the tangible table as the project manager. By taking notes, documenting meetings, and overseeing the collaboration, she was able to observe the design process of the tangible table. From the overall goals of the project as expressed by the individual team members at the onset to the installation of the table in the exhibition, Reese was able to witness the entire design and document much of its process.

Reese is now part of a team who is studying the table in the museum and its reception by museum visitors. Visitor interviews and observations are being conducted to access the use of the tangible table technology in the museum setting and whether or not the visitors received the messages that the curators intended.

Research Sites

Reese's research sites can be understood as sites of "Belings" and sites of "Knowledge" (although these concepts are inseparable from one another). We begin by describing "Belonging Sites". ʔeləw̓k̓ʷ — Belongings uses physical replicas of both ancient belongings from the burial site at c̓əsnaʔəm as well as contemporary belongings to teach

Figure 3. Testing ring and replicas for ʔeləw̓k̓ʷ – Belongings, 2014, Reese Muntean, Digital Photograph, ©2014ReeseMuntean.

museum visitors about the technological and traditional knowledge from Musqueam history and how that knowledge persists as part of the culture and day-to-day life.

The belongings embody a long history. For example, one of the replicas is cast from an original net weight housed in MOA as part of the Lab of Archeology's (LOA) collection from c̓əsnaʔəm. The net weight was originally used over one thousand years ago to place fishing nets. Excavations beginning in the late 1880s removed human remains and cultural objects from the village's burial site, and this net weight was one such item – along with hundreds of net weights – that ended up in the museum.

In 2010 MOA, Musqueam Indian Band, Stó:lō Nation/ Stó:lō Tribal Council, and U'mista Cultural Society launched the Reciprocal Research Network (RRN), partnering with other cultural institutions to bring the net weight and artifacts online and accessible to the community as well as researchers. Using the RRN website, collaborators can work together on projects, viewing, tagging, and commenting on items held by the partner institutions. The designer and curators of the tangible table used the RNN to access information about the net weight and other belongings, build prototypes, download images, and select final belongings from which to create molds for the replicas.

After viewing the original belongings in MOA and receiving permission from Musqueam, molds of the belongings were then made. Lastly, each belonging exists in the code of the table, and when museum visitors place the replicas on the table, that information is shared.

Other research sites can be called "Knowledge Sites". The traditional knowledge and intangible cultural heritage transmitted though the table was relayed to the design team from the Musqueam Indian Band through the MOA curators. Throughout the process, the designers made every attempt to implement and imbed the cultural values, as the designers understood them, into the design of the table, into the activity of designing the table, and all related documentation. Examples include the use of the term belong-

ing, earning knowledge, and the documentation and implementation of Musqueam's hən̓q̓əmin̓əm̓ language.

The term *belonging* was applied to all of the artifacts from c̓əsnaʔəm, as the Musqueam people still see the ownership of these items as remaining with the people who originally created them; these are the belongings of their ancestors. The term has been adopted by the design team and used in all discussions, meetings, and project-related writing and research.

Another example is the idea of earning knowledge. This concept was incorporated into the activity design of the table. For each of the twelve belongings, a visitor must learn about different aspects of the belonging, including basic information (what it is, what it does, and the name in hən̓q̓əmin̓əm̓), how it connects to Musqueam fishing technologies (incorporating the fish preparation image that is displayed on the table), and how it relates to contemporary issues in Musqeaum culture (which matches the ancient belonging to a contemporary).

Lastly, designers took care to ensure hən̓q̓əmin̓əm̓ terms and Musqueam language preferences were translated correctly into the digital form of the project and documentation. hən̓q̓əmin̓əm̓, traditionally a spoken language, uses the North American Phonetic Alphabet for writing which is often difficult to render properly on computers since many fonts do not include the necessary glyphs. Musqueam approved an abbreviation of c̓əsnaʔəm, which was used in standardizing file names for the digital archive of the project documents as well as in the code written by the tangible table programmer.

This constellation of sites – physical and virtual representations of belongings and knowledge – articulate the multi-sited collaborative interaction design process and its reception in a major cultural heritage institution.

Conclusion

After having expounded multi-sited design ethnography as a new methodology in HCI research, this article presented three new media ethnographic works that serve as contemporary explorations of multi-sited design. Each of them was described as its own research-creation process, which begins with a clear intention that becomes the trackable thread of the project and expands into multiple research sites. By doing so, this article set out to show that multi-sited ethnographers craft their sites as they go, guided by the encounters they make along the way. Tracing their object of study becomes a means to make and express the relationships between who and what they encounter.

In Rachel's ethnography, the multi-sited approach allowed her to describe the interplay between situated physical sites and online virtual sites of representation. In Aynur's project, since the archive has not yet been created and may never be created for political reasons, the sites are physical, virtual, and imagined; one could say the archive is a latent site. And finally, in Reese's work, the sites are both tangible (belonging sites) and intangible (knowledge sites). Here, the multi-sited design approach supports knowledge transfer by connecting these sites to one another, as well as through interactions between stakeholders.

All three of these projects highlight how multi-sited design uses digital-material research tools to engage in a narrative mode of knowledge production that experiments with today's augmented configurations of time and space. At a moment in which the majority of ethnographic documentation and representations are born digital and take on multiple lives and forms in virtual spaces [29], we view multi-sited design as a promising methodological direction for the creation and evaluation of these works. Further, as digital forms of ethnographic representation are increasingly intersecting with art and design initiatives – for example, see the work of the curatorial collective *Ethnographic Terminalia* [30] [31] – we aim to make a contribution to a growing movement in anthropology that values research-creation as scholarly praxis.

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Author's Biographies

Dr. Kate Hennessy is an Assistant Professor specializing in Media Anthropology at Simon Fraser University's School of Interactive Arts and Technology (SIAT). Her research explores the role of digital technology in the documentation and safeguarding of cultural heritage, and its representation and exhibition in new forms. She is the Director of the Making Culture Lab at SIAT, where she oversees the research of the four graduate students who have co-authored this paper.

An interdisciplinary scholar, Claude Fortin is a doctoral candidate at SIAT. She applies a multi-sited design methodology to research that aims to help bridge the gap between the diverse stakeholders involved in the design of architectural-scale urban technologies.

Aynur Kadir is an ethnographic filmmaker and doctoral candidate at SIAT. She holds a Bachelor's degree in Education Technology from Xinjiang Normal University and a Master's degree in Folklore Studies from Xinjiang University.

After obtaining her undergraduate degree in Photography & Imaging and East Asian Studies at New York University, Reese Muntean is poised to complete her Master's degree at SIAT.

Now a doctoral student at SIAT, Rachel Ward completed her Master's degree in Social Anthropology at The London School of Economics in 2010 and a degree in Visual Anthropology at the Australian National University.