From Caribou Hide to Pixels:
Digital Heritage and Interaction Design in the
Virtual Museum

by

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Abstract

In this thesis I perform close readings based on my experience interacting with three different versions of an object – a traditional Inuvialuit parka in the Smithsonian's collection, and the garment's respective digital representations on two sites: 1) on the Inuvialuit Living History project and 2) on the Smithsonian Institution's online database. My analysis is based on common principles between Activity Theory (AT) and the premise of Intangible Cultural Heritage (ICH). AT claims human activity as the foundation in meaning making (Kaptelinin & Nardi, 2006), while ICH is defined as ensembles of actions considered as meaningful traditions and practices beyond utilitarian purposes (Kurin, 2007). The close reading attempts to understand how these principles may inform effective design practice for representations of digital cultural heritage. In particular, how they are manifested in the digital heritage interface through the analytical lenses of: 1) new media narrative; 2) interactivity; and 3) spreadability of meanings.

Keywords: Digital Heritage; Activity Theory; Intangible Cultural Heritage; Narrative; Narrativization of Interface; Interaction Design.

I would like to dedicate this dissertation to my parents, Arief and Liemay Prastio, my daughter Samantha Surtandi and my partner Michael Rouse for their continuous support and encouragement.

Acknowledgements

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List of Acronyms

ILH   Inuvialuit Living History

SIMA   Summer Institute in Museum Anthropology

AT   Activity Theory

ICH   Intangible Cultural Heritage

HCI   Human Computer Interaction

Glossary

Aura	Relates to the object's authenticity and authority. Authority, in this case, refers to the concrete marks of the object's creator while authenticity refers to one's experience with the object within the same time and space and how the object testifies about the history it has experienced (Benjamin, 2008).
Narrativity	A scalar measurement of media text's ability to invoke stories in the mind
Narrativization of Interface	The use of narrative elements in design of the interface to improve user experience
Object	In context of Activity Theory "object" refers to the environment or the world or the objective of action.
Producerly	Characteristic of media text in inviting its user to participate in content creation.
Spreadability	The technical resources that make it easier to circulate some kinds of content than others, the economic structures that support or restrict circulation, the attributes of a media text that might appeal to a community's motivation for sharing material, and the social networks that link people through the exchange of meaningful bytes. (Jenkins and Ford, 2013, p.4)

Chapter 1.   Introduction

1.1 Introduction

This thesis performs a close analysis on the user experience aspect of three different representations of an object in a museum collection. The physical object is a traditional Inuvialuit parka circa 1866 in the Smithsonian's collection, which I had a chance to handle during my Summer Institute in Museum Anthropology research in 2013. The second version of the object is its respective digital representation in the Smithsonian Institution's online database and the third version is the object's digital representation in the Inuvialuit Living History virtual exhibit project.

My analysis bridges common perspectives in Activity Theory (AT) and Intangible Cultural Heritage (ICH). AT places human activity and lived experience as the primary source of knowledge and meaning. ICH stresses the critical role of the intangible element of culture, such as traditional practices, performance, and languages among many others, as the key factor in the transmission of cultural values and productions. My thesis relates these theories to user experience while interacting with the object. Using the methodology of close reading, I will examine my experience of handling a physical object and compare it with my experience of interacting with two of its digital representation through the analytical lenses of new media representations, interactivity and emergent social networking.

In 2003, UNESCO published a report discussing the current state of the world's rapidly declining cultural diversity due to globalization. The report highlights the challenges in maintaining the world's cultural diversity. It also raises the awareness that there is an urgent need to create programs that can help revitalize the world's cultural diversity. Among the few public institutions that hold a stake in the above effort is the

museum. However, in order to reach this goal, a reconfiguration of the traditional premise of a museum and its associated experiences is needed (Kreps, 2013).

Known as the place that holds and showcases valuable collections of artefacts, one of the main responsibilities of a museum is also to preserve cultural heritage objects collected from all over the world. However, until just recently, a typical museum experience generally has involved viewing objects in the museum's collection through a display case. It may also consist of reading information about the object, which was written from a very limited range of perspectives. Most often objects are presented with an interpretive text, in many cases, derived from the perspective of the collector or curator. Until recently, information about objects in museum was often represented exclusively from the museum's point of view, usually without considering the point of view of the culture the object originated from. For this reason, some consider museums cannibalistic in their nature of practice as they appropriate other people's material and objects for their own study and interpretation (Ames, 1992, p.3).

Aside from creating an imbalance in power relations between the culture of the "collector" and the culture the object was originated from, most critically, the object's intangible elements, the practices and skills as the main and necessary ingredient for the transmission of cultural values and meanings are not represented. Therefore, because museums are institutions built upon an interest in educating the public, the absence of the object's intangible elements may result in the omission of the object's meaning from the distribution of public knowledge.

Recent discourse relating to the critical role of ICH introduces a shift of perspective. The new perspective is aimed at solving the challenges in bringing to the surface, the complex networks of intangible elements of an object as contextual elements that gives the object its meaning. This new perspective resonates with the critical role of human activity illustrated in both AT and ICH. In turn, museums will need to consider how to incorporate these contextual materials in which case, plurality of meanings must be supported through translation and reinterpretation as a part of museum experience.

In this digital age, many museums are adopting new media technology to help achieve the above goal both within its physical and virtual realms of user experience. Digital media technology is used not only to bring forward the complexity of the intangible aspects of an object, but also to showcase multiple voices derived from subjective interpretations of an object (Simon, 2010). This thesis provides a close analysis of how new media technology through its multi modal and programmable capability may extend the experience of an object in a museum collection by incorporating representations of contextual elements and interactivity as a part of its user experience design.   It also discuss how these experiences are relevant to the documentation, preservation and transmission of intangible cultural heritage as the precursory means of maintaining cultural diversity.

The three analytical lenses used in this close reading are 1) new media representation, specifically within the notion of "narrativity"; 2) interactivity; and 3) emergent social networking or spreadability of meanings.

Narrativity or "storiness" refers to the ability of a media text to invoke a story (Ryan, 2006; Bizzocchi, 2007), and it is the primary lens that drives the direction in this close reading.   In the specific context of objects in the museum collection and in relation to common principles in AT and ICH, where human activity is seen as the central element in meaning making, there is a need to bring forward the stories about the object's provenance and its associated processes and contextual aspects as they play critical role in the transmission of meanings, values, and knowledge, through reinterpretation and adaptation within its originating community.   The close reading methodology itself is a process of unpacking of these implied meanings through experiencing an object as a media text both subjectively and an objectively. As a scalar measure, the analytical lens of narrativity can also be used to gauge which stories are evoked more saliently through how narrative dimensions are represented on an object (as a media text). A close reading on the level of narrativity in a digital heritage object could reveal these contextual aspects and meanings associated with an object, which ICH suggests are the ensembles of actions, practices, the social network and community it originated from. Specifically for an object in the museum collection, this could either be the stories about the object's associated processes of making and using which gives the

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object its meaningful context within the community it originated from, or the stories about the object's accession processes which is a part of the museum's curating practice.

The analytical lens of interactivity supports the concept of AT and ICH where human activity is seen as the ongoing externalization of mental processes. This concept of agency is a necessary means in acquiring knowledge and meaning about our surrounding. The four modes of interactivity: cognitive, functional, explicit, and meta or cultural interactivity (Zimmerman, 2004), will be used to gauge how meanings rendered from actions in the real world are translated onto the digital realm. The four interactivity modes correspond to the processes between our thoughts and actions. In the cognitive mode, we interact only in cognitive manner and interpretation is confined to our thoughts. In the functional interactivity, our interaction with the text is limited only for practical purposes. In explicit interactivity, our interaction with the text affects the designed choice and the meaning of the text. We form our own interpretation of the text by way of interacting with it. Finally, in the meta or cultural interactivity, the meaning created from our interactivity is shared and expanded to realms outside the initial text (Jenkins & Ford, 2013; Zimmerman, 2004).

The third analytical lens of spreadability in relation to openness and malleability is used to understand the extent to which knowledge and meaning can be shared and transmitted through social networking. As with the notion of meta or cultural interactivity, social networking platforms such as Twitter and Facebook act as sharing vehicles in expanding meanings outside the boundary of a single text. These networking processes play key role in the re-adoption and reinterpretation of traditional practices central to addressing the current challenges in revitalizing ICH.

Using the above lenses, I compare my experience of handling the parka to my experience interacting with the object's respective digital representations on the Smithsonian Institution's online database and the Inuvialuit Living History project. I evaluate how these digital representations compare in terms of narrativity, interactivity and social networking system and potential effectiveness in addressing the current challenges in revitalizing ICH.

Finally, my close reading concludes that although my experience in handling the E-1701 parka was superior in terms of its memorability of experience, it was not without its own drawbacks, which includes the general issue of access to the parka in the museum's collection, agency and malleability. Malleability refers to how much freedom is given in modifying the physical form of the object. The digital surrogate in the Smithsonian's online database scores poorly in terms of its effectiveness in context of addressing the challenges discussed within the ICH discourse. It was designed merely to serve as a form of documentation representing the museum's perspective. The digital version in the ILH site is more successful in terms of its potential to address the challenges in ICH. It attempts to represent the associated experiences embedded in a heritage object by making visible its contextual aspects. However, looking through the criteria presented by the analytical lenses chosen for this reading, there are still many aspects that could be improved, which I detail in the conclusion of the thesis.

1.1.1 Background

My motivation in writing this thesis comes from my childhood memories growing up in Indonesia in which cultural diversity was one of the most important factors that shaped my world. Indonesia is an archipelago that hosts about 18,000 islands consisting clusters of cultural ecosystem with their own unique cultural practices, ethnic languages, and religions. In the effort of promoting cultural diversity as one of Indonesia's trademark, the Indonesian government dedicates a large area north of the capital city Jakarta for the purpose of showcasing these diverse cultural practices and cultural artefacts from several of Indonesia's most prominent islands and their respective cultures. Pasar Seni (Art Market) is essentially an amalgamation of the Indonesian archipelago where visitors can learn about the arts and cultural practices from different parts of the country without the need to travel to each location. The area attracts visitors from domestic and international alike. Local schools groups often come to the area to learn about cultures from other regions while international visitors were more likely visiting the area to enjoy the arts and crafts scene, buy souvenirs, as well as to try various cuisines from many regions of Indonesia.

For some, this initiative might be perceived as a nationalistic approach, propaganda or a top down treatment for the purpose of unification, tourism and perhaps economic gains. However, for many people, the area becomes the space where they can earn a living, actively participating in the socioeconomic system while practicing their culture.

For me personally, the numerous trips to Pasar Seni either with school group or family and friends have undeniably brought awareness and appreciation for the rich and intricate craftsmanship embodied in cultural practices of our nation. This might not be apparent to me had the market not existed. Being a part of an archipelago, each one of the island (or clusters of islands) are quite isolated from one another, both in terms of physical location and ideologies. Residents of one island might not be familiar with the customs from other islands. I, for instance, who grew up in west Java, was not familiar with cultural practices from other islands like Borneo or Celebes. The island of Bali is an exception, as its popularity amongst foreigners has made it visible in mass media more extensively. Pasar Seni was a place where other less known areas of Indonesia are equally represented and appreciated in terms of their collective creativity as a part of our nation's culture.

Looking past its initial nationalistic motives, Pasar Seni could be perceived as an attempt at representing a cultural ecosystem that is dynamic and ever changing. It strives to appreciate culture beyond the tangibility of cultural artefacts and to encourage the curation of the knowledge and practices that activate these objects.

This led me to the topic of my interest, the concept of museum and how it is experienced in the digital age. How could the shift in museum practice, which was formerly based on the perspective of western curatorial voice to a more open approach that includes other voices, be translated into a digital heritage initiative? At the same time, my background in media arts and interaction design made me aware of digital media technology's strong potential to create meaningful new media experiences. Later, I became aware that there are overlapping principles between Activity Theory as one of the critical approach in interaction design today and the concept of Intangible Cultural Heritage.

I also realized that the application of these intersecting values in the design process of digital heritage initiatives has not been fully explored and studied. I see this as an opening that eventually drove the central inquiry of my thesis.

I was first interested in the role interaction design during my undergraduate study at the School of Interactive Arts and Technology. My interest in cultural heritage grew at the later part of my undergraduate years as I started working as a graphic designer for Dr. Kate Hennessy, a faculty member at SFU who specializes in media anthropology. Working with Prof. Hennessy in some of her projects made me realize the critical role of anthropology in design, particularly how visual ethnography as a part of research method can inform decision in crafting meaningful digital media experiences (Pink, 2013).

After graduating with a B.A., my interest in anthropological aspects of user experience design motivated me to continue my study under Professor Hennessy's supervision and later lead me to the Inuvialuit Living History project (ILH), a major digital heritage initiative project she was working on at the time in collaboration with the Smithsonian's Arctic Studies Centre and the Inuvialuit Cultural Resource Centre in Inuvik, Northwest Territories. Through this project I was introduced to the many challenges facing the effort of documenting and revitalizing intangible cultural heritage, but also I was made aware about the possibilities of digital media as a powerful device in achieving this goal.

Additionally, working on this project also made me understand the recent shift in museum practice, initiated by UNESCO's ICH Convention in 2003 upon recognizing the homogenizing impact of globalization (Kurin, 2007; Cuellar, 2003). This shift, which challenges museums to move away from a singular focus on curating heritage objects as cultural tangible heritage towards consideration of the intangible aspects of cultural heritage such as traditions, language, and skills, is one of the most critical issues many museums in digital age are facing. This new territory raises questions about how museums are engaging their visitors both within physical and virtual spaces.

Towards the end of my first year in graduate school, with the encouragement and help of Prof. Hennessy I applied to participate in the Summer Institute of Museum

Anthropology (SIMA). SIMA is a competitive program run by the Smithsonian Institution that offers workshops and lectures in museum anthropology as well as the opportunity to work with the broad range of artefacts in their collection. I was later selected as one of the twelve students to participate in SIMA 2013 during which I had an opportunity to examine some of the traditional Inuit parkas in the Smithsonian's collection. During this month-long workshop I also attended numerous insightful lectures on theoretical and practical aspect of material culture and the relationship to human experience. Through this participation, I was also made aware of the huge disparity in the quality of the experience between handling the artefact in person compared to interacting with its digital versions. Although each has its own advantages and weaknesses, I was curious about how these experiences measured up in context of revitalizing ICH. I also realized that there are potentials of what digital media can do to enhance the quality of these experiences, which I realized, they are far from being effectively implemented. This later became the subject that drives the central inquiries in my thesis and inspired me to evaluate my own personal experiences in handling and interacting with the analog and digital heritage objects. My research questions are:

How do common perspectives in Activity Theory and Intangible Cultural Heritage affect the approach in designing user experience for digital heritage initiatives?

How can the analytical lenses of new media representation, interactivity and emergent social networking paradigms identify and inform effective practice based on the above common principles between AT and ICH in designing the interface for a digital heritage initiative project?

1.1.2 Research Context (1) : The Inuvialuit Living History Project

The Inuvialuit Living History (ILH) is a digital heritage initiative that pursues the direction and values laid out in the UNESCO's mandate concerning the survivability of ICH. It attempts to harness the possibilities afforded by new media technology to look at cultural artefacts beyond their material existence by placing the people and the process from which the artefact comes from as key factors in the construction of meaning. The project stems from the Inuvialuit's interest in learning about their past to serve as the

foundation of their present identity. It comes into being through the work of many people with knowledge of an important but little-known collection of objects housed at the Smithsonian Institution in Washington, DC.   This collection of objects is called the MacFarlane Collection. Roderick MacFarlane was a Hudson's Bay Trader who assembled the objects. Aside from natural history specimens such as bird's eggs and animal skeletons, included in this collection is an additional 300 cultural objects collected from Anderson River Inuvialuit in the 1860s. These objects have been in the Smithsonian's care for nearly 150 years and few have ever seen the collection in its entirety (Lyons, Hennessy, Arnold, & Joe, 2011).
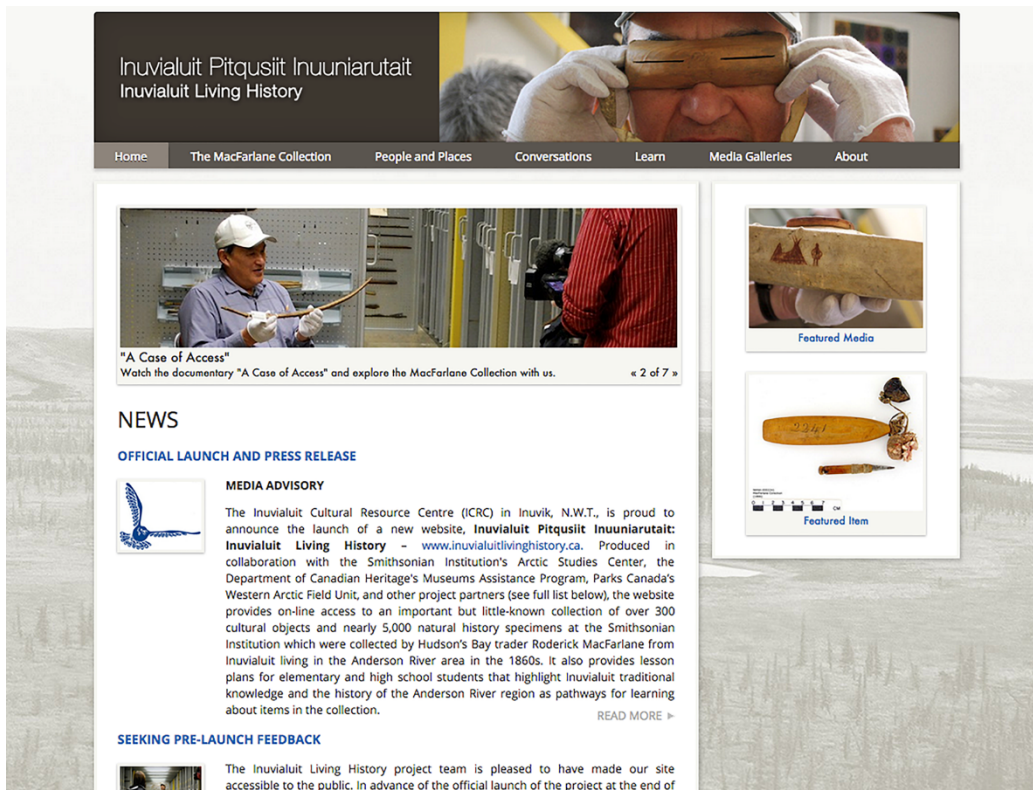
a) The Inuvialuit Living History front page.

INUVIALUIT PAPER DOLL
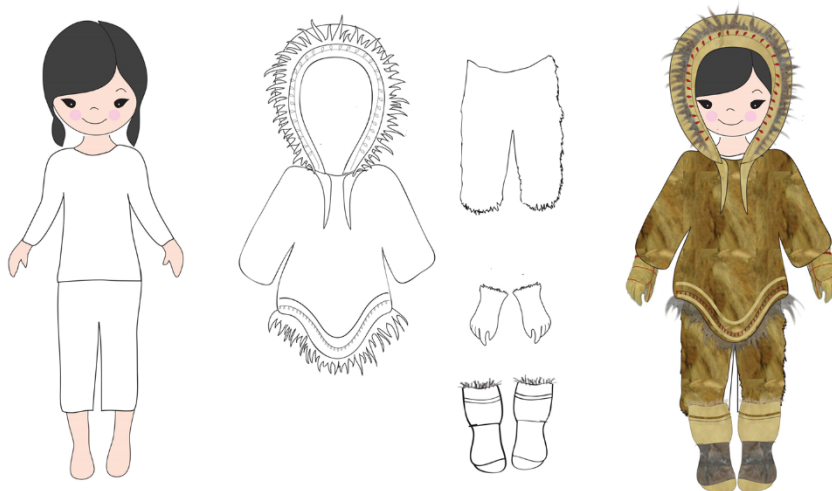
b) Inuvialuit Paper Doll wearing E-1701 parka

Figure 1.1.   Inuvialuit Paper Doll wearing E-1701 parka

With such objective in mind, ILH attempts to provide its users with these inherent and essential qualities that give an object, the person or environment, their meaning and significance by including the contextual information and processes associated with them. Additionally, in achieving this, ILH also serve as a virtual museum with shared curatorial and ethnographic authority, as it involves participation between researchers, members of the originating community and the designers (Hennessy et al., 2013). In turn, this highlights the potential for integrating indigenous curatorial practices into digital heritage interaction design, another step toward the decolonization and democratization of museum practice (Kreps, 2013).

The project consists of a virtual exhibit of artefacts in the Smithsonian's MacFarlane Collection. Roderick MacFarlane was a trapper who worked for Hudson Bay Trading Company in the late 1800s and established a relationship with the Inuvialuit over time as he was stationed in the MacKenzie River Delta in the Northwest Territory. The artefacts in this collection are objects that were used in the everyday lives of Inuvialuit, such as clothing articles, tools and decorative arts. These artefacts are currently a part of the Smithsonian National Museum of Natural History Museum collection.

Included in this project is a documentary film that follows the delegation of Inuvialuit community members and collaborating researchers who visited the Smithsonian National Museum of Natural History in 2009 to be reunited with these artefacts for the very first time. In this documentary film, members of the Inuvialuit community whose age ranges from young teens to the elderly had opportunities to handle the artefacts and recount experiences associated with them, as well as interpreted and reflected on their meanings.

One of the projects in the ILH which I had an opportunity to work on was to design a digital illustration of a number or traditional Inuvialuit garments as a part of the Inuvialuit Paper Doll project (see Figure 1.1). The project aims to provide hands-on activities for Inuvialuit grade school children to learn about their traditional clothing. The digital paper dolls come with three sets of Inuvialuit traditional clothing which are part of the Smithsonian's MacFarlane Collection. These illustrations of clothing items can be printed and cut out individually for Inuvialuit children to make their own style and

combination. The digital paper doll project made me aware of the close relationship between the natural and the spiritual world in contemporary Inuvialuit culture, and how the activity of making and sewing the traditional garments interface with those worlds (Issenman, 1997). It became apparent to me that the wider scope of sewing and garment making in Inuvialuit culture, such as harvesting materials, preparing animal skins, division of labour, and the context of use are means beyond practicality but also a part of the interconnected poetics that define what it means to be Inuvialuit.

Eventually my particular interest in Inuvialuit traditional sewing practices led to an invitation to do a month long research at the Smithsonian's National Museum of Natural History in the Summer of 2013 as a part of the Summer Institute in Museum Anthropology (SIMA).

1.1.3 Research Context (2): Institutions: The Smithsonian Institution's Summer Institute for Museum Anthropology (SIMA) and the School of Interactive Arts and Technology

My participation in the Smithsonian Institution's Summer Institute for Museum Anthropology (SIMA) in 2013 made me aware of the many opportunities and challenges associated with digital media in context of ICH. During SIMA I had plenty of opportunities to handle and interact directly with several Inuit traditional clothing items in the collection of the Smithsonian's National Museum of Natural History. These opportunities allowed me to compare my experience of handling and interacting with the artefact directly with the experience of interacting with digital representation of the same artefacts.

