

ENCHANTED TELEIDOSCOPES: MULTIMODAL INTERFACES REFRAMING EXPERIENCE IN THE MUSEUM

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CERTIFICATE OF AUTHORSHIP

I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

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Date: 17 July 2013

CANDIDATE'S STATEMENT

I certify that all typographical errors, spelling and grammar have been corrected in the final copy of the thesis.

Francesca Veronesi

Signature of Student

Date: 2 May 2016

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A teleidoscope is a form of kaleidoscope that has a lens and an open view. It is used to form kaleidoscopic patterns from objects outside the instrument itself. I use the image of a teleidoscope to introduce the context of the research which explores mediated environments in museums, here referred to as 'multimodal interfaces' given their potential to reflect and refract 'objects' from the outer world and to translate them within the time and space of the museum. Objects, in this context, comprise the tangible legacy of physical artefacts, artworks, material records, cultural objects, buildings and landscapes, and the intangible heritage of oral histories, customs, and knowledge that was inherited from past generations and held for the benefit of future generations.

Technology is transforming all aspects of museum activity, from access, to interpretation, representation, engagement and learning. Museums, heritage sites and landscapes can all be looked at as part of an electronic ecology, that is, the pervasive and networked technological world in which we are immersed. Exploring 'experience' as a new territory for curatorial design, the research argues for an 'ecological' approach to the artistry of experience-making in museums and the devising of integrative strategies that enable encounter, intimacy and embodied interactions between people, places, memory, cultural objects and the things we preserve from the past. Opening up a discussion around experiential approaches to the interpretation of cultural heritage and its inherent ambiguities and paradoxes, questions are posed regarding the opportunities of digital technologies for embodied engagement as a new way of knowing about the world, the 'other', memory and ourselves. Participating in the current discourse on the inclusive role of the multimedia museum in a multicultural society, the research poses questions on how curatorial design practices can develop an integrative approach combining spatial design and digital mediation in order to create a zone of contact between cultures and histories that is both responsive to interaction and open to participation.

The research case studies explore from a critical perspective the strategies adopted by designers and curators to mediate difference and facilitate intimacy with contested topics and representation of marginal and counter-histories. The studies comprise both critical analysis of existing exhibitions in various museums, as well as original creative works developed by myself as a curator and designer. The research practices offer an experimental ground where to critically explore and reflect on the possibilities of the mediation of curatorial design in negotiating experience and (re)constructing the past, thus extending the notion of the museum beyond exhibition spaces to comprise landscapes, objects, digital spaces as well as physical bodies.

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Structure of the work

In order to facilitate navigation of the dissertation and for the reader to come to terms with its scope and themes I present in the paragraphs that follow the outline of the thesis which helps to understand how the work is structured and the content articulated.

1 Introduction

This chapter introduces my interest and motivation as a curator, designer and researcher, my experience in the field of museum making practice, the research's target audience and context. It presents curatorial design as an emerging practice at the intersection between spatial practice and digital mediation, interpretation and exhibition design, engaging visitors with mixed-media experiences in increasingly technologised museum environments. *'Enchanted Teleidoscopes'*, the title of the thesis, is used to introduce the context of curatorial design practices within the vast realm of digital applications, including the physical computing, interactive interfaces populating the museum space. 'Teleidoscopes' are a kind of kaleidoscope with an open view, they are used for their potential to produce enchantment, mediate, reflect and refract 'objects' from the outer world within the museum's space. Objects, in this context, comprise the tangible legacy of physical artefacts, artworks, material records, buildings, monuments, landscapes, and the intangible heritage of oral histories, folklore, customs, language and knowledge that was inherited from past generations and kept for the future.

'Multimodal', is here utilised in its widest definition, encompassing the notion from HCI, that is the inclusion of multiple sensorial modalities such as the haptic, visual, auditory and kinesthetic in the interaction with a system, as well as from semiotics referring to the multiple resources available in communication, such as the verbal, the visual and the textual. These resources of communication are defined by different semiotics modes, which contribute to create a meaning-making system, such as language, colour, gesture, quality of voice,

typography, spatial resources and so forth. The focus of the thesis is on the medium through which these modalities are materially realized.

Posing questions on how to make heritage relevant for our present, and thus mediate it into lived experience, I look at current artistic practices that choose the archive as a source material for their interventions. Situating their works in the archive, the repository of collective memory for Western culture, artists such as Raphael Lozano-Hemmer, Mona Hatoum, Christian Boltanski, Doris Salcedo and the Otholit Group are renegotiating heritage, experience, the body, thereby re-connecting past and present.

2 Theoretical context: new museology, digital media and experience in museums

This chapter examines current themes in museum studies and museum making practices by developing an overview of the theoretical background concerning the discourse on new museology. Current reflections and questions concern the changing role of the museum in a multicultural society and age of migration and its potential to perform as a 'contact' zone interfacing histories, identities and cultures, thereby acting as a 'differentiating machine'. It goes on to explore current themes and problems in museum studies and practices, discussing concepts within the contemporary curatorial practices of major contemporary art events and Biennale. These concern participation, intimacy, authorship, the cultural and social impact of travel and mobility, migration and interactions between art and civil society.

Curatorial design and the impact of digital media on interpretation and the art of exhibition

This sub-chapter examines the role of new media in museums, their role in expanding museums' reach and range of activities, as well as possibilities for interpretation, exhibition, social interaction and cultural production beyond the museum itself. Looking at current discourses on digital heritage, design and emerging technologies in museums, this subchapter examines the wide range of applications and possibilities opened up by technology for interpretation, mediation and access, their impact on visitor's experience, learning, immersion and engagement.

It draws a parallel between the baroque aesthetics of *Wunderkammer* and digital displays, in the way objects and artefacts are assembled and related and the role of viewers in creating these connections, thus exploring the further potential of 'interactivity' within museum-based interaction to renegotiate the role of visitors as meaning makers, their agency in the interpretation process, narrative and sensory space. In the increasingly mediated museum, existing tensions between mission and market problematise the role of new media raising issues concerning the museum as an 'experiential complex'. Questions are posed as to how curatorial design can mediate authenticity, presence, negotiate meaningful experiences and interactions between objects, places, people and cultures within the museum.

3 The quest for experience: Developing an argument

This chapter explores 'experience' as a new territory for curatorial design, drawing on Giorgio

Agamben's speculations on experience as a profanating procedure, a freeing action of returning things from the sphere of the sacred – the sphere of spectacle and consumption – to the common use of man. This introduces the research argument which revolves around the renegotiation and reframing of experience in museums and the role that digital media can play in the process. The thesis reflects on the role of experience in museums and the inherent ambiguities and paradoxes of adopting experiential, playful and participatory approaches to the interpretation of problematic and contested topics within museums and heritage sites. The argument of the thesis is an exploration of the possibilities opened up by interactive media and physical computing to negotiate an embodied experience with the past, the 'Other', with ourselves and our memory. Questions are posed as to how curatorial design practices can enable strategies of embodiment, sensorial engagement and participation that facilitate intimacy and difference with problematic topics, representation of counter-histories and marginal memories.

The main concern of the research is the impact of digital technologies and their capacity to augment and/or simulate sensory engagement and embodied experiences as new ways of knowing, about the world, others, ourselves. The thesis argues that this way of knowing can be facilitated by curatorial design practices that utilise an integrated approach to spatial design and digital mediation enabling multisensory engagement through spatial, narrative and sensory forms.

The research case studies are here presented as curatorial design practices offering a unique, distinct perspective from which to look at the way curatorial design can mediate, spatialise and embody museological data in sensory and narrative forms. Two case studies analyse existing practices in the field, three develop my own works. Each case study analyses from a critical perspective the strategies adopted to renegotiate aesthetic experiences, affective and embodied interactions between present and past and look at the quality of the experience, its effect on time, space, and the body.

4 Methods and interpretive framework

In a methodological framework of performative research, the researcher's positionality and engagement with the context of the research is acknowledged as an essential element of the research's inquiry. I use choreography as a metaphor to examine my role within the field of study, with the bricolage intermixing choreographed and improvised methods forming the research's experimental ground. In the context of practice as research, methods are concerned with the exploration of interpretive approaches within curatorial design practices developing physical and online interfaces, digital applications, multimedia environments, and responsive exhibition spaces. A mix of situated, emergent and more established ethnographic methods, combining first hand accounts, audience studies, auto-ethnography and discourse analysis are employed to uncover curatorial and design strategies that can renegotiate intimacy and engagement with problematic topics such as counter histories of war and migration heritage – as in the case of the *Museum of Italian Resistance* and '*Belongings*', the translation of Hindu place-bound mythologies and narratives to Western audiences – *Place Hampi*, the sense of

belonging and identity in relation with local history and community intangible heritage – in the case studies of Liverpool's *'Living Streams'* and *'Resonances'*.