One of the artefacts I had opportunity to handle and analyze was the Inuvialuit parka E-1701 from the MacFarlane collection. The E-1701 parka carries several digital representations, including my own digital illustration of an Inuvialuit paper doll wearing this particular piece (Fig. 1.1). This sparked my curiosity and motivated me to analyze how these digital representations are experienced in comparison to the physical object within the scope of AT and ICH.

During my graduate study at the School of Interactive Arts and Technology at Simon Fraser University, I learned in more in depth about the fundamental aspects of interaction design, most importantly the role of ethnography and, phenomenology in designing for hermeneutically relevant digital representations and interactive system. I became particularly interested in how culturally specific meanings can be integrated into the user experience aspect of digital heritage initiatives with the specific goal of reinvigorating ICH.

As Fiona Cameron argues, the roles and uses of the digital object must be understood as part of the broader heritage complex – "an institutionalized culture of practices and ideas that is inherently political, socially and culturally circumscribed, and as such implicated in the cycle of heritage value and consumption" (Cameron, 2007, p. 50).

Similarly, AT as expanded by Engeström, stresses the role of community as an important consideration in the sociocultural aspect of human activity (Engeström, Miettinen, & Punamäki, 1999). AT provides a phenomenological framework for understanding how activity and its resulting experience shape our cognition and knowledge.

I am interested in understanding how these interconnected principles are applied within the interaction design approach for a digital heritage initiative project such as the ILH. In particular, how do common principles in AT and ICH translate the values and/or meaning of an object within the scope of revitalizing ICH?

1.1.4 Research Context (3): The Inuvialuit

A third context for my research is the cultural community from which the parka at the center of my study originated. I would like to emphasize that I did not conduct original research with Inuvialuit or visit the Inuvialuit Settlement Region, so my research here is based on literature review and my work on the Inuvialuit Living History Project.

The Inuvialuit are Inuit, biologically and culturally related to other Inuit living across the Northern part of America spanning from the Bering Strait to eastern

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Greenland. The Inuvialuit nurture a separate identity from other Inuit groups by following a different political path, in particular by negotiating for their own land claim with the Canadian government (Lyons, 2013). The Inuvialuit Final Agreement (IFA) which gives the Inuvialuit self government to manage their own land was signed in 1984, demarking the western Canadian Arctic that covers the coastline area east of the Alaskan border through the Beaufort Sea and beyond the Amundsen Gulf which includes some of the western Canadian Arctic Islands, as well as the inland community of Aklavik and part of the Yukon (Stern, 2010).

Inuvialuit collective identity is shaped by various factors, in particular the exposure of western ideology and the socioeconomic system brought by the whalers in the late 1800s. The epidemic and diseases brought by the western visitors that decimated the population almost to extinction in the early 1900s is also key in the shaping of Inuvialuit collective identity as well as the implications of the settlement agreement, which initiate the sense of self government and determination for the Inuvialuit (Lyons, 2013).

The area encompassing the Inuvialuit Settlement Region is relatively rich of natural resources although it is bounded by poorer lands. It is, as described by Morrison, a well-occupied oasis bordered by deserts (Alunik, Kolausok, & Morrison, 2003). There is abundance of sea life, such as whales, belugas and seals as well as fish. It has important terrestrial resources including caribou, porcupine and muskoxen, moose, polar and grizzly bears among many others. Caribou is an important resource as aside from serving as a source of meat and fat in the diet, caribou hide is also used to make traditional skin clothing (Alunik, Kolausok, & Morrison, 2003b).

The agreement gave the Inuvialuit ownership of 91,000 square kilometres (35,000 square miles) of land including 13,000 square kilometres (5,000 square miles) with subsurface rights to oil, gas and minerals. The Inuvialuit have the right to hunt and harvest anywhere in the claim area as the primary harvesters on the land that is known to be rich in wildlife. Activities such as hunting and fishing for subsistence create a shared experience that becomes a part of Inuvialuit social identity. They also secured

the responsibility for ensuring good wildlife management, by becoming part of a wildlife management team with the government.

The establishment of the Inuvialuit Settlement Region also gives the Inuvialuit self-government and administrative powers to manage and determine their own lifestyle and promote the social, cultural and educational welfare within this territory (Alunik, 2003). The agitation for and negotiation of the land claim served to rally the lower delta's original inhabitants around a sense of collectivity and to bind them together in new formations (Inuvialuit Final Agreement 1984; Lyons 2009).

Like all other Inuit, Inuvialuit culture is believed to be descendant of the Thule culture. Thule people migrated into the Canadian Arctic from the Bering Strait sometime during the eleventh century and reaching Greenland in one or two generations. The Inuvialuit in particular, were descendants of the Siglit Inuit, who were the initial inhabitants of the area before the 20th century and the Nunataarmiut, the Alaskan Inuit who moved in to area enticed by the prospect in whaling industry (Stern, 2010).

In the late 1800s, the Hudson Bay Company opened trading posts in various locations in the region. The prospect of earning a living through fur trading motivated the Inuvialuit, who were coastal people to travel upstream to trade and as a result encountered other Indigenous group who traveled outside their territory for the same reason. This caused interactions to occur between the Inuvialuit and other Indigenous groups in the region, such as the Alaskan Inupiat and the Gwich'in. The Gwich'in were initially the Inuvialuit's traditional enemy. Eventually this interaction sparked intermarrying between the Inuvialuit, the Inupiat and the Gwich'in (Alunik et al., 2003; Lyons, 2013). In the early 1900s due to diseases brought by the westerners, the Inuvialuit population was down to 250. Later, the Nunatarmiut's migration to the area and the intermarrying between the two groups helped the population to bounce back (Alunik et al., 2003). Inuvialuit identities are drawn from the collective stories, songs, traditions and memories of their long and varied past. As Lyons writes: "As a group, however, their oral histories are underrepresented in both the oral and textual literature of the north" (Cournoyea in Lyons 2010, p. 22).

As Alunik posit, the above factors have been influential in shaping the characteristic of Inuvialuit people. The Inuvialuit are Arctic people with lifestyle tightly connected to the land. They are hunters, trappers, and fishermen. They are hardy enough to cope with the extremes of climate and fortune, and skilled to make a living under difficult conditions. But also The Inuvialuit are a little richer, a little more settled, compared to many of their neighbours (Alunik et al., 2003).

Despite a complex and multi-stranded history, an Inuvialuit sense of self has rejuvenated rather than diminished in the past half century. Today Inuvialuit are actively reasserting their voice in the representations of their history and social identity. They produce TV shows, documentaries, audio recordings, and administer their own cultural and educational programs. The individual and collective memories of present-day Inuvialuit Elders consistently reinforce the idea of both the flexibility and continuity of an Inuvialuit identity amidst the profound changes that have transpired (Lyons, 2013) .

1.1.4.1 Traditional Clothing and Its Associated Practice

In the Inuvialuit community, sewing with skins and furs is a critical activity in the chain of subject-object relationship that supports the self-subsistence, traditional lifestyle. As in other Inuit cultures, making traditional clothing has been one of the Inuvialuit's means of responding to the harsh arctic environment (King, 2005, Alunik et al., 2003). Inuvialuit traditional skin clothing has reached a state of objectified experience suited specifically for this environment. The activities associated with traditional clothing have been developed over thousands of years and have gone through iterations of corrections and problem reframing. It is a concrete rendering of lived experience in surviving the Arctic's physical and sociocultural environment.
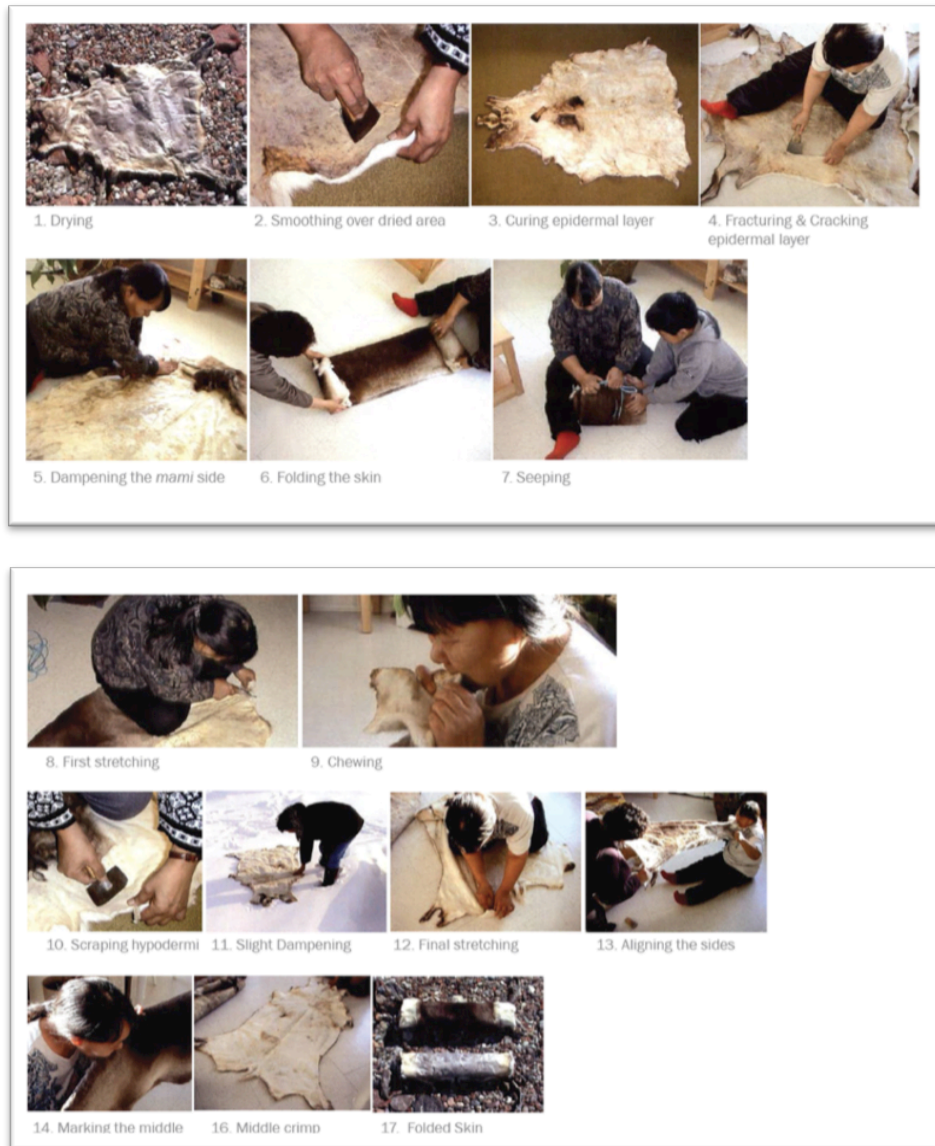
Figure. 1.2   Production Process -Tanning Caribou Hide

Breaking apart this matrix of experiences, making a traditional Inuvialuit clothing involves many intricate forms of activity that require traditional knowledge: 1) hunting; 2) skinning the animal; 3) preparation of animal skin for clothing material (which typically involves approximately 17 steps of cleaning, drying, smoking); 4) making sewing pattern; 5) cutting the animal skin; 6) sewing (King, Pauksztat, & Storrie, 2005).

The sophisticated technologies and skills used by both hunters and seamstresses to produce the garments have been passed from generation to generation

and are a living legacy to this community. The many steps of sub-activities involved in making a traditional piece of clothing indicate the complex nuances in the meaning of this activity. The structures of activity render a poetic expression of the culture that creates it because the clothing is the manifestation of the developing need. Each unit of these activities expresses meanings and develops the properties of the subject and the object (Issenman, 1997, Kaptelinin & Nardi, 2006, King, 2005, Wilder, 1976).

1.1.5 Disclaimer

As I am not an Inuvialuit, I am aware that my perspectives on the sociocultural aspects of the artefact and the network of practices and knowledge associated with it are limited to the knowledge gained through academic literature and my involvement with ILH. In this case, my readings rely on my own subjective, personal experience and perspectives as a media and interaction design student. Lastly, my perspective is influenced by my own sociocultural background, as a non-westerner who is transplanted onto a western culture and had spent almost an equal amount of time in both cultures. For future research, it would be ideal to have a comparative perspective and interpretations from Inuit and Inuvialuit scholars who possess deeper understanding on the sociocultural aspects of traditional Inuvialuit clothing and its associated practices.

1.1.6 Overview of Chapters

In this chapter I have written about my motivation in pursuing this study and explained overarching structure of this close reading including introducing the concept of Activity Theory and its common principles with the premise of Intangible Cultural Heritage as the key concept in revitalizing ICH. I discussed the ongoing shift in museum practice and how it may affect the process of designing museum experience in the digital age. I have also discussed the analytical lenses used in this close reading. They are: 1) new media narrative; 2) interactivity, and; 3) spreadability in relation to openness and malleability. Finally, I have also summarized the conclusion of my analysis at the end of Chapter 1.

In Chapter 2, I will discuss in more detail the premise of AT and its integration into the field of Human Computer Interaction as well as how AT supports the premise of ICH, proposing the centrality of human activity and lived experience in making meaning. In this chapter I will also discuss the notion of interface in relation to its role in translating meaning, particularly meanings embedded in an object.

In Chapter 3, I will discuss the analytical lenses in more detail, specifically the theoretical discourse framing narrative as a scalar measure of media text's ability to invoke stories, interactivity as a measuring stick of agency that brings meaning and openness and malleability of content for the purpose reinterpretation and sharing through social networking. As the primary focus of this close reading, the lens of narrativity will be drawn from frameworks introduced by Jim Bizzocchi and Marie-Laure Ryan (Bizzocchi, 2007; Ryan, 2006). Bizzocchi's framework analyzes media text in terms of its narrativity within the scope of character, storyworld, emotion, narrativized interface, micronarratives (Bizzocchi, 2007). Ryan's framework looks at narrativity from the dimension of spatial, temporal, mental, formal and pragmatic (Ryan, 2006). In this chapter I will also elaborate on how the above analytical lenses relates to the common principles in AT and ICH advocating activity as the source of meaning. I also will give an overview of close reading as a research method in this analysis.

In Chapter 4, I will perform the close reading between the Inuvialuit parka with its two separate digital representations.

In Chapter 5, I will conclude with findings from the above close reading and how they relate to common principles in AT and ICH. My findings reveal that the parka carries the strongest potential in invoking stories related to the associated processes between the people and the context it was shaped from. The digital representation of the parka in the Smithsonian's online database invoke stories as well although the prominent stories that were brought to surface are stories about the museum's curating activities and not about the processes related to Inuvialuit's traditional sewing and what these processes means to them. The digital representation of the parka in the ILH site is more successful in making visible the stories about these processes as it incorporates higher level of narrativity from Inuvialuit's point of view. However, many aspects,

including narrativity, interactivity and attributes relating to the social networking aspect could use some improvements. Aside from careful consideration on the hierarchy of visibility in terms of from whose point of view the stories are told, the parka E-1701's interface in the ILH site could also take into consideration the question of What can the user do with this interface aside beyond learning from simply reading about the process of making such object?. One possibility could be providing an opportunity for the user to virtually remake and remix the object using available resources, such as styles, material and decorations.

Chapter 2.   Activity Theory and Intangible Cultural Heritage

2.1 Activity Theory

 "The body is our general medium for having a world." (Merleau-Ponty, 1962, p.146)

Activity Theory put forward the centrality of human activity as the building blocks of knowledge and understanding. It proposes that our actions, as a bridging process between our external and internal environment, bring transformations to both the subject and the object of activity (Kaptelinin, 2013). Similarly, Intangible Cultural Heritage identifies the critical role that traditional practices play in the life cycle of cultural heritage. Both AT and ICH propose human activity as the essential element in conceiving meaning. This commonality between the two principles is a valuable contribution in designing interactions for a digital heritage project, as it provides a framework for observing how the associated meanings are translated into the digital form.

For example, when we interact with an object, such as typing a letter using a typewriter, transformation occurs not just to the object of our activity, which in this case a piece of paper we are typing on. Our experience of using the typewriter also transforms us. The experience of hearing the sound of the typewriter keys hitting the paper, the 'ding!' of the chime when we reach the end of the line, the feeling of our fingers touching the surface of the keys, just a few things out of many others that brings impact to our senses. We are going through a transformation, perhaps not so much physically, but this experience has impacted us internally however insignificant it was.

The root of Activity Theory (AT) can be traced back to the study of human consciousness by a group of Russian cognitive scientists in the 1920s – 1930s: Lev

Vygotsky, Aleksei Leontiev and Sergey Rubinsthein (Bedny & Meister, 2015) . Prior to the late 1970s, application of AT was limited to research in psychology and cognitive science (Kaptelinin & Nardi, 2006). In the early 1980s, the theory was then introduced to a wider range of audience shortly after Leontiev's Activity, Consciousness and Personality (1978) was translated to English. In the 1990s, international interests in AT dramatically increased after publications of papers and books exploring potentials offered by this perspective, most notably by Yrjo Engerstom and Susanne BØdker (Kaptelinin & Nardi, 2006).

Engeström expanded the scope of Leontiev's version of Activity Theory that looks at the human activity as the interaction between the subject and the object, often mediated by a tool (an artefact or technology). Engeström proposes that in addition to the subject and object discourse, community is also one of the important sociocultural considerations of technology use that needs to be studied. Our actions are determined by our culturally shaped needs and our environment includes the physical as well as sociocultural environment (Engeström et al., 1999).

This resonates with Margaret Mead's understanding of human culture, proposing that we are essentially an embodiment of a cultural template consisting of web of values, practices, norms and belief we were reared and grew up with (1953). The expanded theory of AT suggests that these cultural templates shape our needs, and by continuously acting and reflecting upon them we acquire knowledge and meaning about ourselves and our world (Engeström et al., 1999; Kaptelinin & Nardi, 2006)

AT was adopted as an approach in Human Computer Interaction following the result of the research study by Suzanne BØdker in the early 1990s. BØdker published findings on the study of user experience after re-evaluating her past projects while working at Xerox Parc. At the time HCI study was generally based on the now out-dated view of computers, a large mainframe computer systems used mainly for data management. During this era, even after the use of personal computers became common, HCI study was still informed primarily by the above out-dated understanding. Most were grounded in favour of quantitative analysis which placed too much of its considerations on information processing and task completion at the core of its user

experience design. Qualitative information about the user and context of use were rarely considered in the design process (BØdker, 1987). Using AT as a framework in user experience design, BØdker's study initiated the shift of focus in HCI from quantitative to qualitative measure (Kaptelinin & Nardi, 2006).

Doing activity is our way of constantly striving to understand this world by way of solving a problem and modifying it accordingly. The phenomenology of our experience during activities shapes our understanding of our world (Engeström et al., 1999; Kaptelinin & Nardi, 2006). This ongoing dynamic between overcoming the constraints and exploiting the opportunities within our environment is a recursive process between our cognition and our world with our activity as a mediator. In many cases, this continuous process of reconciliation is not free of tensions and conflicts, both psychologically and physically. Scholte compares cultural template as "a form of a web… on which "few do the actual spinning…while the majority are simply caught" (1984, p. 140). In this case, the ability to act, a sense of agency towards our environment in external and internal sense, becomes the central element in meaning making (Grove, 2012).

Although AT uses purposeful, goal driven actions as a starting point in understanding the relationship between experience and meaning, it also suggests that meaningful experience surface after the nature of activity progress from action to operation (Kaptelinin, 2013). The difference between action and operation lies in our level of action embodiment and relates to our conscious and subconscious processes in performing an activity. In action we rely on our logical thinking and conscious awareness in performing activity while in operation our activity is driven by our embodied knowledge (Dourish, 2004; Kaptelinin, 2013; Suri & Ideo, 2005).

In essence, AT situates its principle in Merleau-Ponty's and Husserl's theoretical stand on the phenomenology of perception. Phenomenology uses conscious subjective experience as a method of analysis for structuring knowledge. In phenomenology of perception, it is suggested that we first perceive our world using our body and then we draw understanding about it using our mind. This suggests that the notion of lived

embodiment is not only a means of practical action, but an essential part of the deep structure of all knowing (Husserl, 1901, Merleau-Ponty, 1962).

Similarly, the notion of ICH regards the ongoing practices of traditional knowledge, language and skills as the heart of cultural heritage (Brown, 2012; Kurin, 2007). Relating back to AT, with human activity as the producer of meaning, without the existence of practice, these meanings will also cease to exist. In order for culturally specific meanings to be transmitted to the next generation of practitioners, there needs to be cultural practice and continuous adaptations and reinterpretations to the current needs (Kreps, 2013). And in the context of the effort to revitalize ICH, documentation of ICH alone will not prevent intangible cultural practices from disappearing (Brown, 2012).

This intersecting principles between AT and ICH makes a strong foundation that may inform the process in designing interaction for a digital heritage project. It proposes a shift from designing an object interface simply for the purpose of displaying an object and labeling it with its historical background.

2.2 Intangible Cultural Heritage – The UNESCO Convention

The Convention for the Safeguarding of the Intangible Cultural Heritage was first put forward by UNESCO in 2003 as an international treaty with the goal of safeguarding the world's living cultural heritage from the homogenizing impact of globalization. The Convention calls for nations to create inventories of their intangible cultural heritage (ICH), which is defined as follows in Article 2.1 of the Convention:

> the practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artifacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize as part of their cultural heritage. This intangible cultural heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature and their history, and provides them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity. (Intangible Cultural Heritage - UNESCO CONVENTION, 2003)

The decision to draft this convention was motivated by the belief that the intangible cultural heritage is indeed endangered. Substantive data such as reported by the National Science Foundation (Malone, 2007) shows that the numbers of languages that are still actively spoken today are on a rapid decline compared to the last century (Kurin, 2007). From languages, a direct, interdependent relationship with culture can be drawn, as language is a reflection of our thoughts, the account in which we perceive our world and act upon it (Sapir, 1929; Whorf & Carroll, 1956) The declining number of languages is a telling sign that the diversity of the world's culture is imperilled. As thousands of linguistic communities in the world are diminishing, many traditional practices and traditional knowledge associated with these communities have been lost or are dwindling. With their disappearance, gone are the oral histories, the folklore, and craftsmanship through which humans have witnessed and perceived the world – the intangible knowledge that may render important insights in our future.

Given this predicament, the Convention defines ICH as more than mere products or documentation of living cultural forms. What needs to be safeguarded, according to this Convention, is more than just the recorded tape of a song, or a documentary film on a ceremonial dance, or a transcript of them. ICH is fundamentally alive in the people and their culturally specific activities along with their knowledge and the associated processes called on to perform these activities. The contextual material from which knowledge, skills and practices arise are also crucial elements in revitalizing intangible cultural heritage (Kreps, 2013, Svensson, 2008).