Developing an interpretive framework

Given the specificity of its field, the research develops two theoretical threads running throughout the research in an open-ended, ongoing inquiry that entwines theoretical and practical tracks. These construct the research's interpretive framework, embracing more universal concepts relevant to the research problem of thinking about time, the past and memory, our ways of being in the world, the way we relate to the 'Other', how we negotiate difference, the ways knowledge is produced, how we generate meaning and the role of the body and senses in the process.

Knowing the 'Other': Difference and Intimacy

This thread is central to the idea of the museum in a multicultural society and age of migrations, its role as a 'differentiating machine', and performative contact zone between 'other' cultures and histories. Interpretive potential of silence and touch is here discussed from a theoretical perspective as vehicles of empathy, engagement and necessary elements in mediating difference.

Aesthetic knowing: Objects, Body, Senses

This thread explores ways of knowing and generating meaning, the role of the body and senses in the process, how we relate to the outer world, objects and places and their role in keeping knowledge.

The researches' significance and contribution is found in the connections it opens up between these domains and the significance of the questions on the role of curatorial design practices in negotiating the questions through an ongoing interplay between the researches' theoretical and practical tracks.

5 Introducing the practices

In the form of an introduction to the research practices I examine the context wherein the case studies are situated, that is the museum in the electronic age. In this introduction I discuss relevant concepts and emerging discourses pertaining to the electronic museum, here understood as an 'ecology', and thus looking at how technology is transforming physical and social interactions and the role of participatory and interface design in this transformation.

6 Museum of Resistance

This chapter examines curatorial strategies, spatial practices and digital mediation of the heritage of the Resistance movement in the provinces of Massa, Carrara and La Spezia within the Audiovisual Museum of Resistance developed by Studio Azzurro.

Dynamics between authors, audiences and the participants of the Resistance movement are

examined through analysis of texts, my experience of visiting the museum, interviews and conversations with the designers, curators and historians who took part in the interpretive and production process. Investigating the museum's approach to oral communication as the leading aspect of curatorial design opens up questions on the role of orality in maintaining and translating cultural heritage, enabling intimacy and mediating difference. This is also reflected in the possibilities that the project opens up for designers to reconsider their work, looking at how, in this project, this thinking was carried on throughout their practices, proposing a new way of conceiving museums as participatory platforms that can mediate more empathic interactions with cultural memory.

7 Place Hampi: Immersion, place, embodiment

Place-Hampi is a modular interactive cinema experience that engages audiences with embodied participation in the drama of Hindu mythology within the World Heritage site Vijayanagara (Hampi) in South India. The study delves into the design and curatorial strategies adopted to create an aesthetic experience for a virtual traveler exploring Hampi's sacred heritage site. Hampi is a place where history, the natural environment, mythology and everyday cultural practices are closely intertwined. Problems related to the translation of this place-bound knowledge, multi-inhabitation and situated/culturally charged memories from Hindu mythology to Western audiences are explored in order to understand the concerns that are intrinsic to this kind of mediation. This case study looks at how curators, designers, historians and practitioners have approached problems concerning cultural mediation, co-presence and technological simulation by virtually dislocating the Hampi site – together with its context-specific heritage – and the way embodiment and kinetic engagement are conveyed through a performative exploration of a dislocated virtual Hampi.

8 Belongings: A sensory experience of Australia's migration heritage

Belongings post-WW2 Migration Memories and Journeys, is a community oral history project and web site exhibition developed by the NSW Migration Heritage Centre between 2005 and 2009 which brings to life more than 150 oral histories from former migrants who arrived in Australia after the Second World War. Personal stories are told through people's memorabilia and special belongings that accompanied migrants in their life-changing journey to another country. The first exploration using of my own work, *Belongings* materialises the possibility to direct more specific questions driving the research into an artistic and curatorial practice. The rationale behind this exploration is the translation of migration memories and the belongings associated to them from a web-based experience to a responsive gallery space. In a collaborative way, I conceive and develop strategies of embodiment through object handling and affective interactions between sound and touch in the design of a tangible interface mediating this heritage of migration.

9 Living Streams: The making of a cultural interface connecting place, history and community

The second curatorial design practice developed by myself as a project coordinator explores ways of 'making locality' through the conceiving, development and performative application of Augmented Reality and location-based technologies in the area of the Georges River in Liverpool, a municipality within the Greater Sydney metropolitan area. The project is situated in the dialectic between a global-connectedness enabled by mobile communication and the place-bound locality of the river, its natural and cultural heritage. Using specific methods related to mapping and locative media, the project exposes the strategies adopted to renegotiate experience of, and engagement with, the river's heritage through interactions between place, histories and community.

The first part of the chapter looks at the making of Living Streams as a participatory cultural interface, the actors involved, and the implementation of engagement and outreach strategies within Liverpool's communities.

The second part critically reflects on the project's outcomes and findings looking at their capacity of developing innovation, cultivating technological imagination and fostering new collaborations within Liverpool's locale and beyond. Questions are also posed regarding the project's sustainability, asking how engagement and responsibility can be carried on into the future.

10 Resonances: People, objects and stories of Liverpool

The last case study develops a permanent exhibition at Liverpool's Regional Museum interpreting the museum's diverse and heterogenous collection consisting of historical photographs, oral histories and artefacts from working, domestic and everyday life, industrial heritage and family history.

The exhibition portrays the lives of people through the objects they donated to the museum in the last 50 years. Curatorial design strategies are concerned with ways to reach beyond the memory space of the donor, to a larger world, evoking in viewers common memories, shared meanings and collective histories of Liverpool.

Arranged as a cabinet recreating a room within a room, the collection can be browsed performatively by visitors. Illuminated trajectories across the exhibition displays materialise the choices of visitors and their sorting actions exploring Liverpool's heritage. This case study critically examines convergences and discrepancies between conceptual and development stages of the design, the role of curators, designers, heritage managers in the co-authorship of the work, and reflect further on possible strategies engaging Liverpool's citizens not only with a museum experience but also rethinking the museum as a site of interpretation and cultural production of new memories.

11 Reflections

This chapter re-connects relevant findings and situated knowledge produced in the research practices to current and ongoing questions, themes and investigations within the discourse of new museology and museum making, acknowledging existing tensions arising from emerging

theories of participation. Shifting and reframing the performative, embodied knowledge that has been produced in the case studies, this chapter attempts to systematically breaking down the 'movements' flowing between theory and practices and reflect on their transformative potential for the forming and articulation of the 'zone of contact'. This zone embodies the encounter that curatorial design practices in the multimedia museum can enable.

Reflections on the research findings examine how the practices respond to new challenges of museums in an age of migration proposing curatorial and exhibiting strategies enabling difference and intimacy. This attempts to formulate a provisional guideline for practitioners in the field, bringing together the theoretical and practical outcomes of the research in a systematic manner. Rather than aspiring to completeness or conclusion, these reflections are only tentative and partial, and therefore open to the contributions of other practices and other perspectives, and thereby in a constant process of being transformed. In this chapter, which is important as it also marks a physical dislocation – or perhaps relocation – of my self from Australia to Europe, I describe my encounter with the Holocaust Gallery at the Imperial War Museum in London. The experiences illustrate in a performative way the directions outlined in the capacity for curatorial design practices to enable the integration of social and cultural responsibility with the power of aesthetics.