In this case, ICH refers to the nurturing of these activities as a part of daily existence and the transmission of these skills and knowledge to the next generation of culture- bearers. It is not a copy or a recorded version of the activity, or recreated version of it by anyone outside the community regardless of how well intended or how literally correct they are. ICH is the actual singing, dancing, cooking by the members of the very community who regard those songs as theirs, and which define their identity as a cultural group. The act of creativity that goes into these vernacular, traditional practices emerge from the fabric of modest routines of daily life, closely connected to the collective values, environment and system of belief (Kurin 2007, Cuellar, 2003). In contrast, in a mass globalized system, collective creativity as a larger part of daily existence and

nuance are often not recognized or undervalued, but performing acts with spectacular quality for the purpose of entertainment are often idolized disproportionally as a creative contribution (Cuellar, 2003).

Recognizing this imbalance, the Convention encourages nations to collaborate with local communities, groups and individual practitioners, and to devise plans in ensuring the survivability of these traditional practices. Items on this list must be sustainable, consistent with human rights accords, and the mutual respect of peoples. Safeguarding these traditions will involve research and documentation, education and transmission, legal protection and forms of public recognition and support.

2.2.1 Perspectives on Intangible Cultural Heritage

The current debate between scholars is centered on the notion that culture is more than a set of performances that can be easily documented and then replicated. As Brown asserts, culture rests on "deep-seated values and emotional dispositions so implicit that they may not be fully recognized even by culture bearers themselves" (Brown, 2012, p. 95). The question here becomes whether the new Convention will accomplish its goal in safeguarding these implicit values, something that the culture bearers themselves might not be able to define in a concrete form. There is also an ongoing fear towards the effort of inventorying, an action that automatically places these traditional practices on the public domain, heightening the possibility of traditional practices being commodified by profit seeking parties (Kirshenblatt-Gimblett, 1998).

Brown challenges the notion of heritage described in this convention as a "rationalized and bureaucratized" vision, the one that reduces the complexity of saving traditional culture simply by documenting it. Brown draws a parallel between this approach and the management practices usually employed in the world's parks and wilderness areas. The practice in which we try to recreate naturally occurring ecological communities by deliberate actions such as restocking of animals, removing aliens species, and other efforts that are perceived to be beneficial to this environment. His claim is that such efforts only produce artificial substitutes, a poor imitation of the real thing. And this, he maintains, is the same case with cultural heritage that is "inventoried,

declared as an official treasure, preserved by self-conscious instruction, and surveilled by government oversight committees" (Brown, 2012, p.95). He further argues that the effort would take away all the naturally occurred, creative spontaneity and the experience that gives meaning to these traditional practices in the first place. The dire need, according to Brown, lies in the policies relating to ethnic minorities' security in being able to lead their lives in their traditional homelands and their inclusion in the decision making process involving their education, natural resources, and local governance (Brown, 2012).

This criticism elicited a response from Richard Kurin, pointing out that while many of the current attempts to safeguard ICH are performance oriented and done to seek some forms of financial gain, there are honest intentions in garnering international recognition and legitimization for ones' own cultural heritage. Both Brown and Kurin agree there is no guarantee whether the effort will succeed. Much still needs to be done to better understand the nature of this issue, and there are many obstacles and challenges that still need to be addressed, including the issue of who is in charge of managing the effort's implementation. Concluding his response, Kurin argues that the Convention is a good starting point, which can provide possible means for culture bearers, practitioners, and workers in safeguarding cultural heritage. He acknowledges the urgent need for further research and study in this area to ensure that this effort comes to fruitful results.

2.2.2   Challenges and Obstacles

As Kurin states, the type of agencies that are mandated to implement the effort of safeguarding intangible cultural heritage is a crucial matter. The Convention does not offer specific instructions or recommendations on which agency or organization might best to do such work. The question remains then whether the work should be undertaken by government ministries, universities, museums, cultural centres or some type of hybrid organization.

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2.2.3　Government

Aside from many benefit governmental control might bring on the implementation of this treaty, it might also be problematic. It is true that government may have the authority to handle inventory and survey as well as legitimizing ICH. It may also have the ability to gather funding and resources as well as coordinating with other sectors under its wings. However, there is a question always the question of freedom and human right when dealing with governmental agency. There is no assurance that the government trusted to implement this effort will represent the interest of the ethnic minorities whose cultural heritage is endangered. Past records shows that instead, government efforts often directed towards supressing and silencing cultural practices. Things like song of protest, story of epic struggle and knowledge of traditional territorial occupation have been deemed as opposition to government. They are, therefore destined to be silenced. Placing government regulators within the community to work with cultural practitioners might be seen as an intrusive initiative. Additionally, ICH is an implicit and culturally specific issue, which requires individual working in this field to have substantial education and training. It is not a job where anyone can be qualified by doing a simple civic test. The notion of ICH is also a field of inquiry that withstands standardization, often defies the usual civil service bureaucracy. In this case, finding adequate numbers of such qualified personnel would be a challenge.

2.2.4　University

Generally, universities may provide adequate support in researching, inventorying, devising education programs and studying the nature of cultural transmission and sustainability. However, universities usually lack the ability to provide long term and sustained efforts in applied programs of social action. Their institutional goal is usually to pioneer new knowledge and not to administer ongoing programs. Some universities are successful in carrying out programs in the research and implementation of agriculture and healthcare. However, taking on the cultural mission as embodied in the Convention, is a whole different story, because there is little financial rewards involved and social motivation alone often is not enough to drive it forward.

2.2.5   Museum

Kurin suggested that perhaps, museums are the most suitable organization to tackle this effort. Museums are already dealing with the content that the Convention intends to mobilized. They have the capability and authority to give recognition and respect for cultural practitioners.   Additionally, one of the museums' missions is to provide learning opportunities for general public. These backgrounds seem to be well suited for the task at hand.

However, museums usually do not have the control over the resources needed. Unlike government, the museum's missions are usually aimed towards preservation of inanimate things, collection of objects no longer being used in the course of everyday life. Documentation of living traditions is usually not one of their main concerns.

As quoted by Kurin:

> While they have increasingly become quite skilled in relating to and partnering their constituent cultural communities, it is something fairly new in their orientation and practice. Mainly concern with survival and preservation of their collections – items of culture taken away and alienated from the community settings and social matrix within which they were created. They tend to have their culture dead and stuffed. They are not very experienced in ensuring that culture is safeguarded as a living, dynamic sustainable process in situ (2007, p. 14).

Since its conception, the UNESCO convention on ICH has become a turning point for many museums to re-evaluate their role and glance at other concept of museum outside of its conventional western roots.   Museum-like models have been around traditionally in other cultures for many years, and some facets of conventional museum practice conform to these indigenous models.   (Ames 1992). Many cultures developed their own unique structures for storing, displaying and methods for valued objects. For example:

In this new direction, the role of museums are reimagined as knowledge-making institutions by emphasizing its focus beyond preservation of tangible artefacts in their custody but also the connection between object and the associated practice of making

and using them. (Pratt, 2013). This also become the start of collaborations between museums, academic institution and the communities.

The adoption of new media technology application commonly starts with development of a virtual museum. And most virtual museums projects today are the fruit of collaborative efforts between, museums, academic institution and the communities the objects are originated from. Recent projects such as the Inuvialuit Living History Project (Hennessy et al., 2013) and the Mukurtu CMS (Christen, 2012.) are examples of such collaboration between museums, academia and the originating communities that put the emphasis on Indigenous curation and media production.

An important issue that requires deeper understanding in the development of a virtual museum is the interface. This issue relates to the question of how objects and their associated contextual elements and experiences are represented in new media form. The structure and the hierarchy of representations affects the translations and often brings visibility or invisibility to certain aspects. Marginalization or omission of contextual elements in design considerations of virtual museums might mean asymmetrical translation from content to interface. When this occurs, the transmission of cultural heritage along with its associated knowledge is suppressed. In this vein, the design decisions involving a new media interface (in this case, a virtual museum website) should be carefully considered. Echoing Manovich's (2000) recommendation, the design of the interface should be referential and inseparable from its content and context.

2.2.6   Community

Lastly, there is the role of cultural communities itself whose culture intangible heritage is endangered. Their input must be rendered the most critical so that the process of implementation is implemented from the bottom up in a form of grass root community participation. This intention is reflected in the Convention's text as follows:

Article 11(b) each State Party shall:

"identify and define the various elements of the intangible cultural heritage present in its territory, with the participation of communities, groups and relevant non-governmental organization" (UNESCO 2003, Article 11: Role of States Parties).

Article 15, states:

"Within the framework of its safeguarding activities of the intangible cultural heritage, each State Party shall endeavour to ensure the widest possible participation of communities, groups and where appropriate, individuals that create, maintain and transmit such heritage, and to involve them actively in its management" (UNESCO 2003, Artcile 15: Participation of Communities, Groups and Individuals).

The above statements indicate that undertaking the effort must start with the inclusion of members of communities whose heritage is being safeguarded as a full partner. This means any agencies, whether they are government, university or museums are not to assume they have consent and permission in defining and undertaking the effort. They must first seek the consent of the cultural community in question.

This leads us to consider that collaborations between cultural communities whose heritage is being safeguarded, government, university and museums are the best form of framework in undertaking this effort.

2.3 Activity Theory and Intangible Cultural Heritage

In ICH meaning is defined by the complex interdependent relationship between individual, community and environment that arises through ongoing practices, skills and performances (Kurin, 2007). AT is rooted in a similar notion, in which cultural development can be traced back to activity as the simplest unit of analysis between the subject, the environment and the artefact as a mediator or a tool. To illustrate, Vygotsky conducts an experiment where an experimental subject would be asked to solve a specific problem using an artefact. For example, a task of memorizing a series of words, the subject would be presented with an artefact, perhaps a picture-card, to use as a

means in solving this problem. Vygotsky uses this simple scenario, as the germ cell of cultural development and activity (see Fig 2.1.).
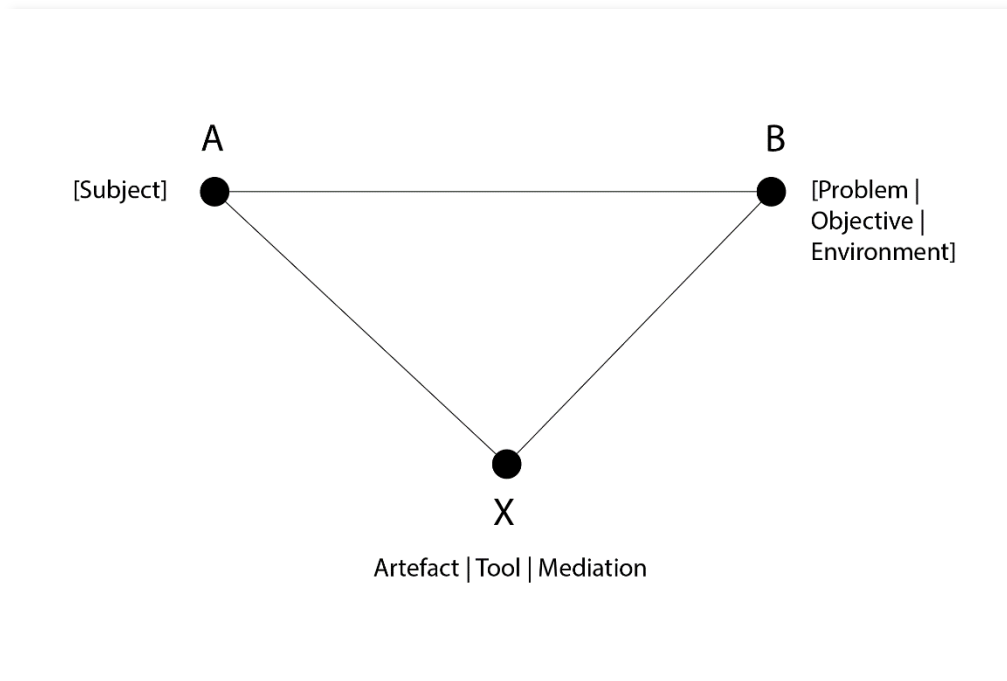
Figure 2.1.   Vygotsky's Dual Stimulation Experiment (Blunden, 2015)

(A) represents a person who confronts an object or a problem, (B), and (X) is a sign, an artefact introduced into the scenario, as a means of solving the problem. This simple germ cell is seen to capture the essential relation of people to their culture: a problem set by another person is solved by using an artefact (in this case, a sign) drawn from the cultural environment. In the process of appropriating the use of a given artefact, the subject's psychology is enhanced by the creation of a new reflex, associating B with X. "In this simple setup we have both the immediate situation of an environment represented in the artefact-solution. It is a unit of analysis which is a unity of the individual psyche and an entire cultural history" (Blunden, 2015, p.2).

Relating this formulation to the survival of ICH would suggest that transmission of ICH is dependent on the subject's agency, in the ability to modify her environment according to her needs where meaning is continuously re-interpreted and regenerated. It requires cultural adaptation and hybridization, and the maintenance of a space where cultural creation and re-creation exist as people actively accommodate and

resist hegemonic forces emanating from multiple sources. In support of this notion, a heritage complex must offer possibility for change and continuity and not merely the replication of either old or new cultural forms (Kreps, 2013).

2.3.1   In Making We Make Ourselves

As the final physical outcome of the reconciliation process between the human mind and his environment, an artefact symbolizes the associated experiences when it is activated – designed, made, used, traded away, and so forth. Every time this occurs, meanings associated with an artefact are reinterpreted and regenerated (Kaptelinin, 2013).

A concrete illustration of the above concept can be seen in the basket weaving process amongst the Yekuana tribe in Venezuela. Through the activity of weaving, a continuous engagement exists between the practitioner, the material surface, and the force that is created from the resistance of the material. This process is more than weaving as in producing a basket, but in a sense, it is also seen as "weaving" the internal realm of the practitioner's world with the external realm.

Ingold (2009) claims the following :

The surface of nature is thus an illusion: the blacksmith, carpenter or potter – just as much as the basket maker – works from within the world, not upon it. There are surfaces of course, but these divide states of matter, not matter from mind. And they emerge within the form-generating process, rather than pre-existing as a condition for it (p. 89).

The act of weaving baskets amongst Yekuana people are paralleled with the concept of weaving the inner world. As Guss notes, the master craftsman in this society is a person accredited with exceptional wisdom; he "not only weaves the world when making a basket, but in everything he does" (1990, p.170). This act of 'weaving the world' is not limited to the experts. Although in a less perfect manner, this act of "weaving the world" engages all the Yekuana people in all aspects of their lives, specifically in producing tools, clothing, equipment and other types of traditional livelihood (Ingold, 2009).

In this culture, locally produced items are considered as 'woven' and commercially manufactured items (such as tin cans and plastic buckets) are referred to as 'made' goods. Through the weaving activity the Yekuanas imbue the object with metaphorical significance or semiotic content. In this sense, it is implied that the woven artefacts are considered meaningful while the made objects are not considered so as to the Yekuana's they are removed from the process they were created (Guss, 1990).

In the above case the artefacts become "a mirror in which people can see reflected the fundamentals of their own culture. The symbolic capacity of artefacts, Guss insists, 'far outweighs their functional value' (1990, p. 70). Weaving the world, then turns out to be a matter of 'making culture', of submitting the disorder of nature to the guidelines of traditional design" (Ingold, 2009, p.89).

In the following chapters I will explore how are the above principles in meaning making are translated—or not translated—as the artefact and the activity associated with it are remediated from the body into to digital form.

2.3.2 Activity Theory and Intangible Cultural Heritage in Digital Heritage User Experience Design.

"The objective reality of social facts is not the fundamental principle of social studies, but social studies' fundamental phenomenon." (Suchman, 1987, p.58)

User Experience design (UX) is an aspect of study in Human Computer Interaction (HCI) which emerged in respond to the ubiquity and embedded quality of computer technology. Research studies in UX started to take off in the late 1980s responding to rise in use of the personal computer. The early 1990s marked the turn in analysing HCI from relying mostly on quantitative data to take into consideration qualitative data as well (Kaptelinin & Nardi, 2006).

Research findings by Bannon that proposes the shift "from human factors to human actors" (1991) which grounds its argument on the subjectivity of user experience made significant impacts in how we relate and use technology. Suchman with her study comparing the use of "plan" versus "situated human action" in designing UX is also

credited as another contribution that made significant shift in this field. The computer is no longer viewed only as a machine that fulfils our practical needs – processing information and completing tasks, but also as something that we relate to in a specific sociocultural context (Bødker, 1987; Suchman, 1987).
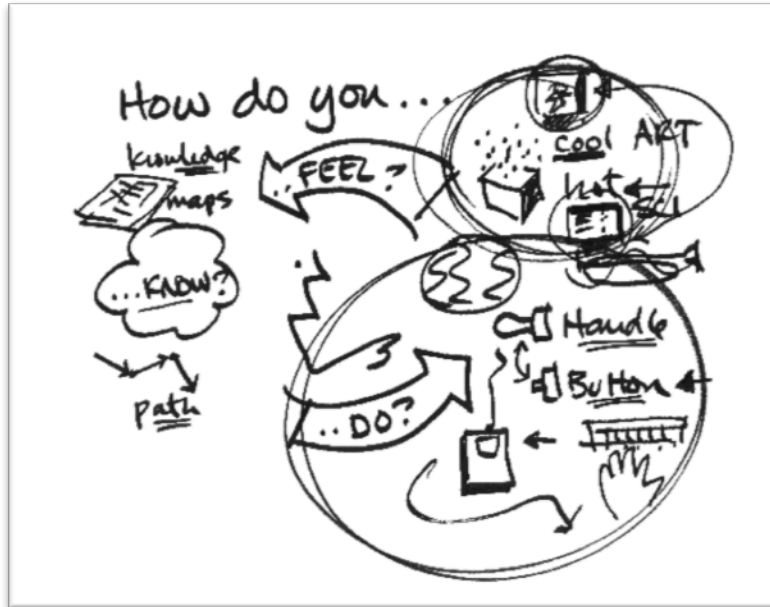
Figure 2.2.   Verplank's Interaction Design Sketch (Modgridge, 2012)

The main concern is then how does the interface in its design of structural hierarchy, representation and interactive systems render meaningful interactions between the computer and its user? In this case, the subjectivity of user experience and how plurality of meaning can be supported in system design is a critical consideration in HCI.

Bill Verplank, a scholar in the field of Interaction Design research, postulates that interaction designers need to answer three questions (Fig 2.2.) when solving a design problem. These questions are: 1) How does a user do a particular activity or affect the world? 2) How does a user feel when she does this activity? (What kind of feedback does she receive from the world or the object of her activity?) Verplank uses the analogy of McLuhan's "fuzzy or cool" media vs "hot" media. He suggests that cool media draws you in while hot media, because of its rigidity keep you at a distance (McLuhan, 1964; Verplank cited in Moggridge, 2007). 3) How does a user know? How do the

answer to the above two questions play a role in user's understanding of the world? (Verplank cited in Moggridge, 2007) Or relating back to AT, how do the processes between the subject and the object (the environment) creates subjective meaning about the world?

Verplank's approach resonates with what was proposed by Suchman who found many weaknesses in the earlier model of interaction design. This earlier model was based on the underlying principles that it is possible to construct a mutual intelligibility between man and machine by predicting the course of action from the knowledge about the user/actor's intent.

According to this model, meaningful interaction can be designed by encoding some sort of a reconstructed "plan" that contains a logical vocabulary of our purposeful action. Scholars such as Schmidt, Sridharan and Goodson, proposed that "action understanding is simply a process of plan recognition." (1978). In this model, interaction follows a scripted, predetermined linear path. For example, imagine a user has to go from point A to point F, the only way the interaction would work is if he goes from A to B, B to C, C to D, and D to F. However, if the user wishes to go from A to C first and then to B or to D, this model wouldn't work.

There are many weaknesses in this approach. Computers operate based on algorithm but humans do not. It is impossible to construct a mutual intelligibility between man and machine by predicting the course of action only from the knowledge about the actor's intent. It is also impossible to generate a vocabulary of consisting all the possible paths that a user may attempt to explore (Suchman, 2006). As Suchman claims, "Plans are resources for situated action, but do not in any strong sense determine its course" (Suchman, 1987, p.72).

Suchman's argument was grounded in known facts: 1) people act differently from one to the other and their courses of action are unpredictable. 2) intention is not the only aspect of activity (Suchman, 2006). When we perform an activity, there are nuances of experience during action that affects our course of action. Verplank refers to this aspect of activity in his second question "how do you feel?", The feedback we receive

from the environment that we act upon affect our feeling and experience (Verplank cited in Moggridge, 2007).

In the earlier HCI model, action is viewed as if it always follows a scripted plan that is stable; when in the actuality, precision and stability in human action is rare. Suchman concludes although our purposeful action always begins with a goal and intention in mind, the course of our action rarely follows the plan. In most cases, our actions must be adapted to the situation at hand. At critical moments, our course of action relies on the cue of our embodied knowledge as opposed to following a plan that exists in our head (Suchman, 2006, Dourish, 2004). Human action is "situated"; it is shaped by the resources of the immediate circumstances. People improvise and respond opportunistically and flexibly to those resources. Unlike Computer programs people do not follow algorithms (Suchman, 2006).

Suchman's insights on the situated-ness of human action can be traced back to how traditional practitioners perform their crafts. Guss' observations on the Yekuana basket weavers resonate with the above notion. His analysis suggests that the basket weaver does not follow a preconceived scripted plan nor there is a blueprint on the shape of the basket at its final form. Instead, the basket comes into shape as a result of active engagement between the weaver and the material. It is an objectification of the weaver's reflective experience during her continuous attempts to reconcile the tension given out by the material's form and surface (Guss, 1990 cited in Ingold, 2009).

The situated action theory gives insight into looking at action and its circumstances as the model of meaningful HCI. It points out the weaknesses in the prior approach which was to encode the machine with a "rational plan". Where this rational plan was created based on abstracting action from its circumstances and the experience of it. Instead Suchman situated action theory proposes that the findings from studying human action within a specific context should be implemented as resources which the user can appropriate according to her specific circumstances.

As opposed to treating the result of the study to develop a scripted plan for the machine to execute, the result would be used to provide users with resources from which he or she can chose their own course of action. The user is provided with the

resources --"vocabulary" or "ingredients" to construct her interpretation through interactivity. In a literal sense, this notion might be similar to providing someone with vocabulary to write a sentence expressing her thought about certain topic. In a less literal sense, it could also be compared to providing someone with the ingredients and recipe to make a certain dish but allowing her to improvise to create her own version. Or as Suchman writes, "Rather than attempting to abstract action away from its circumstances and represent it as a rational plan, the approach is to study how people use their circumstances to achieve intelligent action" (Suchman, 1987, p.50).

Going back to Verplank's third question, how do you know/understand, in this case, the designer may provide resources and affordances, which are based on the study of the user's action. However, the user will be the one who determine the course of action. Verplank refers to this as the dichotomy between providing a step-by-step directional path versus providing a map. A map is similar to a collective of affordances which users will have a variety to choices or paths to reach the goal or the destination. While a step by step directional path is similar to an instruction with only one possible path is made available (Verplank in Moggridge, 2007). Furthering the above discourse, Engeström extends Leontiev's AT which looks exclusively at activity between subject and her world mediated by tools and/or technology (Note that in AT object refers to the world or environment). He proposes activity as a matrix of relationship between the subject, the object and the community mediated by tools, rules and division of labor (Engeström et al., 1999).

This serves as a valuable framework that can be used to learn about what possible resources can be incorporated in the system design (for a digital heritage project). AT gives a framework on how to derive relevant and meaningful information about each of the nodes in the activity matrix.
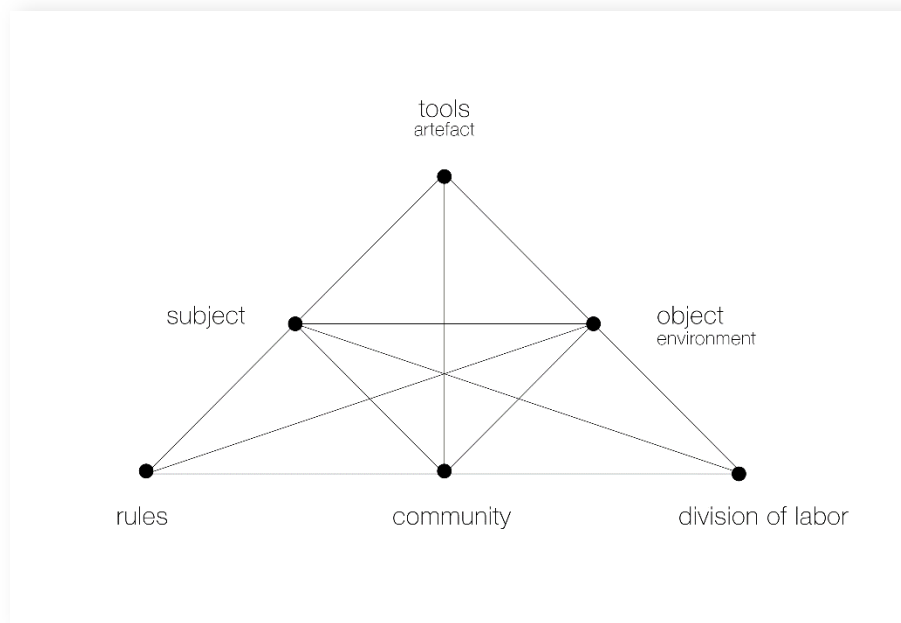
Figure 2.3. Activity Theory System Model. Adapted from Engeström 1990 (Engeström, 1990)

The use of technology or a tool cannot be separated from the context of its environment, either physical, psychological or most importantly, sociocultural. In this case, an artefact (in AT's case, a tool or technology), and its associated meanings can be derived from the matrix of activity in relation to the sociocultural environment it was originated from.

For example, Italian designer Giulio Iacchetti produces a juice squeezer in a form of St. Peter's Basillica (Fairs, 2008) as a form of political statement against the Catholic church's order in taxing its citizen 8% of every 1000 they make. The use of the artefact meant to say that the Vatican is squeezing its citizen dry. In this case, the use of this artefact only becomes meaningful to a very specific group of users. In such case, objects are activated and given meaning by the traditions, ideas, customs and social relations that help shape them. They become animated and meaningful by stories they tell, performances they are a part of, and the relationship among people and between people that create and use them as well as the places they are originated from (Kreps, 2013).

Specifically for the purpose of this thesis, the arterfact, the physical parka is seen as a form of technology, or as a tool (physical and psychological). In its originating community, it mediates between the subject (an Inuvialuit person) and the object (the harsh arctic environment). Because community is also seen as a mediator between the subject and the object, it influences the use of a tool or technology. While at the same time, the use of a tool or a technology also impacts the community.

How do these considerations affect the design of user experience for a digital representation of an object in relation to ICH? How do we design a system that provides affordances for the user to reinterpret and regenerate the meanings associated with the experiences reified within this object?

The Inuvialuit Living History project, which I explore in detail later in this thesis, was developed with such notions in mind, emphasizing the experiences of Inuvialuit community members with the Smithsonian's MacFarlane Collection during the interactions between the subjects and the objects of activity, with direct knowledge of the Arctic environment as contextual input.

This thesis perform a close reading of three different experiences of representations of the same object to gain understanding of how the two digital representations compare with the experience of the physical object. How do the three experiences provide the space for users to create their own interpretation of the object? At this point, this is where the analytical lenses of narrativized interface, interactivity, and spreadability in relation to openness and malleability are chosen. Narrative is known to be mental representations of our experience (Ryan, Ruppert, & Bernet, 2004), while interactivity represents the recursive dynamic of transformation between the subject and the object of activity. Lastly, spreadability in relation to openness and malleability is chosen to gauge the ability of a digital artefact in creating an evocative space that encourages the plurality of meaning and the sharing and distribution of these meanings through social networking (Jenkins & Ford, 2013).

2.3.3 The Object and Its Interfaces

> When you see an object, you make so many assumptions about that object in seconds. What it does, how well it's going to do it, how heavy it is…how much do you think it should cost. The object testifies to the people that conceived it, thought about it, developed it, manufactured it. Ranging from the issues of form, to material, its architecture, to how it connects to you… how you touch it, how you hold it. Every objects, intentional or not, speaks to who puts it there." (Ive cited in *Objectified,* Huswitz, 2009, opening quote)

In this digital age, the term "interface" is commonly known as the computer interface in which the algorithm of computer application is translated into a language meaningful to its user. However, the notion of interface precedes its technological context. The Oxford English Dictionary defines interface as "A surface lying between two portions of matter or space, and forming their common boundary." ("Interface," 1882). The notion of interface can be applied to other matter outside its technological context, as Hookway posits: "just as one encounters a mirror image before the mirror itself" (Hookway, 2014, p.1). An interface is also defined as a form of relation, either with machine or other forms of environment. It is a space where our "humanness is implicated" (Hookway, 2014, p. 1). Referring specifically to an interface between a computer application and its user, Bødker defines an interface as an object of design beyond its physical aspects and appearance but also how it relates to the user in psychological, anthropological and philosophical terms (1987). In a sense, an interface serves as an adaptor or a mediator between human and her environments -- technology being one of them. It is a cognitive space as much as a physical space and it is where our agency and action in relation to technology is situated and translated in a meaningful way (Hookway, 2014).

In AT, objects are seen as tools developed by people to relate with their environment. (Note that the term "object" in AT refers to the environment or the world, while the artefact is referred to as a "tool"). In ICH the practices associated with a heritage object are the elements that give meaning. The object's specific material and social qualities as well as the network of experiences associated with it are potentials in the continuation of meaning making. Referring back to Guss' observation on the Yekuana's basket weaving and to draw a parallel between "weaving a basket" with

"weaving the world", the object facilitates the processes of our inner workings and their externalization as actions. This explains how the Yekuanas associate "weaving the basket" with "weaving the world". Stories and emotion connected to an object come from the experience associated with an object, experiences which function both as a physical and psychological tool. An object is where all these experiences are objectified. These dynamics might help explain an object's ability to invoke stories in our mind.

Specific to the context of ICH, an interface for a digital heritage object might be conceptualized as a remediated form of the physical object and its network of experiences. Remediation is the "formal logic by which new media refashion prior media forms" (Bolter, Grusin, & Grusin, 2000). It is the process by which new media technologies improve upon or remedy prior technologies (1997). A digital interface representing a "real" object serves as remediated set of communication layers that could either extend or depreciate the translation of these qualities onto its digital configurations and affect the experience of the user. A digital interface with its own advantage, limitations and logic plays a key role in affecting how the real object is experienced and perceived by the user (Manovich, 2002).

The interface may extend the "real" in its various type of representations and interactive systems. For example, as a copy of the real object, the digital surrogate may provide democratized access, which initially might not be possible to a wider set of audience. It may also conceive a single object in various forms of representations. As digital media technology allows for easy construction and multiplication of different interfaces for the same content, a digital object could be represented, among many others, as a photographic image, a written record of its physical appearance, its audio-visual representation, an animation, a 3D object in an interactive navigable space. It may also perform a diverse set of roles, a few among others: as a reproduction, an interpretation and documentation (Cameron, & Kenderdine, 2010). However, each type of representation might also come with their own characteristics that affect how an object is experienced and perceived.

A digital interface of an object also comes with some drawbacks. For example, the database logic of digital media tends to flatten the original distinctions between

various objects (Manovich, 2002). In this process the meanings associated with an object in the database are abstracted to its associated database classification or fields, such as description, material, production process, etc. While in reality, an object becomes meaningful as it is activated by its user and to simply have a closed-ended database representing the experiences associated with an object would restrict these meaning to a series of limited categories. It may also obscure or remove certain aspects of the real object, in particular where the subjective interpretation an object is the quality that makes it meaningful.

While a digital copy of a heritage object may bring virtual access to audiences who may not have means to physically access the object, a digital reproduction of an object most likely lacks the ability to represent certain qualities associated with the physical object. In particular, the evocative qualities that connects us to the subjective meaning of the object. This resonates with Benjamin's notion of "aura". While the digital copies increase and democratize access to an object, the aura of the original object, the qualities that give meaning to it, are often lost in translation (Benjamin, 2008).

In addressing the limitations in representing these evocative qualities, a digital interface of an object could be conceptualized not only as a place where it simply provides the user with information and representations of the object. Rather it could be conceptualized as a social and material configurations through which forms of agency become possible (Suchman, 2006). Aside from attending to the translation of the object's associated experiences, remediation of a digital heritage object might also want to consider its role as an incubator of experiences.

In this setting, the interface is configured to allow the user to create her own interpretation of the object through her agency, her interaction with the system. Implementing agency as one of the main considerations in designing a digital heritage object within a database collection requires openness and malleability where subjective interpretations and plurality of meanings may emerge.

In a digital heritage project that responds to the needs specified within the ICH discourse, Engeström's activity matrix diagram (Fig 2.3.) provides a framework as a point of departure for exploring the associated processes between the subject, the object

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and the community it originated from. Parsing this framework on a specific object, the framework gives a structure to uncover the stories about the critical relationship between the people who make and use the object within its own specific context (the community). How do these relationships render and affect the meaning and values as the object is activated? The next step is to consider how the information derived from investigating the above activity matrix is remediated or translated onto their respective digital representations and interactive systems.

Relating back to the Engeström AT diagram (Fig. 2.3.), the database in question could be populated by information or experiences tied to the subject, the object (environment) and the community associated with the artefact. Aside from providing visual representation of human experience, an interface of a digital heritage object will also need to allow these meanings to be perpetuated, regenerated and reinterpreted (Russo & Watkins, 2007). Further, to allow reinterpretation of meanings also depends on the interface's design in terms of its malleability and openness towards user's participation. To include user participation as part of experiencing a digital heritage object requires integration of an interactive system.

Finally, in order for the associated meaning of a heritage object to continue to be reinterpreted it needs to be shared and distributed within the community. The above explains the reasoning behind my decision in choosing the analytical lenses of: 1) new media narrative; 2) interactivity; 3) spreadability of meanings in evaluating a digital heritage object experience in relation to the goal of revitalizing ICH, with openness and malleability being key considerations for the support of dynamic intangible cultural practices.

Typically, a virtual museum experience is limited to consuming information about objects in the museum collection, particularly their description, historical background, context of use and perhaps in more recent case, culturally specific meanings. However, with advances of technology, it is possible to conceive an interface where user participation is no longer limited to passively consuming information about an object. Digital media has ability to translate many layers of our experiences.

Quoting Terry Winograd:

There are several different ways that we interact with the world in general. Take three primary ones: one is manipulation, there are things, you move them around, you use your hands, you look at them, you do things to it. The second is locomotion. You go places… that's how you get around the world. And the third is conversations. You say something and the other person says it back…so it involves two parties. If you look at computers all those three metaphors are present (Winograd, 2007, ch. 7).

For example, a digital interface for a heritage object may offer a platform with resources to experience what is it like to manipulate objects – to make and use this object within the culture it was conceived from. By way of interactivity, it is now possible to emulate, and not just consume information about the activity of making and using this object. In this case, the interface offers experiences beyond simply consuming information, such as watching a video documentary about the process and the experience of using the object. The interface may also provides affordances and resources for the user to actively conceive interpretations by virtually "manipulating" the digital object, doing things with this digital object, which in the case of this particular parka, could include making and wearing this garment. Parallel with Winograd's notion of "locomotion", the interface could transport the user to the place where the garment originated from. The interface could also provide means for users to have conversations with other members in the community to share their subjective interpretations. Relating back to the activity matrix diagram proposed by Engeström, such user experience reconstructs and regenerates meanings attached to a particular object through forming her own subjective interpretation by way interactivity and provides opportunities in sharing her interpretation with the community.

In this setting, the digital object becomes more than a digital copy of the real but it has an ability to facilitate a network of cultural, civic, social, and political space associated with it. The digital surrogate extends the real as it gains an ability to connect with communities, which may facilitate repatriation, conservation and remote study as one of its many roles (Brown, 2010).

The move towards active participation in the recreating experiences attached to an object has recently been adopted by some museums in designing their visitor experience. For example, the Cleveland Museum of Art extends the database and

searchable nature of digital media technology to enable its visitor to search its collection by facial expression (Fig. 2.4.).

Figure 2.4.   Cleveland Museum of Art Interactive Installation

Chapter 3.   Analytical Lenses and Methodology

3.1 Background

In this close reading, the object and its digital surrogates will be analyzed in terms of its level of 1) narrativity; 2) interactivity; and 3) social networking aspects which highly depends on the level of openness and malleability of its content for subjective interpretations. I will also parse the hermeneutic aspect of this close reading to three potential groups of user or audience: 1.) Inuvialuit, 2.) Scholars 3.) General Public. These analytical lenses are selected based on the understanding that aside from documenting and showcasing heritage objects, designing a digital heritage platform within the scope of revitalizing ICH will also need to consider in its system design how meaning attached to such objects can be reinterpreted and redistributed.

The analytical lenses of narrativity and narrativization of interface is chosen to analyze how experiences related a specific object are represented (or not represented) as a part of the user interface of a digital heritage object. An object can be seen as a concretized, objectified form of our experiences, which relate to how meanings are conceived. Narrativity and narrativization of an interface are a set of design approaches that can connect the user to these experiences by way of invoking stories in her mind. These lenses are grounded on findings published by Marie-Laure Ryan (2006) and Bizzocchi et al., (2011). Ryan provides a framework in analysing text for its level of "narrativity" or "storiness" as a scalar measure (not as a rigid binary measurement that decides between "a narrative" or "not a narrative"). Ryan's framework is developed based on the text's capability in evoking story through four dimensions of narrative: spatial, temporal, mental and formal or pragmatic. Bizzocchi has a similar analytical framework for the understanding of narrativity within interactive environments. His framework has five components: character, storyworld, emotion, narrativized interface and micronarrative. This framework is not the same as Ryan's but there are significant overlaps. These analytical frameworks are especially relevant in this context because

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the level of narrativity or storiness, as well as how it is represented on user interface, determines whose story(ies) are articulated.

The ability to conceive subjective interpretation is important in context of ICH and Inuvialuit intangible cultural heritage. Most of the Inuvialuit's histories are not written through the eyes of the Inuvialuit themselves rather through the account of the outsider (Morrison, 2006). By allowing the user to make her own inference of stories embedded in an object, the power relation that might exists between the voice of the observer and the voice of the observed is broken down. In this case, the authority of meaning attached to an object is returned to the originating community.

The lenses of interactivity and social networking are chosen to analyse how meanings are reinterpreted and shared. This aspect depends on the level of openness and malleability of content. Zimmerman's work (2004) provides an analytical framework for interactivity. His framework breaks down interactivity in four dimensions, which might overlap between one and the other: cognitive dimension, functional dimension, explicit dimension, and meta or cultural dimension.

Jenkins and Ford's findings (2013) provide a framework for analysing characteristics of openness and malleability in a media text, which relates to the "stickiness" (Gladwell, 2002) and "spreadability" of content as well as its tendency for reinterpretation and redistribution across cultural landscape. These set of analytical lenses are grounded in the notion that meaning is regenerated when content is actualized or practiced (read in the case of a novel; played in the case of a game, interacted in the case of a web interface) (Carr, 2009). For this to be possible, content must possess a "producerly" quality (Jenkins & Ford, 2013). Also referred to as "cool" (McLuhan cited in Norden, 1969) in which a text leaves "gaps" for visitors' interpretation and opens up opportunities for visitors' participation as the co-author of the text.   Each type of media produces different characteristics of representations and determines whether the content of it allows for producerly quality (text), or is rigid and closed to interpretation. McLuhan refers to a "hot" media for something that is rigid-- hot to touch, and "cool" media, which is more open and inviting to touch. For example, written text is considered "hot" or more rigid compared to a radio broadcast which is considered "cool"

because it invites interpretation from viewers to comprehend the content (McLuhan, 1964). The relevance of reinterpretation and adaptation in context of ICH is articulated by Brown and Kreps, suggesting that simply documenting heritage objects and activities would not stop the homogenizing process because it doesn't prevent cultural diversity from diminishing (Brown, 2012; Kreps, 2013). Scholars from Indigenous communities express similar views on the importance of Indigenous agency and adaptation, proposing that this would be possible only by giving endangered communities their own authority and voice (Alunik et al., 2003; Morrison, 2006). .

Implementation of interactivity allows users to shape the way they consume content in their own ways. In terms of narrative theory this could be a form of restructuring the cause and effect sequences, or interpreting the content through the phenomenology of the senses. This is similar to writing their own sentences using the experiences as resources and vocabulary that are provided to them. This is like exploring using a map as opposed to using a directional path (Verplank cited in Moggridge, 2007).

In understanding how a digital interface mediates between the user and the content, the concept of a transparent interface is used to define the level of immediacy while a user is interacting with the system. When the interface is transparent, the user forgets the presence of the interface. It seems as if she is interacting directly with the object. On the other hand the user becomes fully aware of the presence of the interface when the system is not familiar to her. In this case, the interface is not transparent (Bødker, 1987).

Similarly, this variability in the mediated experience is referred to as the state of immediacy and hypermediacy. And subsequently the state of remediation, the oscillation between the two states, where the user continuously reinterprets the content through the process of perceiving and understanding (Bolter et al., 2000).

The same is also observed by Dourish, in which he refers to Heidegger's terminology in describing these two different states of experience in handling an object: "ready to hand" and "present at hand". An object as an instrument becomes "ready to hand" when we are no longer aware of its presence as an extension of our body, while

"present at hand" describes the opposite end of the above experience. Dourish suggests a similar notion, the oscillation between the two states of mind in which the use of the instrument fades into the background and yet still accessible to us while we perform our activity is essential to our mode of being (2004).

In video game design, a sense of immersion is created by incorporating narrative elements onto its interface design. A narativised interface is often used to transport the user to a specific place and to bring culturally specific meaning. It is also implemented to create a smooth oscillation between the hypermediated, ludic experience of gameplay and the immersive experience of a story (Cassell, 2000, Bizzocchi, 2011, Bolter & Grusin, 2001). Lin suggests that some of the most common narrativization of interface is implemented by conceptualizing interface as a metaphor, interface as spatialization and interface as a point-of-view (2007). The infusion of elements of narrative such as storyworld, character, emotion and micronarrative onto a video game interface increased its functionality not just by closely mimicking the world it represents, but also by engaging its user with the story in praxis through enactment of micronarratives (Bizzocchi et al., 2011).

3.2   Narrativity

In recent years, the term "narrative" has become diluted in which its meaning is often expanded to include anything from "belief", "value", "experience" "interpretation" or even simply "content" (Ryan, 2006). To avoid ambiguity of meaning, in this close reading I will be using the frameworks introduced by Marie-Laure Ryan and Jim Bizzocchi in analysing the elements of narrative in an Inuvialuit parka and its two versions of digital representation.

As a point of departure, Ryan uses the definition of narrative as proposed by Abbott which represents a common view among narratologists: "story is an event or sequence of events (the action), and narrative discourse is those events as represented" (2002, p. 16). In this sense, as Ryan concludes, "Narrative is a textual actualization of story, while story is narrative in a virtual sense" (2006, p.7). According to this definition, story is a mental representation of events, however unlike narrative, it is not a

representation encoded in material signs. Narrative may consists of a combination between 1.) story (mental representation of events) and 2.) discourses (concrete representation of events). In this regards, narrative as a form of discourse differs from other text types in that it has an ability to evoke stories to the mind (Ryan, 2006).

Ryan proposes to treat all narrative types as having a "fuzzy", scalable logic in which it can range from "prototypical" to "marginal" types. She uses the term "narrativity" in which she refers to the text's ability in invoking stories or scripts. A prototypical narrative type is high in narrativity. It tends to evoke a specific script in mind while a marginal type is low in narrativity and tends to evoke possibilities about what could the story be. In this regard, a prototypical narrative tends to promote singularity of meaning while a marginal type tends to encourage plurality of meanings.

Ryan introduces a set of conditions in analyzing narrative as a scalable model in media text, organized into three semantic dimensions and one formal and pragmatic dimensions. These criteria performs as "an open series of concentric circles that spell increasingly narrow conditions and that presuppose previously stated items, as we move from the outer circle to the inner circles and from marginal cases to the prototypes" (2006, p. 7) (Table 1.).

Spatial Dimension	
	Narrative must be about a world populated by individuated existents
Temporal Dimension	
	This world must be situated in time and undergo significant transformations.
	The transformations must be caused by nonhabitual physical events

Mental Dimension	
	Some of the participants in the events must be intelligent agents who have a mental life and react emotionally to the states of the world
	Some of the events must be purposeful actions by these agents, motivated by identifiable goals and plans.
Formal and pragmatic dimension	
	The sequence of events must form a unified causal chain and lead to closure
	The occurrence of at least some of the events must be asserted as fact for the story world
	The story must communicate something meaningful to the recipient

Table 1. Marie-Laure Ryan's Dimension in Narrative

As indicated in the above table, in the higher levels of narrativity, in which a particular text satisfies all the above dimensions of narrative, the cause and effect are clearly defined, the message is direct and the meaning is concise, often in the manner that is less malleable for others to have their own interpretation. It is as if the audience is presented literally with a script that conveys a concisely written statement. The rigidity and non-porous form reveals every aspect of the story.

In this mode, the notion of "reality" is treated as an external phenomenon. Its location is considered outside of the self as an objective account of an experience and as a result, promotes singularity of meaning (Russo & Watkins, 2007).

On the other hand, with a lower level of narrativity, where the cause and effect are not clearly defined, it is as if audience are presented with some "vocabulary" or resources to form their own their sentences. They have freedom in constructing the sentence. It is up to the audience to put together this particular "sentence" to shape their own interpretation.   The more marginal or low in narrativity the more malleable the surface and more freedom is given to interpret the "gaps" between each segments.

Specifically for the pragmatic dimension, Ryan proposes that "meaning" in this case is contextual "If we accept 8 (pragmatic dimension) as part of definition, then narrativity is not an intrinsic property of the text, but rather a dimension relative to the context and to the interests of the participants" (2006, p.9). In this case, this is a subjective interpretation of the text and is likely different from an Inuvialuit, the scholar, the public, or museum.