List of tables from online and other external sources

3.0 The Quest for Experience

Image 1 *Visitors at the Louvre: some engage directly with the art while others take pictures of pictures*
Author: Michael Kimmelman
Published by Valerio Mezzanotti, 'At Louvre, Many Stop to Snap but Few Stay to Focus', August 2, 2009, New York Times.
Retrieved from http://www.nytimes.com/2009/08/03/arts/design/03abroad.html?_r=0

5.0 Introducing the practice

Image 1 *The five senses*
Retrieved from <http://www.kringelbach.dk/skulptur.html>

Images 2,3,4 *Rebecca Horn, Scratching Both Walls at Once*
Retrieved from <http://we-make-money-not-art.com/archives/cyborgs>

7.0 Place-Hampi

Image 1 *Place-Hampi, 3D model*
Retrieved from <http://icinema.edu.au/projects/place-hampi/>

Image 2 *Place-Hampi, Navigation through the stereo- scopic panorama*
Retrieved from <http://icinema.edu.au/projects/place-hampi/>

Image 3 *The making of Place-Hampi. Ambisonic sound recording on site*
Retrieved from <http://icinema.edu.au/projects/place-hampi/>

Images 4, 5 *Place-Hampi, 'Magical Realism'*
Retrieved from <http://icinema.edu.au/projects/place-hampi/>

8.0 Belongings

Image 1 *Chafic Ataya: Binoculars, Self portrait*
NSW Migration Heritage Centre Archive, Powerhouse museum
Retrieved from www.migrationheritage.nsw.gov.au/exhibition/belongings/ataya/

Image 2 *Ana Fox: Wedding photo, Self portrait with hat*
NSW Migration Heritage Centre Archive, Powerhouse museum
Retrieved from www.migrationheritage.nsw.gov.au/exhibition/belongings/fox/

Image 3 *Jacqueline Giuntini: Family knife, Self Portrait*
NSW Migration Heritage Centre Archive, Powerhouse museum
Retrieved from www.migrationheritage.nsw.gov.au/exhibition/belongings/giuntini/

Image 4 *Helen Sowada: Koala bear, Self portrait with koala*
NSW Migration Heritage Centre Archive, Powerhouse museum
Retrieved from www.migrationheritage.nsw.gov.au/exhibition/belongings/sowada/

9.0 Living Streams

- Image 1 *Where are you?*
Retrieved from: <http://www.google.com/imgres?q=where-are-you&um=1&hl=en&client=safari&rls=en&biw=1362&bih=802&tbs=isz:m&tbnisch&tbnid=1FHFFqiXqsMSEM:&imgref>
- Image 2 *You Are Here.*
Retrieved from <http://www.google.com/imgres?q=you-are-here+neo+light&um=1&hl=en&client=safari&rls=en&biw=1362&bih=802&tbnisch&tbnid=T5o9weKF1YpEVM:&imgref>
- Image 3 *You Are Here Now*
Retrieved from <http://sassafress.typepad.com/.a/6a00d83451e78d69e2016763944144970b-pi>
- Images 4, 5 *MoMA Augmented Reality, 9 October 2010*
Retrieved from www.sndrv.nl/moma/
- Image 6 Stefano Arienti, *I Telepati*, Fondazione Zegna, Trivero, Italy.
Retrieved from www.fondazion-ezegna.org/all-aperto/
- Image 7 Matthias Gommel, *12 Films*, ZKM Institute
Retrieved from www.botaniq.org

10.0 Resonances: People, Objects and Stories of Liverpool

- Image 1 *Ex Voto Chapel*, Altotting, Germany
Retrieved from <http://fotoalbum.virgilio.it/konga/200712germaniaaustr/200712germaniaaltot-2.html>
- Image 2 Photograph by Davide Papalini, *Ex voto chapel at Santuario della Creta*, Castellazzo Bormida, Piedmont, Italy, 29 August 2010. Retrieved from http://commons.wikimedia.org/wiki/File:Castellazzo_Bormida-santuario_della_Cretacappella_ex_voto4.jpg
- Image 3 Photograph by Benjamin Mercer, *Paper prayers tied on string at a Japanese Shinto Shrine in Kyoto*, 2006. Retrieved from www.123rf.com/photo_667020_paper-prayers-tied-on-string-at-a-japanese-shinto-shrine-in-kyoto.html
- Images 4,5 Photographs from the exhibition '*Plural Stories*', at the Guatelli Museum, Reggio Emilia, Italy, evocatively displaying utensils from rural culture and everyday objects.
Retrieved from <http://fondazione.ismu.org/patrimonioeintercultural/index.php?page=esperienze-show.php&id=46#>
- Image 6 Photograph by Kate Hartman, *Muttering Hat*, exhibited at *Talk To Me*, MoMA. The two "muttering" balls can be placed over your ears to 'extract' the noise of your thought process and translate it into physical world.
Retrieved from www.moma.org/interactives/exhibitions/2011/talktome

11.0 Reflections

- Image 1 Droog Design, *Tree-trunk bench*. An example of hybridisation of the natural and the artificial. Retrieved from www.droog.com

ENCHANTED TELEIDOSCOPES



1.0 INTRODUCTION

Interest, motivation and personal background

When asked what I do, I often hesitate to give an immediate answer. It might be that I provide a different answer according to who is asking the question, defining myself accordingly as an 'architect', a 'designer' or, more specifically, as an 'exhibition designer', a 'curator', or a 'branding or experience designer'. None and, at the same time, all of the aforementioned labels describe the nature of my practice, which encompasses an integrated approach to 'experience making' in different contexts ranging from museums, to retail, to entertainment, to interior spaces.

The desire to create a meaningful experience around places, objects, buildings and information is the common thread running through what can appear as separate fields of practice: spatial and interior design, graphic design, communication, interaction, and integrating them in an organic manner. The capacity of a designer to interpret a place and therefore to create an experience of that place that is memorable and engaging can affect and transform our relationships with places, the people we connect with, as well as our relationship with the knowledge of that place.

With a background in architecture, very early in my undergraduate studies I began developing a set of interests around nomadic and settled cultures, and their differences in marking and inhabiting space, and I began to see a potential for design to foster changes in the way the nomadic model – which embraces values of uncertainty and variability – could become a sustainable paradigm around which to construct a more sustainable future.

Technologies of miniaturisation, networked spaces, smart materials, the ubiquity and pervasiveness of the digital world, the way we access information and are all connected to one another are some of the radical transformations that we have experienced in the last decades

and are now part of our daily life. These cultural, social and technological changes embracing and negotiating complexity seem pointing towards the 'nomadic' as a paradigm leading into a more sustainable development improving the way we relate with our environment.

Nomads and settlers have different visions of the world: the latter marking the terrain and establishing the city, the former traversing space and possessing only that which can be carried along their journey.

From the fascination with the nomadic, and the possibilities opened up by technology for designers that favour a knowledge, event and experience-based economy, my interest shifted from the design of objects, artefacts and buildings to that of experience, and the immateriality of relationships between things and information, places and their histories. As a consequence, my nomadic peregrinations over the globe brought me to visit the nomadic country par excellence: Australia.

A research project always originates from an existential question, rather than an intellectual one. After being in Australia for a time, and choosing the country as my home, I engaged in an exploration driven by the desire to understand the place and culture. Knowing a place is a reflexive act, an existential experience of recognising how a place can affect us, physically, culturally and emotionally.

A first series of research practices I began in Australia had to do precisely with this sense of discovery as they involved walking and mapping. *Mapping Footprints, Lost Geographies in Australian Landscapes* investigated contemporary perceptions of geography and the relations between landscapes, cultures and places which have been opened up by location-aware technology. They looked at the potential of maps to mediate a sensual, embodied experience of place, by way of establishing orientation and getting lost.

I became interested in the potential of maps as instruments to negotiate instability, belonging and subjectivity, to reveal what was no longer there, the indigenous geographies together with their place-names, and the cultural practices that have been eradicated with the invasion of Australia. At the time locative media was an emerging media form, combining the potential to intersect location and information through mobile and portable devices. I was interested in the potential of this media to sense place, to address 'site' in such a way as to un-fix relationships between the present and the Aboriginal past of the land, its absent presence. Archival stories, the intangibility of the heritage that imbues place with meaning and knowledge, objects, historic sites, rock engravings, all of this became the material of my research.

As my relationship with Australia began to settle into a more permanent cast, my interest evolved from learning about the Aboriginal heritage of the country to knowing about the heritage of

migration, which contributed to creating contemporary Australia. This interest initiated and drove my current research, which delves into the legacy of the heritage of migration and using as a starting point the life stories of migrants, their belongings, objects, cultures, and customs, together with the values they brought to Australia and which contributed to create Australia today. Migration is a condition which, however different the experience of being a privileged migrant in the new millennium, I could relate to my own situation.

The initial encounter with a collection of memories, stories and objects that belonged to people who migrated to Australia after World War II steered the development of this research together with the questions that unfolded about how these memories could be heard, the objects seen and touched, how to transpose them from a web space and digital archive. This also involved where they would be displayed, their potential settings in exhibition spaces, and how to create an experience that involved listening, touching and handling.

From this project a series of research practices were initiated and began to build a body of work into curation and experience design based around tangible and intangible heritage in Australia. These practices constitute the experimental grounding of this research, wherein my integrative and holistic approach to curation and design can be performed and tested.

Rather than case studies, they are lived experiences in their own right. Each of the research practices contributed in a unique and significant manner to its form, strengthening and renegotiating relationships with places as well as the people, communities and cultures I encountered, allowing me to connect with the place I lived in and engage with its locale.

1.1 Why teleidoscopes?

A teleidoscope is a form of kaleidoscope that has a lens and an open view. They are used to form kaleidoscopic patterns from objects outside the instrument itself. I use the image of a teleidoscope to introduce the context of the research. My research and practice in museums explores mediated environments in museums, here referred to as 'multimodal interfaces' given their potential to reflect and refract 'objects' from the outer world and to translate them within the time and space of the museum. Objects, in this context, comprise the tangible legacy of physical artefacts, artworks, material records, buildings, monuments, landscapes, and the intangible heritage of oral histories, folklore, customs, language and knowledge that was inherited from past generations and kept for the benefit of future generations.

Why enchanted?

The anthropologist Alfred Gell described the various arts as "components of the technology of enchantment", this being "the power that technical processes have of casting a spell over us so that we see the world in an enchanted form".¹ Art, he argued, operates to create illusion and to "ensnare people into unwitting reaction"².

In order to clarify what I mean by the transformative procedure through which the teleidoscope operates in this context, I describe in the paragraph that follows my first impression of visiting the Museum of Italian Resistance in Fosdinovo.

The museum, which is dedicated to the preservation and dissemination of the memory of the Resistance movement in the provinces of Massa Carrara and La Spezia, brings to life through interactive installations the memories of those partisans, peasants, deportees, inmates and women who survived Fascist and Nazi domination. The museum represented my 'gateway' to the living heritage of the Resistance movement, a history which I never had the chance to experience first hand, as I only held a scholastic knowledge of the 'facts'. This heritage is still contested and unresolved.

First impressions of visiting the Museum of Resistance in Fosdinovo, 25 July 2010:

I drive from Carrara on a winding, narrow mountain road. The museum is located in a traditional brick country house, with a small front yard overlooking a valley, all surrounded by the Apuans Alps. Entering through a porch I find myself suddenly immersed in history. A series of screens hanging from the ceiling show the portraits of people, men and women. They are all elderly. Their faces, out of scale, lined up one next to the other, fill the space with presence.

The museum consists of one room, with a table in the centre. On the table are several books. Dimly lit, they are immediately visible in the darkness. There is a book of partisans, of women, of the deported, of peasants. Touching a book activates a projection on the screen above: the story begins. Suddenly, my gaze is attracted by the portraits as if they were coming alive. They are potent and real. Something in their expression suggests authority, inducing a sense of respect. I dare not taking my gaze off their eyes. The stories last one minute or so. I don't have a sense of time when listening, but a feeling that I want to hear more. So I need to

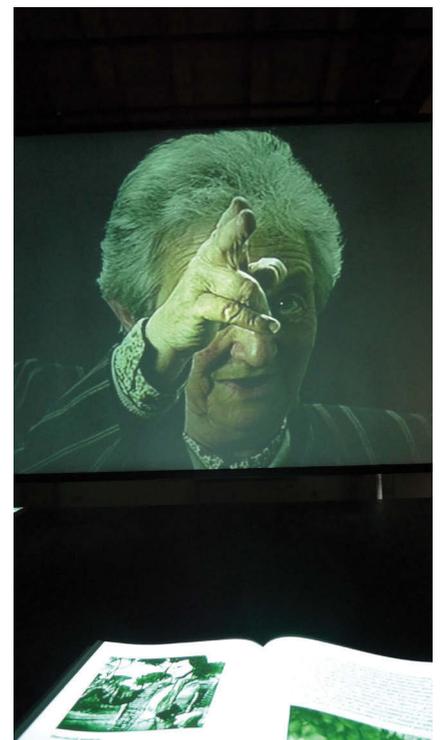


The Audiovisual Museum of Italian Resistance, series of photographs by the author, July 2010

touch the book again to continue the story. Voices surround me, their echoes rebounding on the brick walls of the room. A woman tells of her experience when visiting a hospital before the war. Back then, she could not bear the sight of patients and sick people. During the war, she volunteered at the hospital in Carrara. Living face to face with suffering on a daily basis made her grow strong. She took care of people who had been wounded by mines, who had amputated limbs. Her voice reveals pride and tenacity, and so does her face. I saw in that woman the girl, transformed by the challenges and battles she had fought in her youth. I saw in that woman the proud and fearless girl of the war days. I feel a sense of trust, perhaps due to the fact that those speaking to me are real people, whose voices are not trained to speak in public. However hesitant and stumbling, their voices tell personal, true stories. Somehow, there is a sense of being involved in a conversation. The interaction with the book delivers a syncopated memory, which somehow breaks up the narrative. I wished it could last longer. As I found myself immersed in the story I also discover a sense of place: the stories I hear told about that place in the mountains, the valley. Suddenly I feel I was standing in a site of memory.

With its bare interior setting, timber tables occupying the room, dim light and text kept to a minimum, the spatial design emphasised the presence of participants of the Resistance elevated here – also in a literal sense as the screens were set up above the eye’s gaze – to the role of historical protagonists.

The museum mediated my first experience of the living heritage of Resistance. Performed as a teleidoscope, the design of props, interactive books and screens, light and interpretative text, all coalesced to transform the raw material of personal life stories. These stories, which could appear as marginal memories, became a deeply affective experience, a narrative and sensorial environment that was capable of moving and transporting me to the time and places in which the stories were experienced. The power of this artistry crafted teleidoscopes that ensnared me with their magic.



The Audiovisual Museum of Italian Resistance, series of photographs by the author, July 2010

1.2 Archival Memory

As with the oral histories displayed at the Museum of Resistance, every place holds a heritage of stories to listen to. Libraries, archives, public and private collections are the physical repositories of our collective memory. Writing on *Erasure*, an artwork by Dinh Q. Lê, Zoe Butt, co-director and curator of San Art in Ho Chi Minh City, discusses archival practices and the struggle against forgetfulness:

The chaos of debris and human remnants on the floor, objects symbolising the silent voices of the victims, visually challenges the repetitive violence in the video image. (W)e are forced to contemplate the aftermath of conflict, to register the slow disappearance of evidence into classified systems, where the experience of loss, together with its associated objects becomes buried in collections that are predominantly removed from public historical consciousness. While respecting the role of archives in providing a record of social memory, the artist is concerned with how that history is activated and re-engaged within a larger collective memory for future generations.³

The archive, from this perspective, can be looked at as a place where memory is preserved and buried at the same time. Playing on this tension between preservation and forgetfulness, the archive is also a place where an increasing number of artists, collectives and researchers are establishing their practices and deploying source material for artistic interventions.

Situating her practice within private and public collections at the London Women's Library, Mia Jankowitz discusses two fundamental texts when thinking about the archive: Freud's mystic writing pad, and Derrida's *Archive Fever*:

In a 'Note Upon the Mystic Writing-Pad' (1925), Freud describes the children's toy note pad on which a sheet of plastic is laid over a lower layer; when you make writing on this sheet using a stylus, the plastic sticks to the lower layer, making the writing visible. When you raise the plastic sheet the writing disappears; however, the lower layer, not visible to the eye, retains all traces of writing. You could say that it is the moment of contact between the upper layer (the perceiving membrane) and the lower layer (the recording membrane) that is essential to the act of archiving and memory. In Derrida's case, faced with the thought of the moment 'proper' to the archive in his introduction to *Archive Fever* (1995), he designates as the moment of selecting 'save' on his Apple computer; again the moment that the perceiving meets with the memory function"⁴.

1.3 Opening up the Archive

Listening in – and to – the archive opens up a number of concerns and issues related to philosophy, aesthetics, technology, environments, memory, history and the body. Preserving oral history in this instance has been very important in recording the experiences of people and communities who might otherwise be excluded from mainstream history. Collecting, preserving and exhibiting oral history is a practice that gives invaluable insights into the construction of historical consciousness and subjectivity. Does history have a sound? And what does the past sound like?

My curatorial design practice develops responsive interfaces that aim at mediating and spatialising archival heritage within the exhibition space in ways that strive to be experiential, engaging audiences in the narrative space of the exhibition, be this a gallery space, an outdoor setting, a landscape or a combination of onsite and online space. In this sense, I consider the interface as an electronic ecology of people, technology and interaction, encompassing all the physical and digital environments, media display, signage, navigation and interior settings that are part of the exhibition complex.

I am interested in the way the interface can interpret meanings and mediate the experience of the archive, the role of the audience in activating this and the dialogue it creates between objects, histories, people and places. I look at the role of the interface for its potential to interpret and transfer the ‘presence’ of the past, enabling a subjective and affective knowledge of the things we preserve, namely our heritage. I explore how this can open up a dialogue with the records we preserve from the past, unfixing ways of cataloguing and exhibiting historical records. How can we design museum interfaces in such a way as to create an embodied and affective experience of the past? How does the interface work in the process of subjectivisation, intimacy and construction of the self? What is the role of interactive media in facilitating the encounter and somehow the appropriation of that past?