Bizzocchi's analytical framework (Table 2.) has some overlaps with Ryan's dimensions. The overlaps are concerned with the dimension of character, storyworld and emotion. These three are most relevant among other criteria in Bizzocchi's framework in the context of this close reading. In Ryan's, these three elements of narrativity are incorporated across her four dimensions. In Bizzocchi's, the character dimension is brought in to specifically observe how a user's identification with the character affects the story. In context of AT and ICH in relation to a digital heritage object, the connection with the character(s) of the story is one of the most critical aspects that needs articulation because it determines the meaning of the object. Bizzocchi's storyworld dimension provides a benchmark in gauging the coherency or completeness of the contextual background of the object's origin. This is also important as how the object is perceived is influenced by this contextual information, such as the place, the community and the circumstances. This also connects back to Ryan's pragmatic dimension, suggesting that meaning is dependent on the context of the story. Bizzocchi's "micronarratives" dimension also parses directly onto Ryan's formal/pragmatic framework. Each of the smaller micronarrative arcs has its own sequence of events that often lead to a form of limited closure. In such case, readers interpret the "cause and effect" connections between these micronarratives in a subjective manner. Another relevant dimension in Bizzocchi's framework is the

narrativization of interface, which gives an analytical lens to observe how narrative elements such as character and storyworld are infused within the aesthetic or the functionality of the interface and functional interactivity (Bizzocchi, 2007).

Character	
	Key to audience's identification with the story
Storyworld	
	Provides contextual information as a backdrop in which the story may unfold.
Emotion	
	Fiction emotion: our identification with the emotion expressed by character in the story
	Gameplay emotion: emotion generated by gameplay
	Artefact emotion/ aesthetic of astonishment:
Narrativized Interface	
	Incorporating narrative elements as a part of UI's functionality (the look and feel, narrative perspective, behaviour metaphor, bridging mixed reality.
Micronarrative	

		Smaller instances of narrative arcs within a larger narrative arc.

Table 2. **Jim Bizzocchi's Dimensions of Narrative**

3.3 Interactivity

"Culture is a human product and replicates through human agency" (Jenkins 2013, p.19)

According to Zimmerman (2004), the range of interactive experiences can be broken down into four different dimensions which may overlap between one another. These dimensions relate to the user level of agency in affecting the text. In the cognitive level of interactivity user participation is limited to cognitively interpreting the text. In the functional level of interactivity user interaction extends the functionality of the text, such as the standard affordances in html (bookmarks, lexias, navigation menus). In the explicit interactivity externalization of user interpretation is rendered as actions, which affect the design choice of the text. Lastly is the cultural interactivity, which involves collective participation in the shaping of the text as a cultural phenomenon (Ryan et al., 2004; Zimmerman, 2004).

From the perspective of AT and ICH in looking at action as the processes between the subject and the object that facilitate physical and (mental) transformations between the two, these dimensions of interactivity relate to the level of transformations that occur between the subject and the object and the community.

In the lowest form of interactivity, such as observing and reading, its impact is isolated internally in the mental processes of the subject as a singular interpretation of the text. In the highest form, the impact is no longer contained within the inner processes of one singular human being. At this state, the subject's ideas and thoughts are externalized and distributed to a bigger set of audiences. This resonates with Bakhtin's idea on the notion of centrifugal and centripetal force: "the concrete utterance of the subject serves as a point where centrifugal as well as centripetal forces are

brought to bear" (Bakhtin, 1981, p. 272). The subject's ideas and thought are shared with a larger collective for further re-interpretation and participation creating pluralisation of meaning in a form of "proliferating narrativity" (Ryan et al., 2004).

Cognitive
In cognitive interactivity or interpretive participation with a text, the user participates in interpreting the content of a text. Some example of this form of interaction is reading a book and watching a movie. This mode is considered the initial level of interaction because user's interpretation is not externalized. It is still confined within her mental or inner realm.
Functional
Functional interactivity refers how functional aspects of a text such as the table of content of a book, the page numbers, the graphics, the thickness of paper affect the user experience of such text. In this mode, user's interaction with the text is externalized, however its purposed is limited to practicality.
Explicit
Explicit interactivity, or participation with designed choice and procedures in a text. An example of this mode would be how user participate in following the non-linear link, or rearranging objects on the screen, simulations etc. In this level, the interaction is concretized beyond fulfilling practical aspect in reading a text. The user is also able to affect the design and procedures of the text.
Meta | Cultural
Meta interactivity or cultural participation with a text. In this mode user participate in the interaction outside a single text. For example, a fan culture

where people dress up to be their favourite character. In this case, users appropriate, deconstruct, reconstruct, propagade in the communal narrative worlds.

Table 3. Eric Zimmerman's Interactivity Dimensions

3.4 Spreadable Media (Openness and Malleability | Producerly Text)

The open and malleable nature of digital media allows freedom in designing a producerly text, where people can affect the content through interactivity and place their subjectivity within the text. Subjective reinterpretation is especially important in the Inuvialuit culture because most of the surviving heritage text were written from the account of westerners as outsiders (whalers, explorers, missionaries who visited the area in the late 1800s) (Morrison, 2006). Reinterpretation of heritage text will open possibility to relocate the authority of the text, which was written from the "outside in" to the "inside out". Additionally, the continuous reinterpretation and adaptation of meaning is a necessary factor in ensuring cultural survival (Kreps, 2013).

According to Jenkins and Ford, aside from having open ended content for audience participation, a producerly text often possesses certain qualities where this participation is likely to take place (2013).   Although their analysis looks at ingredients and qualities of producerly texts specifically in context of advertising, his analysis may bring useful considerations in designing user experience for a digital heritage project. The ingredients of producerly text are described below.

Another important issue to consider specifically in context of Indigenous cultural heritage in integrating openness into the design of the system is the question of who manages and determines this particular aspect. Many heritage objects are considered sacred within the culture they originated from, and some require specific protocols for care and handling. Some are not available for public viewing. Despite the general public sentiment that believes "information should be free" many Indigenous communities are sceptical about having their culturally specific knowledge and

information available publicly online (Christen, 2012a). This concern is not without foundations as we have seen many examples of misappropriation of heritage objects along with the intellectual property attached to such objects simply for the benefit of corporate profit. For this reason, a participatory design process involving members from the Indigenous community in question is critical. An example of such collaboration is the Mukurtu project (www.mukurtu.org), developed by Kim Christen. Mukurtu is an adaptable digital rights management system, which gives the control to the Indigenous communities to administer and determine their own specific term of openness (Christen, 2012a).

3.4.1 Shared Values

One of the main ingredients that plays a critical role in the spreadability of media is based on the concept of similarity of values which is formed around shared experience between individuals within a social network. Redistribution or sharing of meanings is likely to occur as a means of reasserting of traditional values and nostalgia, the strengthening of social relationships, accepting mutual obligations, or the comfort of operating within familiar patterns. When these values are shared within the network they are often get reinvented to reflect alternative values or meanings.

3.4.2 Humour and parody

Most of spreadable content incorporates elements of humour and parody. It is understandable that humour is one of the main element as sharing funny anecdotes or jokes that everyone gets is an easy way to build rapport and break the ice in formal situations. On the other hand, making a joke that people don't understand could drastically turn any moments to an awkward situation and alienate those left out of a punch-line. A very thin line separates a joke from an insult -- a joke expresses something the community is ready to hear, while an insult expresses something it doesn't want to talk about (Douglas, 2010) . In this case, humor could be viewed as having the ability to define "insiders" and "outsiders" within a community (Jenkins, 2009). Parody has an inherent nature for spread as it is predominantly a participatory form. For something to be accepted as a parody, it requires specific cultural knowledge on the

viewer. This is why parody is very valuable for spread as it has the ability to express shared framework of reference within a community, most importantly when it plays on a nostalgic references and shared history. However, just like humour, parody has a potential to alienate as well, in which case, its implementation must be carefully considered (Jenkins, 2009).

3.4.3   Information Seeking

Another characteristic of a producerly text is that it has some level of ambiguity in which it generates' curiosity and as a result invites people to seek out more information about the content. The ambiguity of content tends to encourage the audience to look twice, to investigate deeper, to verify authenticity or perhaps figure out how it was done. This often leads to the audience sharing this content on their network to help fill in the "gap" or solve the problem. This act is known as "collective intelligence" or "crowd sourcing" (Jenkins, 2009)

3.4.4   Unfinished Content

The ambiguity of content as described above is often in terms of its meaning. If we relate this to narrative representation, this relates to the formal or pragmatic dimension of a narrative, where the cause and effect connection is probably removed. In this setting, audience is encouraged participate in giving the content its meaning using their own interpretations.

3.4.5   Nostalgia and Community

Lastly, producerly text tends to have nostalgic quality to certain community where members can shares memories and values as they participate in content creation. Audience are given the opportunity to use these shared values and memories to reflect on their own meaning creation. As Jenkins suggests, content move from one sphere to other often get reworked to reflect the values and fantasies associated with current context (Jenkins, 2009).

3.5 Methodology: Close Reading

Close reading is a humanist approach in analyzing a media text that has evolved over years since it was first formulated in the early 1930s and 1940s. The methodology consists of a deconstruction, a detailed examination and interpretation of a media text. While it was initially applied to the study of literature, it has since been adopted to perform critical analysis on other media forms such as cinema studies and video game studies.

The process of close reading in analyzing a media artifact can be described as a paradoxical experience. It refers to the tension that arises from oscillating between objective and subjective experiences by performing critical analysis on a well loved media text to the point that it is no longer possible to see it with a naïve stance (Bizzocchi & Tanenbaum, 2011).

Additionally, the scholar also takes a dual position in his or her experience of reading the artefact which involves two different level of cognitive attention. On one level, the scholar enacts as a naïve visitor of the website in which she must be open to absorb all nuances of the experience without preconceptions. On the other level the scholar must distance herself from the experience and objectively look at how the text is designed from the perspective of specific analytical lenses.

This oscillation between the two states of reading also suggests the process as a destructive act as well as a creative one. It involves dissecting a text to perceive the meaning of each individual elements, reconstructing and interpreting them as a composition (Bizzocchi & Tanenbaum, 2011).

At the same time, the scholar must also distance himself/herself from her experience, she must bring an objectivity to the observation of her own experience and remember and record a wide range of critical detail (Bizzocchi & Tanenbaum, 2011).

The process of reading is continuous and open, in which new meaning or interpretation of the text always surface as we read. The meaning of a text is never to

be exhausted, the circle of interpretation is ongoing and should not be completed or closed, never to reach final "true" reading. As Bizzocchi indicates:

"to say something has been "read" is to suggest that it has been consumed and that the possibility of meaning creation has been exhausted. (Bizzocchi & Tanenbaum, 2011, p. 292)

Close reading can also be viewed as the act of haruspicy, a divinatory practice of predicting the future by interpreting the entrails of sacrificed animals (Wolfreys, 2000). In this sense, it treats the reading of a text as an act of intuition, a process that perhaps, connected to the possibility of mystic and telepathic happening. In reading, there are always intentions to translate above the matters of logic and rationality, by making sense of events and predicting events in the future.

Wolfreys (2000), suggests the act of reading as our attempt to retrace the traceries of veins, arteries, vessels and other means of communicative tissue in the form of textile, textured exegesis. In this process, we attempt to shed some light by cleaning up the grotesque and corporeal aspect of reading. However, there is always the need to regurgitate, going back and forth between our feeling, the extrasensory mode of perception and the thinking, the logical state of our perception, a dialectic process of subjective experience and more objective interpretation that defines how we make meaning.

Bennett and Woollacott (1987) argue that texts cannot be understood in isolation from each other. The relationship between text and user is another important face that needs to be considered. They found that the user arrives at a text with a set of 'reading formations" in place. This inherent understanding will influence (or which) aspects of that text will have resonance for that subject. Close reading then, is a process-driven practice rather than a product driven one. Our understanding of a text is then situated within the particulars of each reading, in context of all other readings (Kristeva, 1980).

Lastly, the close reading process is independent from its authorial intent and cultural context, placing all critical emphasis on the text itself: "the need to understand a reading within its own context did not extend to a need to understand the text which was

being read within its authorial and cultural context, at least not at the methodology's onset" (Bizzocchi & Tanenbaum, 2011, p. 294).

Chapter 4.   Close Reading

4.1 Introduction

Common principles between AT and ICH supports the notion that activity serves as our means to understand our world. This notion act as the conceptual framework that informs my close reading of a digital heritage project which focuses on layers of experience associated with a specific artefact (in tangible and digital form). Starting with the E-1701 parka as a point of departure, I will use new media narrative, interactivity and social networking paradigms as analytical lenses in recounting my experience when directly handling this object. I will then compare this experience with the experience of interacting with the garment's digital representations in the Smithsonian's National Museum of Natural History online database and the Inuvialuit Living History website.

This close reading is based on frameworks as discussed in chapter 3. Common principles in AT and ICH are implemented to provide a conceptual framework in looking at activity as the central element in meaning making. The close reading observe activity between the subject, the object (the environment), mediated by tools or technology and influenced by the community or in this case, cultural aspect of the community (Kaptelinin & Nardi, 2006).

The analytical lenses of narrativity, interactivity, social networking are implemented as benchmarks in determining how the above nodes of activity are realized in the form of representations, user interaction and the content's potential for reinterpretation and redistribution. They are also selected because of their potential effectiveness in bridging the principles of AT into digital setting for digital heritage project with the goal of safeguarding ICH in mind.   While all the three lenses bring important contributions to table in developing digital heritage project, narrativity scalar could be considered as one of the initial and critical dimensions that should be implemented in

designing interaction for digital heritage project with the above goal. In my close reading, narrativity scalar serves as the primary focus because it provides framework in gauging the visibility of a particular story. My analysis in narrativity is grounded in Ryan's and Bizzocchi's frameworks (Bizzocchi, 2007; Ryan, 2006). Both of these frameworks treat narrativity as a variable or scalar concept, not as an absolute. These frameworks provide conceptual tools to analyze the degree of narrativity within a media artefact or environment. Specifically, these frameworks are used to gauge how narrative may play a key role as evocative agents in revealing the stories about the character, the storyworld and the traditional activity associated with a traditional Inuvialuit garment. By analysing the action of a character in a particular setting and her emotional reactions in response to such event, it is possible to observe how the character conceives meaning through her actions.

Ryan's narrative dimensions include: Spatial, Temporal, Mental, Formal and Pragmatic (Ryan, 2006). Bizzocchi's narrative dimensions parse on the character, storyworld, emotion, narrativization of interface and micronarratives in media text (Bizzocchi, 2007). The spatial, temporal and mental dimensions in Ryan's, overlap with Bizzocchi's dimensions of character, storyworld and emotion. These overlapping dimensions will be discussed separately in the close reading. However, in summarizing these findings within my conclusion section, Ryan's overlapping criteria will be mapped into Bizzocchi's. I will discuss them as general findings in character, storyworld and emotion.

The analytical lens of interactivity is grounded on Zimmerman's classification of interactivity: cognitive, functional, explicit and meta dimensions (Zimmerman, 2004). This analytical lens is used to gauge the various level in interactivity, which influence the degree of user's agency in affecting the design of a media text. In turn, this also affects the user's ability to conceive her subjective interpretation of the text.

The last set of analytical framework applied in this close reading will be the notions of openness and malleability which affect a media text's potential in allowing subjective interpretations of its content and its tendency to be redistributed and shared within social networking platform. This lens also ties into Jenkins concept of

"spreadability" in which he refers to the attribute of new media that allows its content to be distributed widely by involving audience participation in the circulation process (Jenkins & Ford, 2013). The notion of openness and malleability also relate to Latour's concept of the immutable mobile (1987). It suggests that an idea becomes more powerful if it is mobile and yet remains immutable as it can be exposed and transmitted to a larger set of audiences without changing its meaning (Blok & Jensen, 2011). Finally, I would like to say that this close reading serves as a scholarly function in providing insight into the interface design of the Inuvialuit Living History project website and other similar digital heritage initiatives in the future.

4.2 The Smithsonian MacFarlane Collection E-1701 Parka

In July of 2013, I participated in the Summer Institute of Museum Anthropology at the Smithsonian Institution's National Museum of Natural History, in Washington, DC. The opportunity allowed me to take a closer look at select artefacts in the Smithsonian's Arctic Collection.   Amongst these many artefacts, were some of the most exquisite traditional Inuit parkas made of animal skin such as caribou, seal and birds.

4.2.1   Description

One of the parkas that I decided to perform a close analysis on was a woman's caribou outer shirt accessed on December 22, 1866 near McKenzie River Delta in Northwest Territories, by a Hudson Bay trader, Roderick MacFarlane. During this opportunity I also had a chance to trace the sewing pattern for this particular parka and several others.

Parka E-1701 is made of caribou skin. Note that the accession record termed it as "women's deer skin outer shirt", which relates to a more generalized classification of Caribou. The parka has rounded flaps at the front and back. The bottom parts are cut higher on the hip area. The shirt has long sleeves, which are hemmed with wolverine fur. The garment is cut so that the direction of the fur emulate the way they were on the animal body. For example, the pieces of fur that came from the back side of the animal are used for the back side of the garment. On some other garments the skin from the ear

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lobes are even still intact, attached as a part of the hood. The back side of the garment has a darker brown colour tone, while the rest of the garment has a lighter brown or mocha color. The hood is very loose fitting and spacious. It is decorated by bands of white and dark clipped caribou skin with snippets of red wool and loops of red yarn, which surround the opening for the head. The texture and thickness of the clipped caribou skin on the decorative bands reminds me of horse hairs typically used to make a broom. A trim of wolverine fur is set back from the head opening. The outer part of the wolverine fur is thicker and bottom part is much softer almost like the texture of cotton balls. There is a decorative insert, with skin tags, on the front flap. The white haired gores on the chest also have red yarn snippets. The areas between the armpits show a bit wear and tear, as they were some bald spots on the fold and creases. The pieces of furs were sewn using sinew in overcast stitching style. The garment gives out a very distinctive and strong scent, although it was not unpleasant, the scent could be overwhelming at first and requires a bit of getting used to. The garment was quite heavy and stiff. At the touch, the texture of the fur almost felt as if it is a living being. The garment was catalogued as follows:

4.2.2.   Close reading of the physical object: E-1701 Women's Deerskin Shirt

I would like to argue that besides its role as a physical and psychological tool, the garment itself is also an interface between the designer and/or the wearer and her external world. It is the surface where the designer's thought and her action and experience in the external worlds met and came into being. As Hookway posit, an interface is also defined as a form of relation, either with machine or other forms of environment. It is a space where our "humanness is implicated" (2014, p. 1). Appropriating animal skin for clothing article can be considered as a way to implicate our "humanness" to relate with our external environment. This also resonates with BØdker's notion that an interface relates to the user beyond its physical aspects and appearance but also in psychological, anthropological and philosophical terms (1987). The above relations are also present in this particular garment. Parka E-1701 relates to its designer and/or wearer beyond its practical function as a form of clothing, which protect her from the harsh Arctic environment. In psychological aspect, its design and stylistic aspects

relates to the designer's and the wearer's social identity. Although there are similarities in these stylistic details, they also carry variations, which are unique between each community across the Arctic. Finally, the lived experiences associated with creating and wearing traditional clothing is a part of what defines the meaning of being a member of a specific community, such as Inuvialuit.

Figure 4.1   E-1701 Museum Catalog Card

4.2.1.1   Narrativity

Using narrativity and narrativization as analytical lenses and speaking from the point of view a scholar, the directness of this interaction enabled me to experience the objects in a more subjective and holistic way – I can see, hear and feel the different textures, smell the strong scent of the animal hide, etc., However, the thought process, the traditional practices and the context that essentially delivers this object onto its concrete form remains undisclosed as representations of their externalization are not available. Arguably, each unique part of the garment could easily spur imaginations that might evoke a story on how the animal skin was prepared, designed, cut and sewn together, but all these were mental representations that reside internally within my interpretation. The possible reason that the garment is evocative might have something to do with its "aura" which relates to the object's authenticity and authority. Authenticity refers to the directness of one's experience with the object, the presence of the original in the same time and place. Authority, in this case, refers to the concrete marks of the object's creator and how the object testifies about the history it has experienced (Benjamin, 1936). For someone from Inuvialuit culture, the parka might bring up a

crisper image and stronger emotional reactions as these elements were probably still a part of their lived experiences that are shared with other individuals in the community.

I will begin first with reading the garment itself, setting aside the museum catalogue card for a separate reading. Parsing this garment against Ryan's analytical tool box in the level of "storiness" (a term she uses to describe the level of narrativity) in terms of spatial, temporal and mental, pragmatic dimensions (2006), I noted the following observation:

Parka E-1701

Spatial dimension: (a world with individuated existent(s)):

The intricate attention that goes into the process of making the garment suggests there was an intelligent character who lives in a particular culture, an environment and era in which animal skin clothing must be a means to survive and to navigate the harsh environment. However, the garment itself does not carry any concrete facts asserting that such world and individual exists. For this reason, I found the garment is low in narrativity.

Temporal dimension 1: (this world is situated in time and undergoes transformation).

Through the skills of the maker, the caribou hide was transformed to a piece of clothing. It also shows signs of wear and tear on the armpit areas, implying that it was transformed from its initially new state to a used state. Here, the evidence for transformation is relatively strong. After all, this was once a part of an animal and it show signs of wear after it was made. However, there is no concrete evidence of specific time of these transformations so there is mitigation against strong sense of transformation, as we don't see the specific stages, we can only imagine them. In this case, although the specificity of time is not as strong for the general public, it is stronger for scholars and for Inuvaliut people who have background understanding about traditional Inuvialuit parka.

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Temporal dimension 2: (These transformations are caused by non-habitual physical events)

The transformations caused by the activity of cutting and sewing are not "habitual physical events" because they were executed with a specific intent and motivated by the character.

Mental dimension: (representation of intelligent agents with mental and emotional reactions)

There is an implied but not a very developed "story" about intelligent agents with mental and emotional reactions. The intelligent agents (the maker or the user) are not directly portrayed. There is a bit more direct information about the collector, but there is not much explicit evidence about mental or emotional reactions of any of the agents.

Mental dimension: (some events are represented as purposeful actions by agents)

There is no concretized evidence that reveals the process between the agent's intention and her utterance. For this reason, the practices associated with this garment are purposeful actions by an agent can only be inferred.

Formal dimension (1): sequence of events in cause and effects relationship, closure.

There is no concrete evidence that shows the above dimension, but the garment itself implies there are practices associated with its creation and from them we can infer the existence of the above dimension. For example, the process of making this garment would involve hunting, preparing the animal hide, measuring, cutting the pattern, sewing and etc.

Formal dimension (2): some events are asserted as facts.

The garment itself is a concrete final result of the practices that gave the garment the final shape. The garment can be asserted as facts that the processes associated with it actually took place. However, because the final form is the only fact and there is no concrete evidence that shows how it gets there, this dimension is also low in narrativity.