Many artists and designers working with archives suggest that a way of keeping the past is to creatively and critically transform it, manipulate it, in order to re-invent it and translate it into the everyday. Transforming what is there to create something new entails a constant remapping of different signs, languages and codes. This merges, interlaces and remaps different iconographies, symbols and signs that belong to a wide range of aesthetic and stylistic registers. New media, given its pliability in integrating different languages, formats and modalities of communication, suits this recombination very well.

The archive has been a constant source of inspiration for artists, designers, researchers and practitioners, who are establishing in the archive the source material of their artistic interventions. Artists like Sophie Call, the Otolith Group, Doris Salcedo, to mention just a

few, are concerned with the tension between preservation and forgetfulness that the archive holds. Their works engage with practices of listening to the archive, re-engaging with the collective memory that the archive holds, and give it voice, identity and transfer it into the everyday. Boltanski explains his struggle to return names and stories to the records that archival procedures have de-identified, isolated and separated from their context.

The works of these contemporary artists negotiate an embodied, intimate experience of the archive, against the slow disappearance of records into classified systems, where the experience, together with its associated objects and data, is buried in collections that are removed from public access, their cultural context and wider use.

Raphael Lozano Hemmer, the renowned electronic artist, always emphasises the role of the audience in the co-authorship of his works. The materials of his works are based on the participants' recorded voices, the tracking of their surveyed movements across space, and the rhythm and pulsation of the heart. Boltanski's *Les Archives du Coeur* and Hemmer's *The Pulse Room* collected and interpreted the intangible heritage of biological data related to the heart rate, and representing it in spatial and sensory forms.

Chantal Won, head of strategy and special projects at the Asia Art Archive in Hong Kong considers the archive as a method of enabling different conversations, de-centralising production of knowledge and allowing for micro histories to be written. Reversing the de-territorialising power of the archive, artists are now engaged in socialising practices of the archive, re-envisioned here as a miscellany of individual stories capable of diluting the dominant and challenging the way knowledge is produced.

1.4 Responsibility

My research and practice locates its milieu at the intersection between spatial design and digital interpretation, our heritage of stories, images, artefacts, sounds and everyday experience. Transcending compartmentalised fields of interaction, exhibition, interior and multimedia designs and interpretation, it encompasses an integrative and multidisciplinary approach to curating cultural heritage. 'To curate' means to take care. Positioning the practice at the intersection between the archive and everyday experience requires a new set of 'rules', a new sensitivity and empathy on the side of the curator/designer that allows us to speak to the intimacy of the audience, as well as assuming the responsibility to make stories public. Interpretation carries responsibility. The spaces we design and the interactions we enable are not neutral. They are responsible for the meanings we project on them, they can give voice to a community, a person or a culture, while also being a mediating presence in the museum. Spatial setting, exhibition displays and span of media we employ in the design of spaces are narrative and sensorial, cooperating to create a performance wherein audiences can actively encounter a living past. This encounter can be looked at as a threshold, a site of conflicts where tensions

between spectacle and everyday life, individual and collective memory, personal stories and mainstream history are always present. It also harbours a conflict between differing modes of communication – including the visual, the oral, the textual, the tactual, the kinaesthetic – that multimediality does not resolve, yet allows to co-exist:

The art of storytelling is reaching its end because the epic side of truth, wisdom, is dying out. This, however, is a process that has been going on for a long time. And nothing would be more fatuous than to want to see in it merely a “symptom of decay,” let alone a “modern” symptom. It is, rather, only a concomitant symptom of the secular productive forces of history, a concomitant that has quite gradually removed narrative from the realm of living speech and at the same time is making it possible to see a new beauty in what is vanishing.⁵

There is a need on the side of the curator/artist/designer to be an attentive listener and interpreter of the different voices and stories entering the museum. As the art of telling stories is removed from people’s experience in their daily lives, can the museum become a place where this art finds a new language and a suitable space to negotiate new forms and agency?

1 Gell, A., 1992. The technology of enchantment and the enchantment of technology. In J. Coote & A. Shelton, eds. *Anthropology, Art, and Aesthetics*. Oxford: Clarendon Press, p. 163.
2 Ibid, p.163
3 Butt, Z., 2011. *Dinh Q. Lê Erasure*, Paddington NSW: Sherman Contemporary Art Foundation, p.33-35.
4 Jankowicz, M., 2009. *Polished-up notes for a panel discussion*. Paper presented at the Women and the Archive: A Partial Disclosure.
5 Benjamin, W., 1999 (1st Ed.1969). The Storyteller. Reflections on the Work of Nikolai Leskov. In *Illuminations*. New York: Schocken, pp. 83–109, p.86

2.0 THEORETICAL CONTEXT

NEW MUSEOLOGY, DIGITAL MEDIA AND EXPERIENCE IN MUSEUMS

The theoretical background presented in this chapter aims to establish the context of the research by introducing relevant themes within the current discourse on new museology, thus bringing together in a dialogue those scholars and practitioners who contribute to the discourse together with examining the questions they open up for museum studies.

Research on the museum encompasses a wide range of disciplines across various domains including arts and social sciences, cultural studies, design theory, anthropology, visual culture, phenomenology, ethnography, education, art history and curatorship.

Rather than aiming at presenting a comprehensive overview of the current debate on contemporary museology, this chapter provides a perspective from which to begin exploring the role of museums as zones of contact between spaces, cultures and the role played by technology in mediating and facilitating this contact.

Tony Bennett's reflections on museums as 'differentiating machines'¹ outlines the milieu of the research investigating the changing role of museums in a contemporary multicultural society. James Clifford's definition of 'contact zones'² and the discourse on current interdisciplinary and transnational research projects in Europe, such as the *EuNaMus*, contribute to further explorations of the role of museums in 'an age of migration'³.

The impact of digital media in museums is introduced by looking in particular at the implication and opportunities for mediation, access and experience made available by digital technology, and how this negotiates new approaches for curatorial design and the art of exhibition. Finally the research problem is introduced proposing a reflection on experience and the experiential economy of the museum complex.

2.1 Introducing new museology

New museology explores the shift in the perception of the museum which occurred in the last thirty years. During the last decades the museum changed from an institution whose purpose was to collect and classify knowledge in order to educate the public, to what Michelle Henning refers to as a 'media-form'⁴. Eilean Hooper-Greenhill contributes to the further understanding of the changing roles of contemporary museums "from the modernist museum as a site of authority to the post-museum as a site of mutuality"⁵. The growth of this field of study acknowledges the extensive contributions of Bennett⁶, Duncan⁷, Pearce⁸, Hooper-Greenhill^{9,10} and Witcomb¹¹, among others.

Drawing from Homi Bhabha's reflections on the narratives of nations, Dipesh Chakrabarty proposes that this shift is connected to the evolving relationship between museums and democracy which has emerged from the shift between the 'pedagogic model' and the 'performative one'¹². The performative model, according to Chakrabarty, "privileges the lived" experience as well as the "embodied, sensual imagination and reasoning" one¹³. In "this re-orientation to the realm of the senses"¹⁴, memory and experience work within the same sphere, and they are consensual rather than oppositional.

The art theorist Jill Bennett, investigating the relations between senses, memory and traumatic experiences, argues that experience of a museums' objects is something "in a very palpable sense 'felt' rather than merely observed"¹⁵. Introducing the exhibition *Art and the Archive* Kit Messham-Muir reflects further on the physicality of objects and the involuntary sensory memory they trigger through smell, taste, texture and presence. "Importantly", he argues, "sensory memory is different from the remembering of linear narratives; sensory memory involuntarily conjures vivid past events into the present"¹⁶.

Analysing a series of accounts of museum and heritage practices, Ivan Karp looks at the kind of interpretations that takes place as "people connect their own experience and concerns with exhibitions, collections, memorials and so forth"¹⁷. According to Karp, a number of tensions arise as "museums are becoming global, thus remodelling themselves, and renegotiating among various spheres of involvement and identity"¹⁸.

Audience studies look at a museum's visitors as meaning-makers and interpreters of the exhibition. Matthew Trinca and Kirsten Wehner describe the museum space as one which is activated by visitors as a performance space and where they act as flâneurs, performing at the same time as "detached observers (as well) as looking for immersion"¹⁹. The dynamic between audience and objects is a relationship that, according to Messham-Muir, has to do more with affect rather than with cognitive and rationale understanding. Technology plays an important role in the way "it complements affective modes of communication" in museums. Messham-Muir argues, however, that "very rarely museums combine affect and technology"²⁰.

Analysing a series of accounts of museum and heritage practices, Ivan Karp looks at the interpretations that take place as "people connect their own experience and concerns with exhibitions, collections, memorials and so forth". According to Karp, a number of tensions arise as "museums are becoming global, thus remodelling themselves, and renegotiating among various spheres of involvement and identity"²¹.

2.2 Difference and participation

The European research project *MeLa* investigates the role of European museums in an age of migrations. Funded under the 7th Framework Programme, the project investigates opportunities for community building in an age characterised by the paradigm of migration, which is a key term for thinking of globalised processes, as well as the impact of mobility and nomadism on people, goods, ideas and knowledge.

The museum as an agent of memory representation and identity construction needs to respond to complex cultural needs from a migratory, multicultural and global society, which involves rethinking its role, mission, exhibition and communication strategies in terms of knowledge preservation, transmission and dissemination.

The *MeLa project* tackles issues of history, memory, identity and citizenship, and their effects on the organization, functioning, communication strategies, exhibition settings and architecture of museums.

The project takes a practical stance on discussing the role of museums that have engaged with 'difficult' and 'contested' topics about interpreting and exhibiting the history of twentieth century wars, atrocities, holocaust and dictatorships. Reflections on this matter can be found in Kjeldbaek²² and Holtschneider²³:

Questions of representation for ethnic, religious, marginalized, and other enclaves claim to be represented in museums. These communities have realized that museums are powerful instruments for creating a sense of belonging and an avowal of being in the world, and be represented as such²⁴.

The 2009 EU 7th Framework Programme, *"Reinterpreting Europe's Cultural Heritage: Towards the 21st Century Library and Museum?"*, conceived the future of European cultural institutions as based around the following key concepts: 'ownership'; 'participation'; 'democratic governance'; 'diversities and commonalities'; 'citizenship'; 'identities' and 'multiple coexisting cultures'²⁵.

In the last decades social and cultural studies have criticised the role of museums in representing heritage, generating debates about the importance of museums in mediating the "multivocal, multicultural and transnational perspectives which can have a significant role in building and representing inclusive and pluralistic society"²⁶.

The project considers museums in relation to places, territories and communities, posing questions on heritage, history, memory, identity and citizenship as they evolve conceptually, a process in a constant state of transformation.

Anticipating 21st century museums for transnational societies, Luca Basso Peressut argues about the need for rethinking museums at a point in time when "the great narratives of modernity have left a complex multiplicity of stories and voices"²⁷. Basso Peressut suggests that museums need to be constantly reframed, interrogated and monitored in order to become instruments for cultural development and the representation of both collective memories and

individual stories. As museums have always been “an expression of a particular time and place” they are constantly “subject to reformulation of meaning and role”²⁸.

Focusing on the need to explore and strengthen the connection between heritage, museums, libraries and archives, Basso Peressut explains how these institutions have performed over the centuries as the repositories of knowledge and reflections of the power of dominant groups, being responsible for “knowledge transmission, representation of history and shaping of identity”²⁹.

As Foucault discusses in his *‘Espaces Autres’*, these places can be looked at as “heterotopias of indefinitely accumulating time”, as they embody the “idea of accumulating everything, of establishing a sort of general archive, the will to enclose in one place all times, all epochs, all forms, all tastes”³⁰.

In more recent times, the postmodern perspective has undermined the possibility of interpreting the past as a linear narrative, and rather proposing an approach that explores its contradictions, transformation, discontinuity, rupture, disorder and chaos, as Nick Merriman points out³¹. Gregory Ashworth and John Turnbridge have proposed the concept of ‘dissonant heritage’³² in order to problematise the operation of interpretation, representation and reconstruction in the museum.

2.3 The inclusive museum

Museums are in a process of great transformation following the changes in our contemporary societies. Defined as ‘contact zones’³³, ‘contested terrains’³⁵ and ‘differentiating machines’³⁶, museums are renegotiating their role at the intersection between knowledge dissemination, memory building and development of social relations.

Basso Peressut notes an increased interest in local heritage as a response to the rapid transformation occurring in our contemporary society:

While the traditional sense of belonging to a nation/state is questioned, we oscillate between the increasing interest in local heritage as a means of territorial identification, and the participation in cross-cultural communities that are part of a transnational network of knowledge, interests and cultural offers³⁷.

For contemporary museums to transform themselves into what Bennett refers to as ‘differentiating machines’, there is a need to challenge “authoritarian and ocular centric form of didacticism that characterized the earlier organization of the exhibitionary complex”³⁸. The way museum and heritage practices operate as ‘differentiating machines’ is, according to Bennett, through opening up the museum space to the representatives of different communities by providing them with opportunities for “authoring their own stories, connecting exhibitions to programs of intercultural performance, repatriating objects collected through earlier colonial histories where the retention of those objects in museums generates ongoing cultural offense”³⁹.

However, in doing so there is a risk associated with the attempt to manage cultural diversity and 'interpretive pluralism', as Bennett points out, entailing "ethnocentric assumptions and forms of control or a collection of otherness"⁴⁰. In the same argument, the guiding principles of contemporary museums' practices are seen as based on 'hybridity and dialogism':

The implications of these principles, when translated into exhibition practices, favor the production of decentred displays in which objects and texts rather than being 'spoken' from a clearly enunciated controlling position –are assembled so as to speak to one another, and to the spectator, in ways that allow a range of interferences to be drawn. (...) Transforming the exhibitionary complex entails a recognition that museums function as civic technologies in which the virtues of citizenship are acquired, and changed, in the context of civic rituals in which habitual modes of thought and perception are transformed not through sudden acts of intellectual conversion but precisely by acquiring new habits through repeated exercises⁴¹.

The 9th Gwangju Biennale held between September and November 2012 exemplifies the changing paradigms shaping the way narratives and histories are constructed more democratically and in a more participatory manner among artists, curators and audiences in museums and in the artistic events they host. *Round table* was not only the theme of the Biennale, but also a new collaborative approach opening up dialogues between artists, audiences, practitioners and the Biennale's six curators.

Of particular relevance to this research were the themes upon which the dialogue unfolded. Themes encompassed the return to individual experience and the recognition of individual and subjective perspectives as forms of resistance to historical simplification and categorisation. Taking the form of public workshops and debates, the Biennale trailed new approaches to address 'site' and in order to capture the transient nature of 'place', claiming the need for action, intimacy and situated views. *Revisiting history*, a workshop led by the curator Wassan Al-Khundhari proposed a reflection on the pliable nature of history and its constant manipulation and recreation through individual narratives and multiple perspectives as artists invited audiences to retell history. *Collective*, curated by Nancy Adajania, reflected on the interaction between art and civil society which might lead to critical appraisals and reappraisals. *Migration*, by Alia Swastika, tackled the impact of mobility on time and space by engaging with artists whose work is founded at the intersection between time, space and migration.

These artistic practices contribute to an understanding of the making of history as a participatory process, shaped by the interactions between individual and collective memory, and the related nature of past and present as a continuously evolving, intertwined narrative path. In the following paragraph I discuss other ways of enabling participation and engagement through the application of digital media in museums.

2.4 Digital Media

From the early 1990s the impact of new media in museums has been explored for its potential to improve access, social interactions and cultural encounters. Charlie Gere, reflecting on James Clifford's proposed idea of museums as contact zones for cultural encounter, which follows on from Mary Louise Pratt's definition of the 'contact zone', looks at new possibilities of interactive engagement opened up by the Web and other emerging communication technologies. Clifford's model of the museum challenges the relationship of a traditional unidirectional paradigm, proposing instead a space "of exchange, negotiation and communication"⁴². Juxtaposing the contact zone model of the museum with issues based around new media, Gere suggests the need for the rethinking of museums in the information age and their role in mediating and representing material culture.