Formal dimension (3): communicates something meaningful.

As mention earlier, Ryan proposes that "meaning" in this case is contextual (2006 p.9) "If we accept 8 (pragmatic dimension) as part of definition, then narrativity is not an intrinsic property of the text, but rather a dimension relative to the context and to the interests of the participants". In this case, this is a subjective interpretation of the text and it might be varied between the Inuvialuit's, the scholar's, the public's, and the museum's.

From a scholar's point of view, I argue that despite the garment's minimal level of "storiness" across the spatial, temporal and mental dimensions, its ability to evoke a story about the character who made and/or wore this garment is slightly stronger in the pragmatic dimension compared to others. This is because Ryan leaves open the agency of the reader to ascribe meaning. However, the specificity and depth of meaning in this garment is not strong in and of itself. The real strength of meaning is the garment's connection to what the reader already knows about Inuvaliut culture, not the direct knowledge offered by this single artifact.

To continue on, parsing the garment against Bizzocchi's analytical framework renders the following findings:

On the character and storyworld dimension, I found similar findings as with Ryan's analytical framework. Both character and storyworld can be inferred from the garment. The garment carries a low level of narrativity on these dimensions.

Emotion (character's emotion, ludic or gameplay emotion, artefact emotion)

From the scholar's point of view, my interaction with the parka brought some appreciation of the Inuvialuit sewing and traditional clothing to me which I believe is termed as 'artefact emotion' in Bizzocchi's framework. The aura of the parka somehow made it seems as if the hide was a living being. It also elicits curiosity in me about the processes involved in making such a garment and motivated me to seek more information about them. I imagine the general public would feel similar reactions towards the garment. From the perspective of an Inuvialuit, I think it can be argued that there would be some 'artefact emotion' as well. The garment might elicit stronger emotional reactions as it might have some nostalgic qualities that takes them back to specific experiences which gives the garment its meaning. For example, the strong scent of the hide would bring up memories about the experience of hunting or activities related to the preparation of the hide. These are most likely experiences that were shared with others in the family or community, which in context of AT and ICH the garment facilitates connections between the individual, the practice and the community it was originated from.

Narrativized interface (Incorporating elements of narrative in "the look and feel" of the interface)

The garment can be considered as a form of interface, narrativized in terms of its look and feel. This "narrativized interface" does infer a story about the people who created the garment and the world they live in. This is probably stronger for someone from that community.

Micronarratives (Smaller instances of narrative arc within the a larger arc.)

When discussing Ryan's formal dimension above, I interpreted that the garment itself contained facts that implied the processes of making and wearing. It can also be argued that we can infer these implied processes as micronarratives. All of these micronarratives are assembled into a larger arc through readers' subjective interpretation as the garment's final form.

To summarize, although the garment is generally low in narrativity, it can be seen to imply possible stories about what the process of making the garment might be like. The richness of my interaction with the garment engaged me in many sensorial levels. Aside from being able to see the intricate details, I was also able to feel the texture of the caribou fur and hide, to hear the rustling sound as the material rubbed against the surface of the table and smell the strong distinctive scent of the hide. All these channels contribute to the richness of the implied stories the object is telling. The strongest that came to mind are about the process of making the garment. The garment also elicit my emotional reactions in that I was astonished to see the intricate craftsmanship that goes into the work and later motivated me to find out more about the process of making such garment. In this case, the garment connects me to the stories which are not just about the object's provenance but also the processes that gave meanings to it.

As a scholar, and probably applicable to the general public as well, I cannot say that I identify with the implied character or people in these stories just from handling the garment. However, for the Inuvialuit people handling this garment might incite richer emotional reactions as the richness of the interaction might bring to surface nostalgic memories of similar experiences.

Continuing on to the catalogue card as an artefact directly connected to the garment itself, the following are my findings in terms of narrativity based on Ryan's framework:

The Catalogue Card

Spatial dimension: (a world with individuated existent(s)):

The card explicitly noted the place the garment was accessed from as MacKenzie River. Although it is explicitly noted, the card does not have any other specifics that give information or representation that can give a sense of place on this location. In this case the card is also low in narrativity.

Temporal dimension 1: (this world is situated in time and undergoes transformation).

Although this dimension is explicitly noted I consider it low in narrativity as the dates are the only concrete information. There are two dates noted on the card indicating that this world is situated in time. These dates are the accession date and the date the object is inventoried.   The notion of transformation is inferred from the dates. The accession date infers the object's removal from its origin, which means the object is transformed in terms of its ownership. The date the object is inventoried denotes confirmation that the object became a part of the museum collection, which means the object is transformed in terms of its status.

Temporal dimension 2: (These transformations are caused by non-habitual physical events)

This dimension is also low in narrativity as it is only inferred that the transformations above were by non-habitual physical events.

Mental dimension: (Some of these existents are intelligent agents with mental and emotional reactions)

The card denotes that R. MacFarlane was the one who accessed and collect the garment from the "Eskimo". It is implied that R. MacFarlane was an intelligent agent with mental and emotional reaction since he was able to conduct collecting activities. On the other hand, the card does not denote anything about the agency of the "Eskimo's". This can only be implied if the card is paired with the garment itself. The garment implies a much stronger sense of the "Eskimo's" intelligence as well the potential for associated mental and emotional reactions.

Mental dimension: (some events are purposeful actions by agents)

The card denotes the collector's name (R. MacFarlane) along with the words "accessed" and "inventoried", these infers that the individuals were acting purposely. However, the card does not say anything about purposeful actions by the "Eskimo".

Formal dimension (1): sequence of events in cause and effects relationship, closure.

The card carries low level of narrativity in this dimension. The card implies that there is sequence of events in cause and effects relationship. It begins with the accession of the object from the "Eskimo", the object was then collected by R. MacFarlane and then inventoried to be a part of museum collection.

Formal dimension (2): some events are asserted as facts.

The card explicitly denotes the accession date and the date the garment was inventoried. In this case the card carries a higher level of narrativity in this dimension comparing to other dimensions.

Formal / pragmatic dimension (3): communicates something meaningful.

The card communicates a story about a collecting event by R. MacFarlane in which a "Women Deer Skin Shirt" was accessed from the Eskimo people on December 22, 1866 and then became a part of the museum collection.

From the scholar's point of view, the card has a higher level of narrativity in that the information is more literal. However, the stories that emerge from the card are about the curating process of the object and not the stories about the processes of making or the character who make the garment.

Parsing Bizzocchi's framework on the catalogue card, my findings are described below:

Character and Storyworld

In these dimensions, the card brings to surface the collector's character, R. MacFarlane and the museum storyworld. The story evoked is about the process of curating a piece of garment from the Eskimo people in the MacKenzie River area by R. MacFarlane. In this case, although the story about the character and the storworld are also inferred and cannot be considered as

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strong, the literal information and concrete evidence evoked stronger stories compared to the ones evoked by the garment.

Emotion

The card does not contain any reference to emotion or elicit any emotional reaction from my part. From the point of view the Inuvialuit this might be different although I could not imagine what these reactions might be. Unlike the garment, the card does not elicit astonishment from my part.

Narrativized interface – the look and feel / aesthetic

It could be argued that the card has the look and feel of an institutionalized organization.

Micronarratives

The card carries two micronarratives: The accession of the object in 1866 by R. MacFarlane, and the event in which it was inventoried by the museum in 1975. Referring back to Ryan's formal/pragmatic dimension, the causal relationship between the two micronarratives emerges as a subjective interpretation.

Applying both Ryan's and Bizzocchi's framework, one can see two different stories that emerge, one from the garment and the other from the catalogue card. If we compare the garment and the card together the card has a higher level of narrativity and the story that is evoked by the card is about the process of curating the garment. This story follows the object after it was accessed by R. MacFarlane from the Inuvialuit in 1866 and then became a part of museum collection since. The garment has a lower level of narrativity compared to the card but it has a stronger ability to elicit emotional reaction ('artefact emotion'). The story that surfaced from the garment is about the people who made the garment, the process of making the garment, and the subsequent wearing of the garment.

4.2.1.2   Interactivity

My direct interaction with the garment gives me an ability to have a very close look at the details of the material and the texture, to unfold and to uncover the part that normally are not accessible. It is technically possible to modify the physical form of the garment, if we put aside the museum's restrictions. The garment also gave me a lot of freedom in interpreting "the content" independent from its literal description. In this case, it affords a high level of cognitive and explicit interactivity.   In terms of functional interactivity, the initial function of the garment is to provide the wearer some protection from the environment as well as serving as psychological tool. It seems apparent from the elaboration of decorative details that the garment in some ways projects the social identity of the wearer. If we see the garment as having these functionalities, then in terms of Zimmerman's functionality dimension, the garment's initial functionalities has been disabled. First, it is because of its status as an object in the museum collection which restricts our ability to perform these functions. Second, the garment was removed from its initial setting in which its unique existence is relevant to its function (at least in its function as a physical tool). In this case, the removal of the garment made it no longer functional because it is not relevant to the environment and social setting in which it currently stand. However, it could also be argued that the function of the garment is now reimagined as the carrier of information and meanings about the people, the place and the culture of its origin. In which case, in terms of functional interactivity, I consider it low in this dimension because this information was not available on the garment itself. I was left to my own device to find additional details and contextual information about this garment from other resources or databases, which seem to be scattered in terms of their physical location and forms.

4.2.1.3   Spreadability | Openness and Malleability

I would like to argue that the object itself allows a high level of interpretation in terms of its content and context. However, when paired with the catalogue card, this limited my interpretation as the written text literally labels the object from its practical aspect -- its function as a physical tool. Its symbolic role that relates to psychological and cultural aspects of the object was omitted. Additionally, in context of its status as a part of the Smithsonian museum collection, the object is hardly open nor malleable. As

it is the only copy existed, it requires special handling to move it from the storage area, modifying its physicality such as deconstructing it is not a possibility. The object is also sprayed with pesticide to prevent insect infestation, requiring the handler to wear gloves on all cases and occasions. In terms of the abstract idea that describes the object, while I can claim that this object is not merely a garment, there is no way the Smithsonian would allow me alter the physical catalogue card which in this case, has a total authority of claiming the definition of the object. In contrast, the ILH site allows its visitors to contribute information through the website so that their own definition of the object has the potential to join the institution's definition.
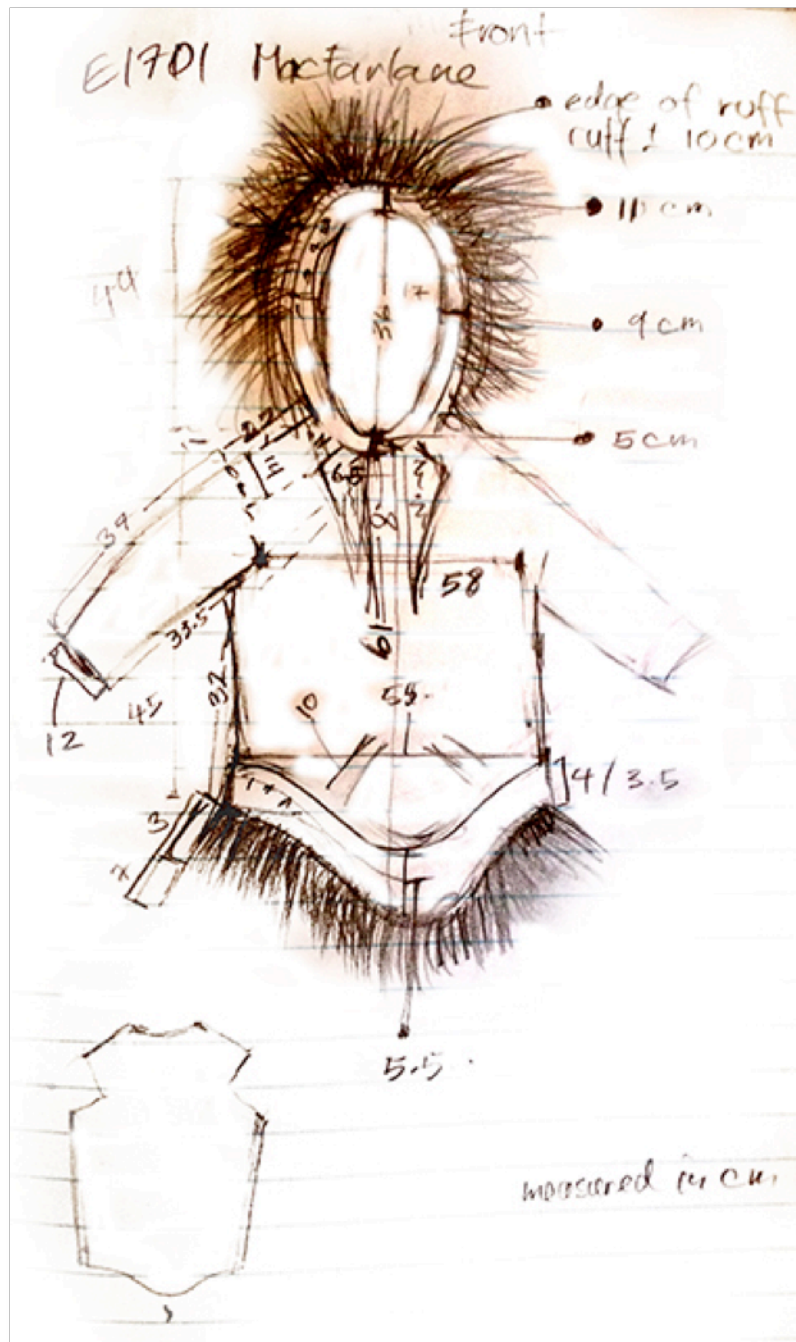
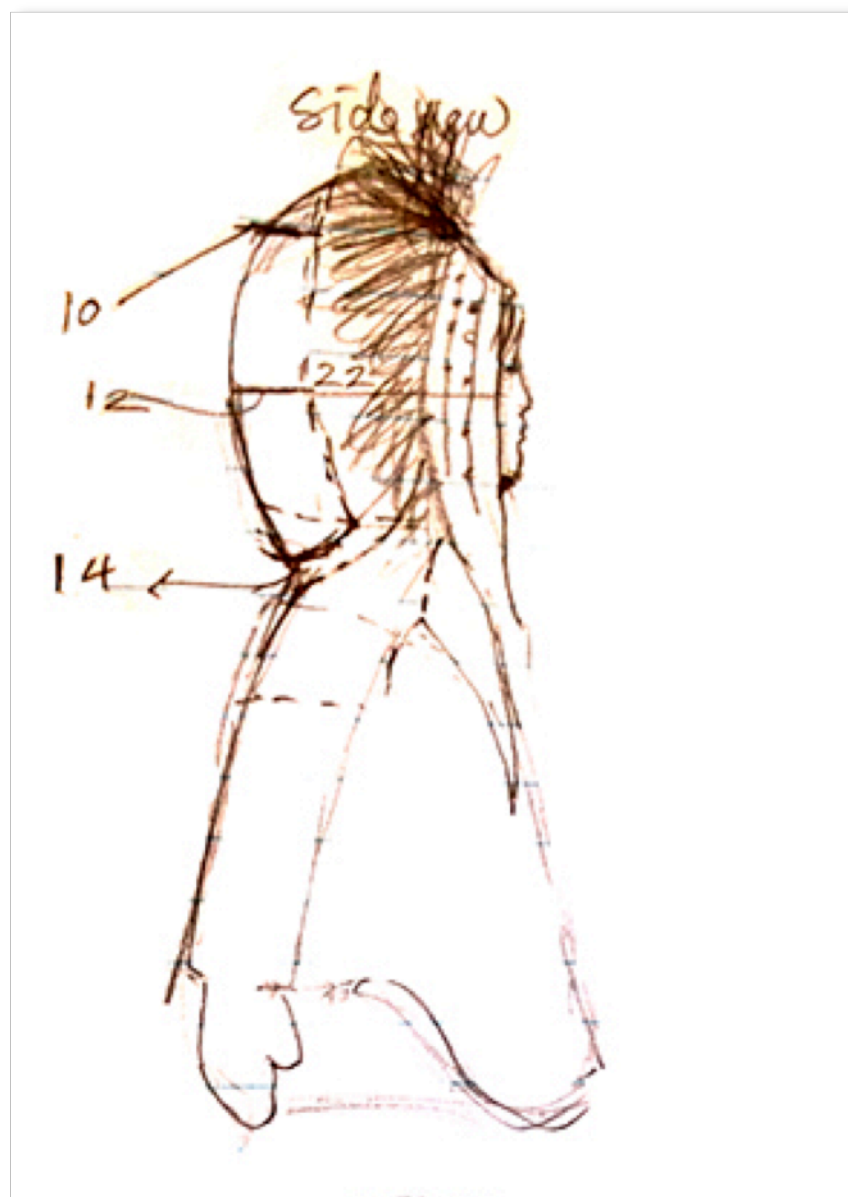**Figure 4.2   E-1701 Front - Sketch by Irine Prastio**

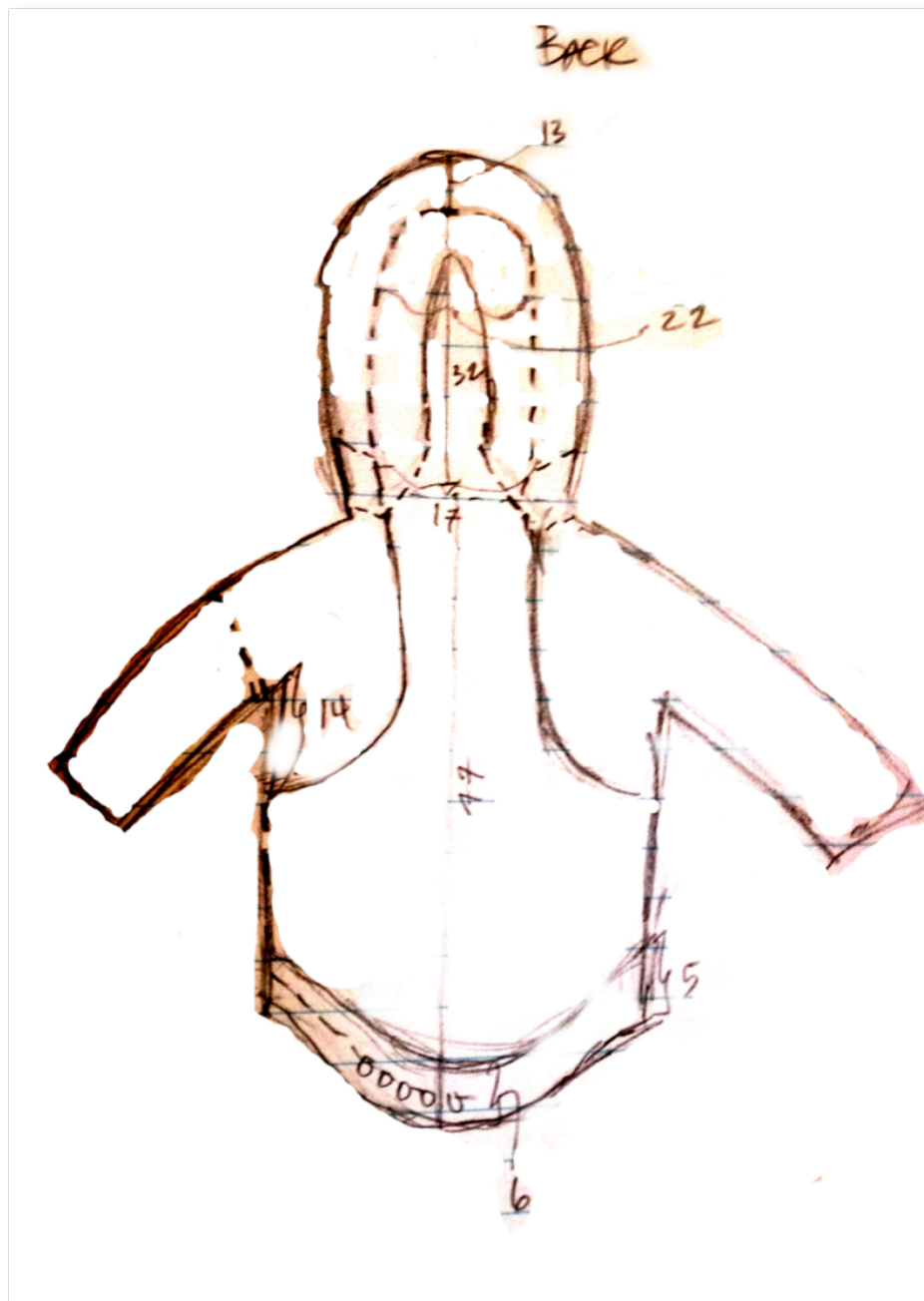**Figure 4.3   E-1701 Side - Sketch by Irine Prastio**

Figure 4.4   E-1701 Back - Sketch by Irine Prastio

Figure 4.5   E-1701 Back - Photographs by Irine Prastio

Figure 4.6   E-1701 Front Flap Trim Photograph by Irine Prastio

4.3 E1701 – Digital Surrogate in the Smithsonian Online Archive

4.3.1   Description

This garment exists as a digital surrogate in the online catalogue of the Smithsonian's Ethnology Department database as four different digital representations which communicate more or less the same information. All four are in a form of written text. To get to the database I need to go to the Smithsonian National Museum of Natural History's website (http://collections.nmnh.si.edu/search/) and do a search on "E1701" which brought up the above four representations of this same object.

The first representation is an HTML representation of the archival digital catalogue (Fig 4.7). In this HTML representation, there are many data fields but only a few data field are filled out, which were: the catalogue number, the specimen count, the division, the object name, the index term, the culture, the continent, the country, the province or state and the notes field. The rest of the fields are empty.