New media, according to Karp, have expanded museums' reach and range of activities, as well as possibilities for virtual exhibition, social interaction and cultural production beyond the museum itself. Asking how social identities are constructed in these display forms, and for whom, Karp investigates recent transformations in museums following the integration of new media:

New media have gained far greater prominence in the museum and heritage sector in the past fifteen years, incorporated in many ways. They have become increasingly common part of exhibition design and changed the ways that contextual information and explanation are provided for visitors. Many museums, cultural centres, and heritage organizations have launched digital projects as part of their collection management, making information about their collections more widely accessible, and Web promotion has become an integral part of marketing plans and outreach. The growing integration of new media into museum and heritage practice has resulted in a certain democratization of access, with collections and exhibitions available in virtual form in homes, schools, and elsewhere, and it has provided the basis for cooperative ventures among institutions. Yet it simultaneously creates new barriers defined by digital divides both within and among countries. Only wealthy institutions can afford the initial investment and extensive upkeep such endeavors often require, for instance, and only some people in some parts of the world can readily access them⁴³

Fiona Cameron and Sarah Kenderdine's comprehensive overview of digital heritage practices⁴⁴ offers a critical appraisal of recent applications of digital technologies for the preservation, management, interpretation, and representation of cultural heritage. Reflecting on authority and embodiment, the study outlines a significant range of digital media practices that are shaping new ways of interacting with the past by transferring agency to museum visitors, thus facilitating the co-creation of participatory narratives in responsive museum environments. The recent symposium *Nodem 2012* in Hong Kong brought together leading theorists, practitioners and artists in conversation about the future of digital heritage, creative practices, de-

sign and emerging technologies covering new forms of heritage interpretation and the future of new media now at the forefront of museum design. From the discussion emerged a wide spectrum of digital media applications and new technological innovations and services that museums are currently developing, ranging from smart objects to augmented reality, iPhone applications, e-publishing, mobile and cloud computing. Presentations at the symposium addressed the role of digital media as instrumental in the structural re-branding of museums in order to reach a broader and younger audience, as technology offers new interpretive opportunities for museum visitors' experiences.

The Museum of Asian Art in San Francisco, for instance, utilises technology to engage visitors by telling stories of the museums' collection, as well as using 3D scanning and printing to produce replicas of museums objects, thus enabling visitors to touch and handle objects as a new, sensory component of their experience.

Several museums are engaging with artists by opening up the museums' collection as a space to experiment in new interpretive, creative as well as promotional approaches. Embracing the idea that memorable events are fuelling the experience economy, upon which museums are resettling their goals and agenda (I will discuss this further in the last part of the chapter), the National Palace Museum in Taiwan utilises its extensive archive of more than 700,000 digitised film, animation and interactive media objects, inviting artists such as the renowned music composer Lim Giong to produce works featuring digital content from the museum's collection. The museum is experimenting with ways of intersecting collections, new media artists and audiences based on creative, performative and sensory framed experiences, thereby re-interpreting the past.

In this regard, Heminia Din, Associate Professor of Art Education, University of Alaska, Anchorage, examines the fine line separating new media art and new media interpretation suggesting that the latter involves technology for visual excitement and emotional experience with an educational and learning purpose. In the context of interpreting Chinese art heritage, Din presented a recent new media animation of a scroll painting in a 3D space⁴⁵.

Designing meaningful experiences around digital heritage has been suggested by many scholars, museum theorists and practitioners as one of the main challenges for contemporary museum culture. According to Harry Verwayen, director of business development at *Europeana* – a web portal connecting libraries, museums and archives from more than 2000 contributing institutions across Europe – major challenges remain in harmonizing and aggregating data from different formats. New opportunities are being explored in terms of ways of aggregating content around key themes and topics. As problems of language, curation and authenticity are taken into consideration, challenges are taken on how to reconcile digitisation of cultural heritage with a human scale and thus developing new models for knowledge sharing by engaging creative practitioners and industries⁴⁶.

Susan Hazan, curator of new media at the Israel Museum in Jerusalem reflects on the meaning of virtual museums and their impact on society. Hazan examines several examples of experi-

ences in virtual museums around cultural heritage suggesting how these experiences negotiate an approach to design that is both curatorial as well as user generated aiming at enveloping heritage to audiences in novel and critical ways⁴⁷.

2.5 The multimedial museum: opportunities for curatorial design

In the book *Virtuality and the art of exhibition*, Vince Dziekan explores the impact of digital technologies on the exhibition complex and develops a framework for digitally informed creative production of exhibitions at the intersection between art, design, new media and museology. In response to the emergence of the multimedia museum, curatorial design is described by Dziekan as a critically informed approach to exhibition making that integrates digital mediation with spatial practice⁴⁸. Curatorial design is shaped by critical and creative investigations that respond to the current integration of digital media within museum-based practices. Of particular relevance to this research, Dziekan's inquiry offers a comprehensive understanding of the influence that digital technologies are exerting on artistic practices, exhibition design, curation and the museum.

Dziekan reflects on the characteristics of the aesthetic experience under conditions that are influenced by mediation of digital technologies and the multimedia nature of the museum. According to the author, the exhibition is a media form, as it negotiates aesthetic experience and "announces itself as 'the interface' that actively mediates between physical and invisible realities"⁴⁹. As an interface, the exhibition's role is fundamental in mediating the interaction between cultural production and the viewer's experience. Dziekan draws a parallel with Borriaud's concept of 'relational aesthetics', explaining that the concept is a way of considering the productive existence of the viewer of art and the space of participation that art can offer:

Spatial arrangements exert a powerful influence as an organising principle on the formation of virtual environments. (...) for example works of Jeffrey Shaw that employ the Advanced Visualisation and Interaction Environment (AVIE) exhibition platform are staged in an arena built to exacting specifications. The viewer's full sensory immersion with the artworks' virtual spaces is reinforced by the enveloping enclosure. Interiority is a prerequisite condition demanded to consolidate the work's totalising virtual reality effect⁵⁰.

Digital technology is renegotiating the museum's spatiality and structure in such a way that no longer can the museum be viewed as a simple physical container. "Rather", as Dziekan proposes, "the architectural issues of organising spaces and manipulating settings for displaying artworks are now more decisive, and as much virtual as physical"⁵¹. Given these conditions, the author argues that "curatorial design makes the connection between artworks and space emphatic, supplanting the self-contained artwork through techniques of assemblage, arrangement and spatial composition"⁵².

The relationship between the artwork, digital technology, the museum's media environment and viewers is the context where a new ecological approach to design and curation can be

tested, proposing a fundamental interdependence between all the constituent parts involved: Dramatic methods of display and presentation are characteristic of this new ecology and instil in the viewer preparedness to recognise the artwork as an outcome of a performed process (both in the sense of simulated, read a staged, and lived, read experienced) rather than a fixed consolidated artefact⁵³.

As museums are becoming increasingly distributed across a range of media, as well as on on-line and onsite platforms, curatorial practices are even more concerned with facilitating digital mediation and “dialogic transaction between artefact and mode of display”⁵⁴ by exploring new possibilities for visitors’ experience. As Dziekan explains:

Recognising how the interrelationship between digital mediation and spatial practice is coming to shape the character of aesthetic experience under contemporary conditions of the multimedia museum, the term ‘dialectical’ draws upon cinematographic association with the technique of montage.(...) This dialectic approach heralds a moving away from what might be termed as a broadcast model of distribution (entailing a one-way communication approach) by introducing degrees of openness (access, participation) and feedback (exchange, transactions). Importantly, the realisation of this aesthetic is not achievable only through multimedia -although multimedia does offer a distinctive way of exploring this mode of exposition. This shift entails ideological choices that challenge the museum’s ability to respond to a changing mandate, from one founded on its presentation role to that of providing an infrastructure for aesthetic experience. Developing critically and creatively upon the dialectical relationship between virtuality and the art of exhibition could significantly alter the configuration and conceptualisation of how exhibition space operates in this configuration⁵⁵.

An integrative approach to digital mediation and spatial practice shapes the framework of curatorial design, weaving together artwork and viewer through mediated exhibition environments and thus “extending the narrative and communicational possibilities for aesthetic experiences in the multimedia museum”⁵⁶.

2.6 Baroque aesthetics and new media

Anna Munster draws a connection between contemporary multimedia display in museums and the aesthetic of curiosity cabinets. As Munster proposes, they both operate in a ‘baroque mode’ creating connections between “objects, images, sounds and concepts” that work through “dissonance, variation and arbitrary association engaging the viewer, and her love for curiosity, in a visual, seductive and affective way”⁵⁷. The logic and aesthetics of the baroque inform the display and arrangement of cabinets of curiosity, where anecdotal narratives accompanied the display of an eclectic mix of objects. As Munster puts it, there is a correspondence between the aesthetics of *Wunderkammer* and digital displays, for the way objects and artefacts are assembled, related and combined, as well as for the tension that these display hold between

virtuality and materiality and how they engage the viewer through wondrous experiences and affectivity. The baroque aesthetic of the cabinet of curiosity informs, according to Munster, contemporary virtual museum displays as what she refers to as a 'structuring device'⁵⁸. The baroque tensions occur in digital spaces between the physicality of our bodies and the discreteness of the machine, and between museological data and the narratives we create from it. Munster argues that there are two tendencies in Human-Computer Interaction design. The first, works to make the 'face' of the computer friendlier, the other working to making it disappear, concealing it altogether. She argues that there is little exploration of other possibilities of embodied interface design. As the dominant paradigm of interface design works to either 'subsumimistng the body' into the machine, or providing the machine with 'a human face', the baroque tension existing in the interplay between virtuality and physicality, organic life and computational systems, is completely neutralised.