Fig 4.7   **E-1701 Digital Representation in The Smithsonian Institution Online Database**
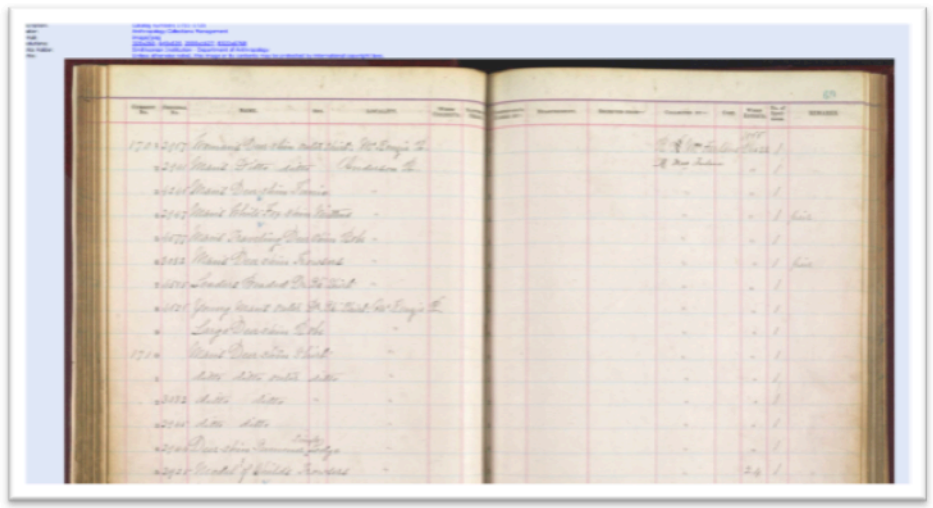
Fig 4.8   **E-1701 Ledger Scan - Digital Representation at the Smithsonian Institute Online Database**
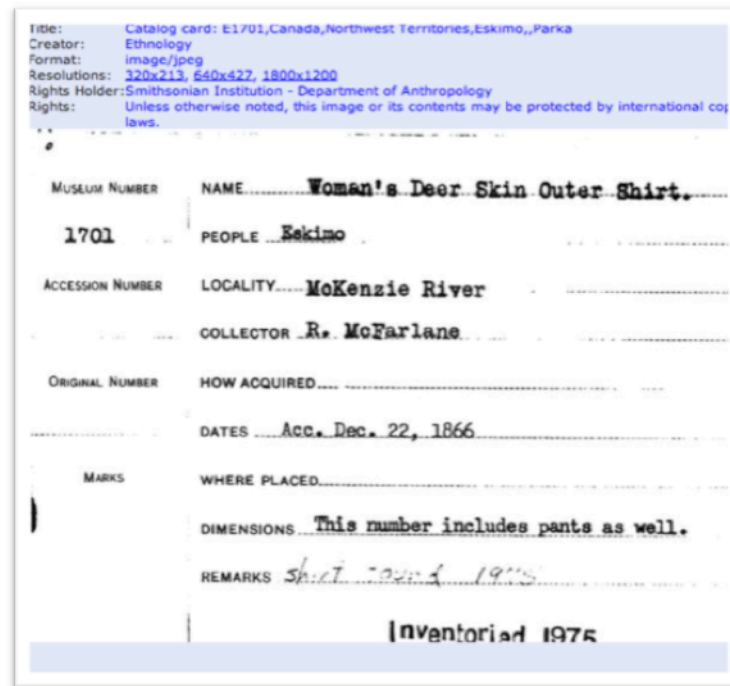
Fig 4.9 **E-1701 Digital Representation of Catalog Card in the Smithsonian Online Database**

The second representation is a digital scan of the actual catalogue card (Fig 4.9) The third is a digital photograph of the museum ledger, (Fig 4.8). This representation documents the object in a form of a spreadsheet noting the catalogue number, the object classification, the geographical location it was collected from, the culture it was collector's from, the number of pieces and the collector's name. The information noted on these ledger pages are identical with the information stated on the catalogue card and the HTML version of the catalogue card.

4.3.2 The Close Reading

4.3.2.1 Narrativity

Parsing Ryan's framework on this digital representation of the garment, my findings are quite similar with the physical catalogue card. There is a little bit more written details on this representation, which is described below in my findings.

Spatial dimension: (a world with individuated existent(s)):

In this dimension, the digital representation of the garment is low in narrativity although it contains slightly more information about the place the object was accessed from. In the catalogue card the place was simply noted as MacKenzie River. In this representation there is more specific information about the region, which is noted as: Northwest Territories, North America, Canada (Fig.4.7). The existent(s) specifically noted in this version are the collector, R. MacFarlane, while the Inuvialuit is noted in a there is more specific generalized term as the "Eskimo". There is no visual representation of the place that gives it a sense of storyworld. The only visual representations are a photograph of the catalogue card, along with a photograph of the handwritten museum ledger. Both of these representations use words that evoke the storyworld of the museum. Examples of these words are "collector", "ledger", "rights holder".

Temporal dimension 1: (this world is situated in time and undergoes transformation).

The findings of this dimension indicate higher level of narrativity in temporal dimensions as there are written accounts on dates: accession date (December 22, 1866) the date the object is inventoried (1975) (Fig. 4.9), the date the museum record of this object was last modified (March 31, 2014).   The first two dates denote transformation on the garment and the third denotes transformation of its digital representation.

Temporal dimension 2: (These transformations are caused by non-habitual physical events)

There is low narrativity in this dimension as well although it is higher than in the garment and the catalogue card. The image of the ledger suggests the event in which the object was accessed and change ownership. The note indicating the object was inventoried also suggests such transformation. The name of the collector also can be a part of the detail that suggest transformation was initiated by someone specific, However, no other specific or concrete details are available. In this case, this representation is considered low in this dimension as well.

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Mental dimension: (Some of these existents are intelligent agents with mental and emotional reactions)

Similar with the observation on the physical card itself, these representations also infer R. MacFarlane as an intelligent agent as he had means to access and collect the garment from the "Eskimo". Here, as with the physical card, these digital representations are missing information about the agency of the "Eskimo's. They do not include any indications about the Eskimo's intelligence and emotional reactions. The quantification of objects as made clear by the numbering scheme, give an impression that there is no emotional connection between the people who put the object in the collection and the object itself. The object is assumed as a part of possession among other objects, see the ledger (Fig. 4.8), in this case, their meanings are abstracted onto a singular meaning.

Mental dimension: (some events are purposeful actions by agents)

Also similar findings as with the physical card. The card denotes the collector's name (R. MacFarlane) along with the words "accessed" and "inventoried", these infers that the individuals were acting purposely. However, the card does not say anything on purposeful actions by the "Eskimo".

Formal dimension (1): sequence of events in cause and effects relationship, closure.

This digital representation carries low level of narrativity in this dimension. Although it can be inferred that there is sequence of events in cause and effects relationship from the accession of the object, then collected by R. MacFarlane and then inventoried to be a part of museum collection.

Formal dimension (2): some events are asserted as facts.

This representation explicitly denotes facts: the accession date of the garment, the fact that the shirt was found, the date the garment was inventoried.

In this case the card carries a higher level of narrativity in this dimension compared to other dimensions but the level is still considered low as these facts don't provide rich details about the story.

Formal / pragmatic dimension (3): communicates something meaningful.

Similar as the findings on the card itself this digital representation only implies the curation story of the garment. In this case the story prior to the garment's accession is missing.

Moving on to Bizzocchi's framework, my findings on the character and storyworld dimensions is consistent with my findings drawn from Ryan's above.

Character & Storyworld

This digital representation brings up the character and the storyworld of the museum's curation process. Although there is more information about the storyworld from which the garment came from (MacKenzie River, Northwest Territories, Canada). This information is limited to written text and there is no visual representation, while there are visual representation of the catalogue card and the museum's ledger, which evoke the storyworld of the museum.

Emotion (Character's emotion, Ludic Emotion, Artefact Emotion)

This digital representation is lacking in all three.

Narrativized Interface

This digital representation has a very minimal level of narrativization in its interface. The only aspect that is somewhat applicable is the look and feel. In this case, the image of the museum ledger and the catalogue card contributes in giving a sense of the museum's storyworld.

Micronarratives

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Similar with the catalogue card, the micronarratives evoked on this digital representation and the causal relationships evoked between them are the stories about the garment's accession and removal from its origin and its incorporation into the museum collection.

On the last three dimensions of Ryan's framework, my findings are quite similar with the catalogue card. Despite some of the information are explicitly stated in a form of writing, this representation is also low in the two formal dimensions above as the stories are mostly inferred. Similar, with the catalogue card, the stories that were brought to surface are about the curation process of the object. Terminology used such as "ledger" and "catalogue" in labeling the digital images also affirms the above models as well as instilling the notion of ownership and authority. The stories about the processes of making and the character who made the garment which is key in context of AT and ICH as the root of meaning making are not articulated. This is largely because there is no visual representation and hardly any information is presented about the garment before it was accessed by R. MacFarlane in 1866. As a result, although it can be argued that these digital versions of the garment satisfy all of the narrative dimensions, these representations are also low in narrativity and while it exists, the stories that is more visible is about the probable meaning of the garment from the museum's perspective. The absence of emotion as one of the dimension in narrative also disconnect this representation from inviting subjective interpretation.

If we go back to AT's claim that we conceive meaning as activity is enacted then in the case of these two digital surrogates, I argue that the meaning of the object is reduced to a singular one, object according to the museum's perspective -- that it is a part of items collected by Roderick MacFarlane of such and such date, as collecting event was the only activity noted in all three digital representations.

Additionally, the absence of a digital image of the garment itself prevents any further opportunities for the user to have her own experience and interpretations aside from the written representation of the object. Because many other objects in museums are represented in this similar method, the meaning of the object are standardized and

reduced to numerical order and as a result each these objects offer homogenous experiences between one to the others.

4.3.2.2 Interactivity

These digital representations offer some level of functional interactivity in which representations are designed for the purpose of presenting practical information about the object as a part of museum collection, such as catalogue number, object description, number of pieces, the collector's name, acquisition date, and storage location. In this case, they carry very low level of cognitive, and explicit interactivity. Going back to the overlapping principles of AT and ICH, in which activity transform not just the object but the subject as well, relates to the defining aspect of meaning creation. The above three modes of interactivity are present although they don't give you an opportunity to create meaning as the interaction does not take the user to anything significant.

Further, at the first glance, I was under the impression that the text on these images were links to other informational pages because they are in blue. However, I was mistaken, as there are not links or lexias that lead to other pages. I evaluated this experience against Crawford's conceivable vs accessible state (Crawford, 2002). Crawford's theory suggest that the quality of interactive experience can be measured by the ratio of conceivable states to the number of accessible states by dividing the former with the later. He maintains that the higher the number rendered from this calculation relates to the better the quality of interactive experience. In this particular case, these digital representations, there are 11 conceivable states but zero accessible states, (See Fig. 4.7), resulting in a very poor, or perhaps non-existing interactive experience.

4.3.2.3 Spreadability | Openness & Malleability

The issue of openness and malleability relates to the notion that no representation is either complete or permanent. They are snapshots of historical processes in which differing viewpoints and multiple interests have been temporarily reconciled (Bannon & Bødker, 1989). In the case of these digital representations, although they are publicly accessible, the absence of other modes of interactivity and the literal, thus rigid form of representation, render them far from open and malleable in terms of their ontological interpretations. They remain as static snapshot in which many

other aspects (such as the practices and the people behind the object) are missing from the picture and invisible. By digitizing these representation of objects but not offering means for public to participate in other means of interactions (except in a mode of functional interactivity), these representations become an immutable mobile (Latour, 1987) that insist on the authority of the museum in defining the object solely from its own perspective. They do not acknowledge other aspects of the object that might prove to be critical in the context of AT and ICH.

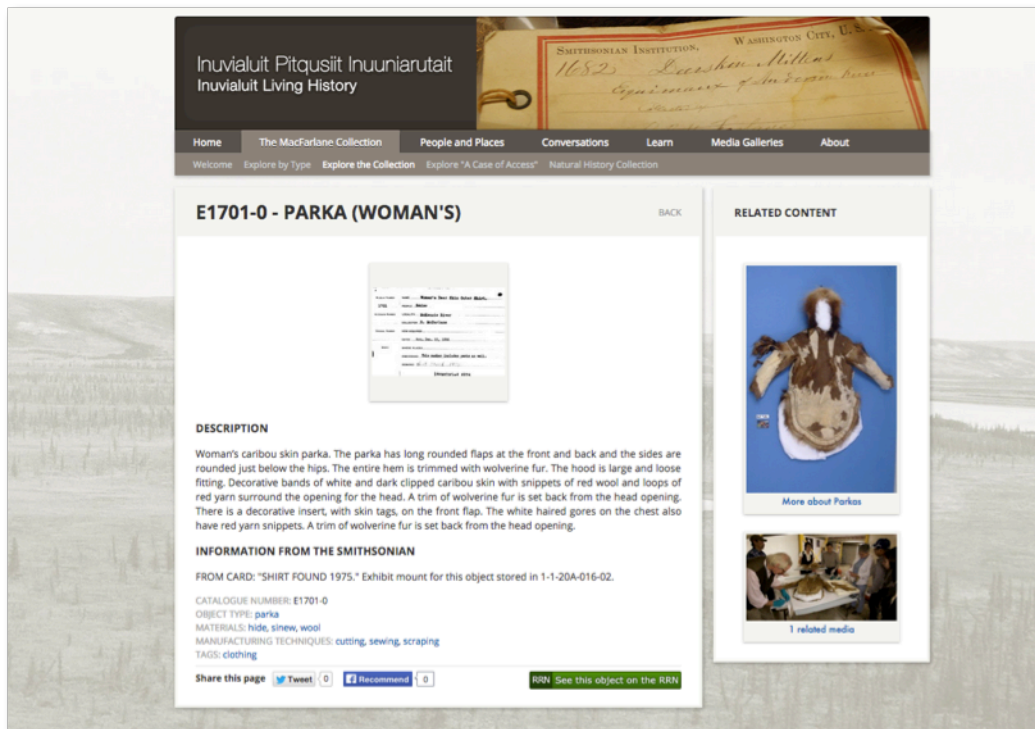**Figure 4.10.   E-1701 Digital Representation in the Inuvialuit Living History Project Website**

Stephen Loring, James Pokiak, Catherine Cockney, Albert Elias, Freda Raddi, Mervin Joe, Karis Gruben examine Inuvialuit clothing items. Smithsonian Museum Support Center, Nov. 2009. Photo by Dave Stewart.

Fig 4.11.   E-1701 and the Inuvialuit Community Members during their visit to the Smithsonian in 2009.

4.4   The Inuvialuit Living History Item E-1701

4.4.1   Description

In this project the garment is labeled as E1701-0-Parka (Woman's) presented as the same catalogue card as in the Smithsonian's museum collection except it is accompanied by a longer written description such as the shape and style, the various material used and the decorative details of the object. However, most objects in this website are presented visually by including photographs or illustrations.   The object type, manufacturing technique and the tag, which indicate some sort of thematic groupings, are also listed below this description. (Fig. 4.10). The text on these data field are blue indicating that they are lexias that links to other pages. If we click on the object type name, (in this case – parka), it will take us to a page that present other objects in this category. The manufacturing technique and the tag data field work the same way. Near the bottom of the page, there are links to social media applications and the Reciprocal Research Network Site (Rowley, Schaepe, Sparrow, Sandborn, & Radermarcher, 2010).   Additionally, on the right hand column there is a section that present other related content and related media.   The background of the website pictures a dimmed image of the landscape in the MacKenzie River delta.   The colour of the banner is dark brown, and the title of the website (Inuvialuit Living History) is written both in English and in Inuvialuktun. The image on the banner changes to fit the type of content the user is consuming.   For example, when the user is on the MacFarlane collection tab, the banner image shows a museum label typically used to identify the object in the museum collection. There are various category tabs that link to sub categories and individual pages. The main category tabs are: Home, The MacFarlane Collection, People and Places, Conversation, Learn, Media Galleries, and About.
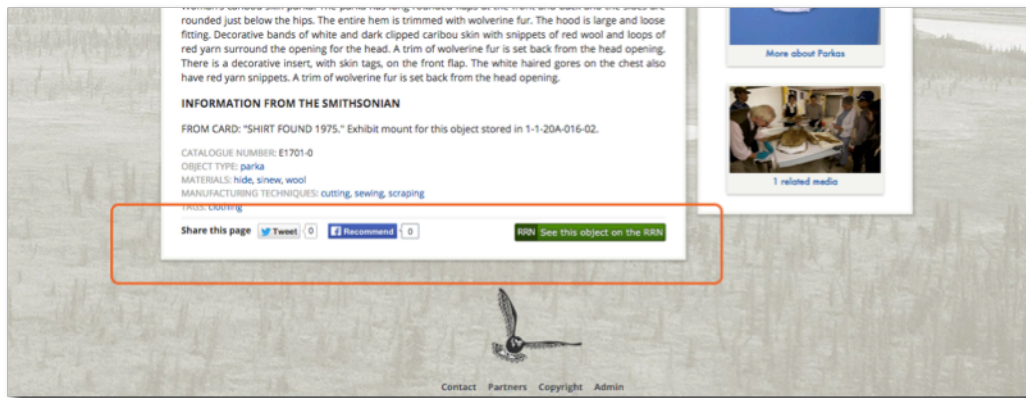
Figure 4.12. **Social Media Platform in the Inuvialuit Living History Website**

4.4.2 The Close Reading

4.4.2.1 Narrativity

Ryan's Framework

Spatial Dimension

The ILH version carries a higher level of narrativity in this dimension when compared to the other two. The site uses a toned down background image that gives a sense of place. The site banner displays alternating photographs of objects in the MacFarlane collection in museum setting as well as photographs of Inuvialuit members interacting with these objects during their visit to the museum in 2009. The ILH version also provides links to other pages containing texts about specific places. For example, under the tab "People and Places" visitor can find information about the Anderson River region, the origin of objects in the MacFarlane collection.

Temporal Dimension (1): (This world is situated in time and undergoes transformation).

The ILH's version indicates the dimension of time--the dates in catalog card). Transformation is inferred from words like "collected", "inventoried" in catalogue card. The ILH carries a stronger sense of transformation because it

also includes words that explain the process of making the parka ("cutting", "sewing", "scrapping") thus also inferring the transformation of the object (more from the maker's perspective).

Temporal Dimension (2): (Transformations caused by nonhabitual physical events)

There is implicit story about transformation. For example, the notion of transformation in the process of making the garment is rendered by words like "cutting", "sewing", "scraping". While these transformations is noted in literal way, the story inferred is not as strong as it is in the parka itself. Compared to the Smithsonian's version, the ILH representation of transformation relating to the process of making and wearing the garment carries a stronger level of storiness but not at the same level as with the garment itself. Unfortunately, because the image of the museum catalog card is placed as the focus of the representation and there is more concrete information of indicating transformation on this card (noting the date the garment was "collected" – indicating change in ownership and "inventoried" - indicating it became a part of the museum's collection). In such event the story about the curating process takes precedence over the stories about the process of making and wearing the garment.

Mental Dimension (1): (This world consists of some intelligent agents with mental and emotional reactions)

The ILH's version provides more details about the Inuvialuit as the intelligent maker. However, because the catalogue card is the main focus on the representation, it is the story of the object's removal is more prominent.

Mental Dimension (2) (Some events purposeful actions by agents)

The ILH attempts to present equally, (although implicit) both the collecting event and the making of the garment as the results of purposeful actions by individuals. However, the "collecting activities" is the more prominent event. First

it is because there is no visual representation and more specific detail illustrating the making of the garment as a purposeful action by the Inuvialuit, other than the above three words ("cutting", "sewing", "scrapping"). Second, the catalogue card is represented in a more prominent way in terms of the hierarchy of representation and because the card infers only the collector's side of the story, the story about the making of the garment becomes obscured.

Formal Dimension – sequence of events

The ILH version is low in this dimension, the only text that infers the sequence of events is on the catalogue card and it is about the collecting process of the garment.

Formal Dimension – events asserted as facts

Although it is still considered low in this dimension, the ILH version provides more concrete information about the events involving the collector and Inuvaluit's visit to the museum in 2009. These facts do not have much of narrative weight in terms of the story about how the parka comes into being. More information on the maker, or the generalized cultural makers, of the parkas (or of the process of making) would give this more narrative significance.

Pragmatic Dimension

As previously mention, meaning here is contextual and subjective. So in this case the purpose of this particular dimension is to gauge the ability of the text in invoking subjective meanings. The ILH attempts to represent equally both the story about the garment's provenance and the story of its curation. However, I feel that the ILH's version is unsuccessful in invoking the stories about the process of making the garment. Perhaps this is due to the lack of visual representation of the garment and also due to the lack of comment on the process of making and the cultural context. As a result the more explicit representation, which is about the curation story become the focus of the story.

Bizzocchi's framework

Character

The ILH version is more successful compared to the Smithsonian version in invoking stories about the Inuvialuit as the community or a collective "character" where the garment is originated from. This is largely because the digital image of the catalogue card is brought into the ILH website and by having done so, the object, to some degree is claimed as the Inuvialuit's.

However, the story that tells the connection between this garment and the Inuvialuit people is not any more visible than the story about the process of collecting the garment. The digital image of the catalogue card detailing the collector's name, and the date of accession, asserts a specific connection between the collector (R. MacFarlane) and the garment. However, the connection between the garment and the Inuvialuit is not as visible. This connection is at best only implicated from the inclusion of the digital image of the catalogue card within the ILH site. The photograph on the bottom right depicts some people from the Inuvialuit community handling the garment during their visit in 2009. However, the fact that this the same garment is not specifically noted on the caption. As well the photograph is less visible compared to the catalogue card in terms of visual hierarchy.

Storyworld

The ILH version is also only slightly more successful in invoking the Inuvialuit's storyworld. The ILH site does incorporate the landscape background texture that gives a specific sense of place.

Emotion – (1. Character's emotion, 2. Ludic Emotion, 3. Artefact Emotion)

1) This representation does not show any character's emotion.

2) From my perspective, my interaction with the ILH version did not incite any emotional reactions. However, for an Inuvialuit their interaction might invoke nostalgic memories about a certain place or character, or experiences related to the process of making and wearing the garment.

3) Unlike my interaction with the garment itself, my interaction with the ILH version did not incite any "artefact emotion". I think part of the reason is the lack of visual representation that could give a sense of what is it like to experience the garment --- to feel the different textures of material, to see the details of the garment, the handiwork of the seamstress on the material surface. In a sense these are part of our experience that connects to the "aura" of an object. Visual representation are often more effective in communicating these experiential aspect compared to written words.

Narrativized Interface (the aesthetic, the look and feel)

The ILH version implements a low level of the "look and feel" in terms of the Inuvialuit storyworld by implementing the background image. This image is of the Anderson River Valley, part of the Inuvialuit Settlement Region.

However, the ILH does include a private link to a set of digital paper dolls which could be considered as a low level of "bridging mixed reality". One of these dolls wear a digital version of this parka (which I created). The paper dolls are for the Inuvialuit school children. They can print out these dolls, color and cut them out and play dress up with the dolls.

Micronarratives

There is one inferred micronarrative on the object page itself, in the picture of the Inuvialuit visit to the Smithsonian in 2009. There are two inferred micronarratives on the catalogue card but relating more to the garment's accession and curating process: "shirt found 1975", and "Exhibit mount for this object stored in 1-1-20A-016-02"

If compared with other objects that have visual representation on the interface, for example such as the interface of E-1073 Parka, the higher visual hierarchy is given to the image of the object. This would establish different subjective interpretations about the relationship between these micronarratives and thus might alter the meaning of the garment. Referring back to the context of AT and ICH, the intention is to bring forward the activities and the contextual aspect associated with the garment's provenance as supposed to the museum's practice point of view. In this case, the absence of the visual image of the garment as the focal point of representation and as a source for implicit micronarratives, also affect its formal dimension (in terms of Ryan's framework). This hinders any intension of bringing up the garment's meaning from the Inuvialuit's point of view.

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4.4.2.2   Interactivity

The E1701 interface does incorporate all of the dimensions of interactivity: cognitive, functional, explicit and meta. As Zimmerman maintains, cognitive interactions is the basic level of interactivity which includes the process of understanding the meaning as we are reading text based information. The site also employs some functional interactivity as it provides some structural order such as category tabs and related content sections. In terms of its explicit interactivity, the user can follow hypertexts links but she doesn't have the ability to affect the designed choice of the text or change the appearance of objects on the screen. In this case, the interface offers what Ryan terms "exploratory" involvement with the text but not ontological involvement with the text. In exploratory mode the user is given the freedom to move around but her interaction does not affect the history or designed choice of the text. However, it doesn't offer what Ryan calls the "ontological" mode where the user is able to determine which possible stories or plots will develop from the choice presented (Ryan et al., 2004).

Zimmerman addresses what he sees as the deficiencies of exploratory interactive design. He suggests an interactive experience confined to following links in hypertexted media is not particularly meaningful:

"Hypertext choice" is not meaningful, as it is in a game of Go or Zork. Instead, each click reinforces the rigid authority of the author, any sense of play reduced to acquiescence. The hypertext form is nonlinear, yes, but stillborn" (2000, para. 22).

If we follow the links from the words that represent manufacturing processes, it leads us to a page that presents other objects with similar manufacturing processes. I was a bit disappointed as I was hoping I could see some visual representations of the process either in a form of still images or video. However, these are not available. As a result, even though this particular interaction did establish the point that certain activity is an important part of the Inuvialuit culture, I feel that it fails to make an emotional connection with the user. Without visual representation that tells the story and captures the lived experience associated with this activity, the content tends to be consumed in an objective, informational manner. Thus, the most important part of human activity, the experiential aspect that portrays our emotion and feeling as we perform activity, its subjective interpretation, are left out.

4.4.2.3   Spreadability | Openness and Malleability

The ILH interface provides social media links such as Twitter and Facebook to share content. However the content itself does not carry characteristics that tend to generate user participation. According to Jenkins, these are content that could blur the lines between the producer and the user by allowing a "remix" of cultural knowledge and interpretations. Users are more likely to share media text that communicate their shared values and emotional connection to such values or meanings and that they are somewhat involved in reinventing or reinterpreting these meanings. Jenkins affirms that this is often a determining factor in the spreadable nature of a particular media text (Jenkins & Ford, 2013). Zimmerman defines this mode of interaction as meta or cultural interactivity where interaction is expanded outside a single media text. In this mode, audience appropriate the initial meaning attached to a text to place themselves within that media text.

In this case, the despite the fact that the object's interface in the ILH site offers the opportunity as well as the technical resources to share its content such as links to

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Facebook and Twitter, at least from my point of view as a scholar, it is missing some of the attributes that are vital to these shared values and emotional connection.

As Jenkins et al., writes:

"Spreadability" refers to the technical resources that make it easier to circulate some kinds of content than others, the economic structures that support or restrict circulation, the attributes of a media text that might appeal to a community's motivation for sharing material, and the social networks that link people through the exchange of meaningful bytes (Jenkins, et al., 2013, p. 4).

The content is represented in a form written text. In terms of malleability, written text can be considered rigid and not malleable compared to other types of representations. Its rigidity is restrictive in raising subjective interpretation. As an immutable mobile, an idea communicated in writing can be distributed without changing its meaning. A description of a garment in a form of written text might prevent the garment's misappropriation by profit seeking party, however it also restricts its meaning to be adapted and reinterpreted for the purpose of ICH survival.

Chapter 5.   Conclusion

My experiences interacting with the object and two of its digital representations has generated insight in terms of understanding the challenges in designing user experience for a digital heritage project. The most critical of these challenges includes how to bring in and translate experiences of a heritage object as building blocks in meaning making onto its digital representation and interface effectively.

Common principles between Activity Theory and Intangible Cultural Heritage which underscore the critical role of activity in conceiving meaning is used as a conceptual framework in this analysis. AT and ICH propose that our experiences during these activities serve as building blocks in perceiving and understanding our world. AT also proposes that our activity is mediated by tools. These tools or technologies perform roles as both physical tools and psychological tools. As our perception is influenced by cultural factors, our action is also influence by these factors. Contextual factors that influence our action are: 1) the rules within the community and 2) the division of labour (Engeström et al., 1999). The diagram below illustrates how the influential relationship between the individual, the environment and the community within which the activity occurs can be considered as a unit of analysis in conceiving meaning. Because tools are mediators between our actions and the environment, they embody mental representations of our experience during activity.
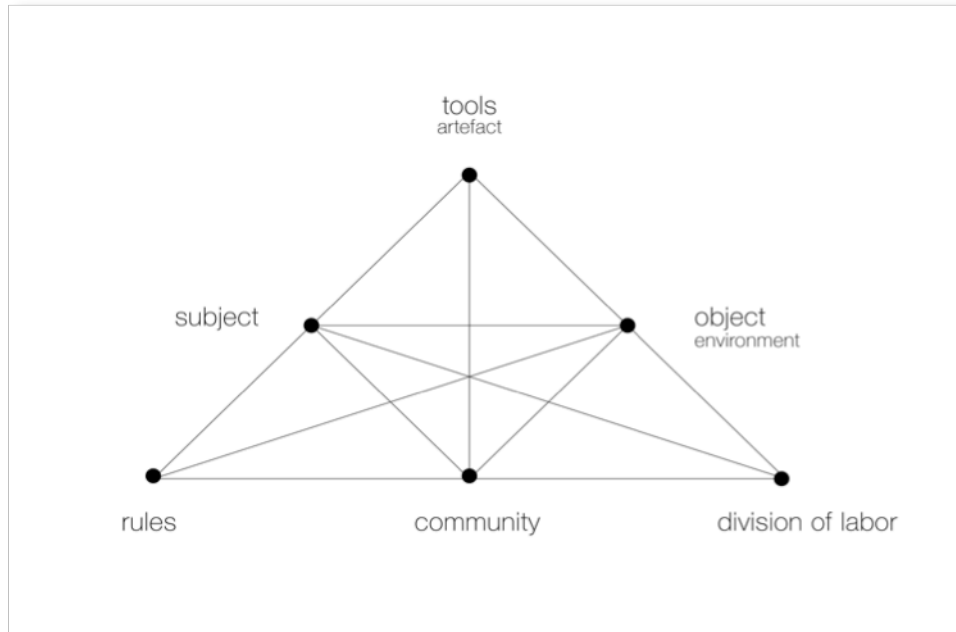
Figure 2.3.   Activity Theory Matrix – Adapted from Engestrom 1999

* Object in this diagram relates to the environment in which an activity takes place and not object as in an artefact.

Looking at this system model with a focus on the effort of revitalizing ICH, I relate the "tools" node as an artefact in a museum collection. The artefact is part of a matrix of activity and other elements that shape the experiences around it.   Some of these elements include the person who produces and uses it, the environment in which it was produced from or used, as well as the particular community this activity may take place. I am using this AT framework to observe how the above relationship is represented and translated onto a digital heritage object through the lenses of: 1) narrativity 2) interactivity 3) emergent social networking or spreadability of meaning. The findings of these analyses are based on my point of view as a scholar who has some familiarity in the area of interaction design, new media narrative and the notion of ICH. The result of this reading might be varied if done through the eyes of someone from the originating community.   Some aspects of the reading might elicit stronger or weaker emotional reactions depending on who the reader is.

The analytical lens of narrativity or "storiness" refers to the ability of a media text to invoke a story (Ryan, 2006; Bizzocchi, 2007), and it is the primary lens that drives the direction in this close reading. In the specific context of objects in the museum collection and in relation to common principles in AT and ICH, in which human action is seen as the central element in meaning making, there is a need to bring forward the stories about the object's provenance and its associated contextual aspects as they play critical role in the transmission and reinterpretation of meanings, values, and knowledge within its originating community. As a research methodology, the close reading allows me to unpack the above associated values and meanings by experiencing the garment and its digital representations in a subjective kind of manner and subsequently parsing my experience objectively against the analytical lens of narrativity. The close reading reveals that the way in which dimensions of narrative are represented affect the level of narrativity thus determine which stories are implied more saliently. As shown in my findings detailed below, my close reading reveals the stories about the object's associated processes of making and using which gives the object its meaningful context within is originating community are obscured by the stories about the object's accession processes, which generally represents the garment only from the perspective of the museum practice.

 I am using Bizzocchi's and Ryan's narrative frameworks as analytical parameters for this purpose. Some of these parameter overlap, so for the purpose of clarity, my findings will map Ryan's overlapping criteria onto Bizzocchi's analytical framework.

Ryan's framework proposes narrative as a scalar as opposed to a rigid binary measure. A media text can be analyzed on its level of "narrativity" or "storiness", which refer to a media text's ability in invoking stories in our mind. The more visible the sequence of events in the text, the higher the narrativity. Additionally, the pragmatic dimension in Ryan's framework also proposes that stories are interpreted in context of its participant (Ryan, 2006). Which in this case, the text's ability to invoke stories also depends on subjective interpretation of the participant.

Bizzocchi's framework proposes five narrative elements in analysing a media text: character, storyworld, emotion, narrativized interface, and micronarratives (Bizzocchi et al., 2011). The first three elements in this criteria are overlapping with Ryan's Spatial, Temporal and Mental dimensions. Part of Ryan's Pragmatic dimension (communication of something meaningful) also overlaps with Bizzocchi's "emotion". By mapping the first three of Bizzocchi's criteria against the activity matrix, I was able to get information about how subjective meanings might be conceived during a particular activity. His narrativized interface criteria are used to analyse how the element of character, storyworld and emotion are incorporated into the user interface and experience. His micronarrative criteria are connected to Ryan's "Formal/Pragmatic" concepts of sequenced events, causal chain and closure. Bizzocchi's "micronarrative" lens can be used to determine if there are smaller instances of narrative coherence that form or imply a larger narrative arc. This lens also parses directly to Ryan's formal/pragmatic dimension which she suggests that subjective interpretation of the reader can find causal relationships both within these micronarratives and in their relationship to a larger narrative arc..

My findings on narrativity can be summarized as follows. My analysis on the garment and its catalogue card does infer two different "stories". Both "stories" are low in narrativity as many of the connections between the dimension of character, her action and the storyworld are not concretized, rather they are implied. The first story, which emerges most strongly from the garment, can be traced back to its origin, the Inuvialuit people. Parsing this with AT and ICH, this story speaks about the creation of the garment and the activity related to the production of the garment. This story implies a close relationship between the subject, the object (the environment) and the community. The second story, which emerges from the catalogue card, is about the process of curating the garment. It speaks particularly about the event in which the garment was accessed, the person who collected it and how it finally became a part of the Smithsonian's property.

Although the stories that emerge from the garment are low in narrativity, the directness of my interaction incites some emotional reactions. This emotional reaction is referred to as the "artefact emotion", which relates to the artefact's intrinsic

narrative quality to elicit psychological impacts (Bizzocchi et al., 2011). The sensorial nature of my interaction with the garment amplified its narrative effect. This quality is related to the artefact's "aura", where the phenomenological uniqueness of our experience with the artefact amplifies its sense of authority and authenticity (Benjamin, 2008). If we look at the garment as a form of interface, then the garment can be considered as carrying a high level of "the look and feel" criteria in Bizzocchi's analytical framework. It is, in a sense the "real" unmediated "look and feel" of the garment's storyworld. The catalogue card also can be argued as having a certain look and feel, however it is of the museum's storyworld – the fact that the information was typewritten on a "institutionalized" form template. The details on the garment, such as the stitching technique, the stylistic details, enable me to see clearly the intricate details that imply the stories about the character, her thoughts and actions in the world.

Relating this to Verplank's interaction model, the notion of "the look and feel" can be connected to the question of feedback from the artefact – (how do you feel?) --how does the artefact appear to you, what kind of affordance it gives out, does it look inviting, soft to touch, intimidating, etc. However, the notion of affordance is also different between one individual to the other, a quality that seems appealing for one might not be so for the other. In a sense, I believe this is exactly how affordance creates unique emotional reactions in the user. The aspect of affordance can also be applied against the character and storyworld dimension of narrative – what kind of emotion does the character and the storyworld elicit, how do we identify with the character and the storyworld as represented. The subjectivity of affordance can also be mapped on Ryan's pragmatic dimension of narrative, in which she posits that if we consider the text as having a pragmatic aspect, then narrativity is not an intrinsic property of the text rather it depends on the subjective interpretation of the participants (Ryan, 2006).

The catalogue card provides explicit information about the curating process of the garment. Specifically, in terms of the character and the storyworld, it is the collector's character who is on the "active" end, while the Inuvialuit are on the "passive" end. The card foregrounds the agency of the collector, not the Inuvialuit. The other processes associated with the garment such as the chain of activities that make up the production of the garment are not represented. Other contextual information about the

environment and the community from which the garment was collected from are also missing. As a result, the meaning of the garment from the point of view of the originating community can only be deduced from the object itself. However, when the garment is paired with its museum catalogue card, the implicit nature of the stories from the garment's production and use are overwritten by the explicit detail of the collecting story from the catalogue card.

From my point of view as a scholar who had the opportunity to observe both the garment and the catalogue card I was able to experience the sense of implicit story offered by direct contact with the garment. However, for general public who does not have this opportunity, they would not be able to establish the connection between the garment as presented on the catalogue card with the people who touched it and the community from which it originated. The garment is not easily accessible by the public and the online version only represents written information in context of its curating process by the museum and its agent.

In terms of interactivity, I had direct contact with the physical object - to touch, turn, flip, to observe the details closely and to feel the texture (although through a pair of gloves as the object was sprayed with poisonous insecticides). In addition, I was also able to trace the sewing pattern of the garment, to create my own interpretation of the making of the garment. Here, it could also be argued that by tracing a sewing pattern of the garment, my explicit interaction is recreating the design choice of the text.

Finally, in terms of the garment's ability to inspire sharing through social networking, despite the fact that it is not a digital artefact, the garment does posses some of the characteristics of spreadable media as proposed by Jenkins. The garment has an ability of inciting emotional reactions and appeal through its authenticity and authority, which brings a nostalgic quality especially to the community who conceived it. It comes from a community that embraces collective values as opposed to individuality, which reinforces Jenkins' argument on shared fantasies or values as one of determining factor of spreadable media. Its implicit representation also brings a sense of "unfinished content" where I was invited to imagine or interpret the story behind the object. It sparks my curiosity to find information about how the object was made, why it was designed in

such way, where did the material come from and so forth. In which case, the garment also satisfy the "information seeking" quality as described by Jenkins.

The above interaction with the physical object is not without drawbacks. There are many museum restrictions that are added for protection and preservation. To gain physical access to the object involved steps that concern with the safety and the security of the object. Even after I was given access to the object I was not able to move the object around freely or to handle it directly without a pair of gloves as it is covered with a coating of poisonous insecticide. Aside from reducing the haptic experience of the object, my explicit interaction with the object is limited to only manipulating its position. I was not able to modify its form. In this case, the garment itself is not open and malleable both in terms of its physical forms and the potential meanings it carries. The museum's restrictions deactivate the above mentioned producerly potentials. It limits what we can do with it in terms of its functionality as a garment (a physical tool) as well as a carrier and incubator of meanings (psychological tool).

The digital surrogate such as the one in the ILH project, could address the above limitation by placing the copy on public domain thus opening a virtual access to the object and by providing technical means of sharing through social media platforms. However, as my findings show, and setting aside the medium's current limitation in translating the haptic, sensorial aspects of the experience, some of the producerly aspects in particular the attributes that incite the emotional reactions and appeal to the community it originated from were missing from the digital surrogates. For this reason, even though the ILH interface does provide technical means to share content, it falls short on the "emotion" dimensions which inspire people to want to share this content. It is not a question of whether the content can be shared rather it is the question of whether the people want to share it.

On a separate note about spreadability as one of the considerations in designing for digital heritage initiative, the above characteristics which are considered beneficial to promote spreadability of meaning, may also pose potential risks in misappropriation of meanings and exploitation of Indigenous' intellectual property and knowledge. This

brings forward the need to establish Indigenous protocol in restricting access to some particular content (Christen, 2012a).

Comparing my experience above with the two digital representations of the object, I found the digital representation in the Smithsonian Institution's site does not represent the object and its contextual information as proposed in common principles between AT and ICH. Although this version does invoke some limited stories, the findings from the analytical lens of narrativity shows that the stories invoked are not the ones that are key to the effort of revitalizing ICH. The stories about the garment's true provenance are not made visible while the stories about the garment's removal from object from its originating community is the ones that are asserted.

The Smithsonian's version consists of a digital copy of the object's catalogue card and a digital scan of the museum ledger, both are written from the point of view of the museum. If we consider the scanned photograph of the catalogue card and the ledger as a narrativization of interface, then it has been narrativized for the purpose of highlighting the museum's curating activity and not for the purpose of revitalizing ICH in the Inuvialuit community. In such case, the story told through this representation is about the garment's removal from its cultural context. This particular story about the garment's removal from its cultural context, although implicit, is a very prominent and invoked repeatedly to the detriment of the originating community by way of representing objects in a form of a museum catalogue card and other form of representations that stand for a claim of ownership.

My experience with ILH version of the object was much more engaging and interesting. Unlike the Smithsonian's version, this version represents the contextual and network of activity associated with the garment. The site also establishes a connection from the object to the people and the place associated with it by incorporating narrativization of its interface and historical information about them. However, aside from the garment's visual representation on the paper doll, which is not immediately apparent because the link is not readily displayed on the garment's interface, a more detailed and appealing visual representations of the garment along with its associated activities are missing. There are written information detailing the garment and the associated

activities, however I believe that these are not the most effective way in making emotional connection with the user. While the written text can explicitly communicate the meaning associated with the garment in an objective manner, it is also rigid and immutable in its nature. Therefore the garment's representation, which largely depends of written text, put a limit from having its potential as a producerly or spreadable media text to be explored and subjectively reinterpreted. In relation to Zimmerman's four dimension of interactivity, the immutable nature of this text only allows cognitive and functional interactivity but not explicit interactivity and meta or cultural interactivity in which meaning is conceived and shared.

Overall, I found the ILH representation of the object expands the role of the physical object in terms of making the network of activity and experiences associated the object acknowledged and evident to the public. However, based on the premise of AT and ICH in which activity is the central element in meaning making, acknowledging the critical role of these processes is only the first step in achieving this goal. The most unique and memorable part of my experience in handling the garment came from its quality that incites the 'artefact emotion'. Besides feeling astonished by the quality and the presence of the artefact I was also curious about the character and the processes behind this object. These emotions motivated me to look for more information about them and explore its physical form in more detail. In many ways, the look and feel of the garment is the aspect responsible in eliciting emotional reactions. I feel that this ability is not translated onto the ILH's digital copy.

Additionally, the key factor in meaning creation is human activity – an ongoing process of externalization and internalization between our thoughts and our environment. Suchman writes that an interface could be conceptualized as social and material configurations through which forms of agency become possible (2006). A digital heritage object which is designed with such concept in mind in relation to AT and ICH could be configured to facilitate users' agency by enabling its user to affect its form, to allow itself to be reinterpret and its meaning to be continuously regenerated. For example, an intermediate but easily attainable increase in user agency would be what they routinely do in online product retail sales sites - an image that you can magnify, and then examine closely using your cursor rollover to visually cruise the object in extreme

closeup. We can also often see back or side views as well as frontal views.   Online museum catalogs could learn from online sales catalogues in terms of engaging and making its content more appealing to its users. My direct interaction with the garment did allow me to have my own interpretation of the text by tracing the garment's sewing pattern. However, such level of interaction is not available with the digital surrogates. The ILH's site does provide means for visitors to contribute new information about objects in its collection in a form of written information, which could be argued as a form of malleability for meaning interpretations.   However, the experience of manipulating an object in its form of physical or graphical representation is hardly the same as reading or writing about the object's description in a written form. The first is a process emulating our actions, which again, involves our embodied knowledge and requires the phenomenology of our perception to bring understanding and meaning to the object of our activity. While the latter emulates our thinking process, here the body is detached from the process of meaning making as the external world is objectified without our experience as part of the input.

> As Dourish writes:

> The positivist, Cartesian "naïve cognitivism" approach makes a strong separation between, on the one hand, the mind as the seat of consciousness and rational decision making, with an abstract model of the world that can be operated upon to form plans of action; and, on the other, the objective, external world as a largely stable collection of objects and events to be observed and manipulated according to the internal mental states of the individual. From this perspective, a disembodied brain could think about the world just as we do, although it might lack the ability to affect it by acting in it (2004, p. 18).

My analyses are grounded on the overlapping principles in AT and ICH which stresses the importance of activity in meaning making and the need for specific cultural meanings to be adapted in order to ensure its livelihood. I observed how these overlapping principles are realized in the design of user experience for a digital heritage object through the analytical lenses of narrativity, interactivity, as well as openness and malleability. A scalar concept of narrativity scalar is used to gauge the ability of the media text to invoke stories in the mind. The lens of interactivity is used to gauge how meanings conceived from these stories and meanings are reinterpreted through user

interaction and participation with the text. The lens of openness and malleability is used to gauge characteristics of content that supports tendency for meaning reinterpretation and redistribution.

While all the three lenses bring important contribution to a development of digital heritage project, the narrativity scalar could be considered as one of the first and foremost considerations that should first be implemented in designing interaction for digital heritage project with the goal of safeguarding ICH in mind. Particularly in my close reading, it serves as the primary focus because it provides framework in gauging the visibility and impact of story – including the story that is implied, not explicit. Through a close reading of narrativity, it is possible to observe which stories are invoked and just importantly, from whose point of view are they told. It is also possible to observe which dimensions in narrative are represented and how this relates to the evocation of meaning. Consider the three primary dimensions of narrative in Bizzocchi's framework: character, storyworld and emotions. By analysing the action of a character in a particular setting and her emotional reactions in response to such event, it is possible to observe how the character conceives meaning through her actions. In this sense, narrativity could be considered as a characteristic that bridges principles in AT with the goal of safeguarding ICH. Another important factor while implementing narrativity in digital heritage initiatives specifically with the goal of revitalizing ICH is to consider the implications between implicit representations and explicit representations of stories. A story that is implied rather than explicitly told would bring some openness and malleability in its structure and would allow the user to subjectively reinterpret and adapt it to her own imaginations and creativity. While this is a process that is key to continuous reinvention of meanings, thus consequently affect the survivability of ICH, such implicit nature might also bring disadvantages to the people who own these particular stories. In context of AT, these are stories tied to the cultural practices -- their attached values and meanings that make these communities unique. Granting access and agency to these stories might also allow these values to be misappropriated to the detriment of the originating community. In an ideal case, the authority and control over these stories should be in the hand of the originating communities themselves. User experience design for such project then would involve a collaborative effort between the originating

community, the museum and the designer in achieving the goal in safeguarding and revitalizing ICH

In closing, the findings of these analyses are based on my point of view as a scholar who has some familiarity in the area of interaction design, new media narrative and the notion of AT and ICH. The result of this reading might be varied if done from the perspective of someone from the originating community. Some aspects of the reading might elicit stronger or weaker emotional reactions depending on the background of the reader.

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