Drawing from Munster's considerations on baroque aesthetics and its application in digital displays and multimedia environments in museums, we can re-think the museum as a place where oppositional tensions between the digital and the sensual are located in two places: the archive – with its dematerialising, disembodied space – and the body.

Anna Munster's direct observations taken from her first visit to *SIGGRAPH* in 1995 suggested how the legacy of Cartesian ontology, and what she refers as 'post Cartesian rationalism', had informed biases about the computer and the knowledge system from which it has risen. These biases are, according to David Rokeby, related to its power, the speed, its promise of immersion, interactivity and objectivity. Within this paradigm there is little, if no room at all, for issues of embodiment and intimacy with technology. It seemed that a place for the "body and its interaction with the machine were left out the Cartesian schema, confirming that interaction with computing interfaces had to be a sensorially limited, desensorialising, isolating, and dematerialising experience"⁵⁹.

In the early stages that gave rise to new media culture, and there were artists and new media practitioners who addressed in their works issues of embodiment in technology, drawing their interests and artistic research towards investigations of the sensorial component of interaction with the machine. They pioneered a way of looking at computers as imperfect, limited and biased entities, whose interactions are shaped by the inextricable relationship that develops and evolves between the machine and the user's body. Through this relationship both the participants and the computer adapt and adjust, affecting one another, as Rokeby's argues:

The computer as a medium is strongly biased. And so my impulse while using the computer was to work against these biases. Because the computer is purely logical, the language of interaction should strive to be intuitive. Because the computer removes you from your body, the body should be strongly engaged. Because the computer is objective and disinterested, the experience should be intimate⁶⁰.

Munster recognises a simultaneous convergence and discordance in user-machine interaction

as a characteristic of the baroque's aesthetic, one defined by the articulation of binary, oppositional terms: 'embodiment/technics', 'body/machine', 'sensation/concept', 'physicality/virtuality'⁶¹.

2.7 Wonder and Resonance

Michelle Henning reflects on "the return to curiosity in contemporary art, in virtual museums and in new exhibit design"⁶². In this context, *wonder* and *resonance* are identified as links between the aesthetics of new media and that of the private curiosity cabinets, or *Wunderkammer*, of the sixteenth to eighteenth centuries. Stephen Greenblatt explains further how these concepts relate to museum practices:

By resonance I mean the power of the displayed object to reach out beyond its formal boundaries to a larger world, to evoke in the viewer the complex, dynamic cultural forces from which it has emerged and for which it may be taken by a viewer to stand. By wonder I mean the power of the displayed object to stop the viewer in his or her tracks, to convey an arresting sense of uniqueness, to evoke an exalted attention (...) The effect of resonance can be achieved by awakening in the viewer a sense of the cultural and historically contingent construction of art objects. A resonant exhibition often pulls the viewer away from the celebration of isolated objects and towards a series of often implied, only half-visible relationships and questions: (...) How did the objects come to be displayed? How were they originally used? What cultural and material conditions made possible their production? What were the feelings of those who originally held the objects, cherished them, collected them and possessed them⁶³.

Describing his visit to the State Jewish Museum in Prague, which holds one of the most extensive and well preserved collections of synagogue art in Europe, Greenblatt notices that the museum was not so much about the artefacts on display, as it was about memory, and the form that memory takes is a secularized Kaddish, a commemorative prayer for the dead. The museum worked as a memorial complex, wherein as Greenblatt describes the effect that "the discordance between viewing and remembering is greatly reduced. Even the less charged religious artefacts are able to convey an odd and desolate impression"⁶⁴. The resonance of the museum depended, according to Greenblatt, "not upon visual stimulation but upon a felt intensity of names, and behind the names, as the very term resonance suggests, of voices: the voices of those who chanted, studied, muttered their prayers, wept, and then were forever silenced"⁶⁵.

If *resonance* is the capacity of objects and displays to evoke an intimacy with the viewer – an intimacy that is linked to destruction and absence – *wonder*, according to Greenblatt, is closely related to enchantment, intensity, ownership and possession:

The wonder-cabinets of the Renaissance were at least as much about possession as display. The wonder derived not only from what could be seen but from the sense that the shelves and cases

were filled with unseen wonders, all prestigious property of the collector. In this sense the cult of wonder originated in certain conjunction with a certain type of resonance, a resonance bound up with the evocation not of an absent culture but of the great man's superfluity of rare and precious things⁶⁶.

Greenblatt argues that resonance and wonder are not opponent models for museums. In fact, it is through their interplay that the impact of an exhibition can be enhanced. When an initial appeal to wonder leads to the desire for resonance, then "the poetics and politics of representation are mis completely fulfilled in the experience of wonderful resonance and resonant wonder"⁶⁷.

In the field of product and interaction design, Caroline Hummels refers to 'resonance' in its denotations derived from physics and ecological perception studies, suggesting that a 'resonant interaction' is "the perfect interplay that occurs between a person and a product"⁶⁸. Resonant interactions evoke positive emotions, surprise, awareness during and after use and cognitive processing.

We have all experienced the beauty of this last rule when trying to swing as high as possible when we were children. As a designer, I always love and aim to achieve the embodiment of this metaphor with respect to beautiful interaction: the perfect synchronisation between a person and a product during interaction through which the person reaches an unprecedented height with respect to use and experience⁶⁹.

Incorporating the concept of 'resonance' into the design of the new generation of digital products, which according to Hummels manifests as the unique interplay between a person and an object, could be an effective way to stimulate designers to effectively address and achieve diversity in their work.

2.8 Audience Experience

A broad wealth of literature has been produced in recent years concerning audiences' experience with multimedia and interactive museum environments⁷⁰. Approaches to audience study research, methods and findings will be examined throughout the research, and more specifically when presenting the research's case studies.

Anita Kocsis Head of Design, Society and Culture at Swinburne University of Technology, Melbourne presented her recent studies connecting introspection with interaction at *Nodem 2012*. There is a trend in audience research focusing on the emotional, affective sensorial and cognitive components of audience experience in museums. Research questions in Kocsis's studies ask: 'what do visitors in technologized space think and feel?' Considering visitors as active agents in the construction of meaning, Kocsis reflects on the discrepancy and disjunction between what is intended by the designer and what the user experiences, suggesting that experiences are messy facts, shaped by complex, multifactorial elements.

Experience, as I will discuss in the final part of this chapter, is often the site of tension in museums' agenda and policy, pulling and pushing them between mission and market. Therefore experience is often conceived as part of the museum's branding strategy and as a form of consumption and entertainment. I will discuss this further when presenting Pine and Gilmore's concept of the 'experience economy'.

2.8.1 Digital experience

As evidence of the fine line separating experience and marketing, Peter Samis, associate curator of interpretive media at the San Francisco Museum of Modern Art (SFMOMA), presents the work of his department as a triangulation between the curatorial and the marketing sector at the Nodem conference afore mentioned. As Samis explains, often exhibition spaces remove all the context and relational aspects of the work, keeping only the physicality of the art objects on display. The digital experience attempts to restore the content, acknowledging the visitors' questions and privileging the artists' voices when speaking about their work.

According to extensive research conducted by SFMOMA on audience behaviour in relation to application of digital technology in museums, Samis points out that the vast majority of museum visitors don't use technology in their museum visit. The goal for designers and interpretation specialists is to reach these people and create a meaningful experience for them by providing suitable - and resonant - affordances. The mobile alone is not the answer, as Samis points out. The more interpretive offering to visitors will use a variety of media, the more visitors will be able to construct their own meaning and context around the exhibition. Among the content development and digital engagement strategies that the new SFMOMA will employ after its re-opening in 2016 are a multi-platform integrative design approach encompassing community engagement, web and multi-platform publication in order to enhance visitors' experience both on site and online.

2.9 The experiential complex

Martin Hall reflects on the implications of the 'experiential complex' in museums' networked and simulated environments as one of the determinants of what Pine and Gilmore refer to as an 'experience economy'. "Experiences", according to Pine and Gilmore, "are offered whenever a company intentionally uses services as the stage and goods as props to engage an individual"⁷¹. An experience economy therefore depends on engaging customers through an experience. Gilmore and Pine have identified the realms of such experience as being "entertainment, education, escape and aestheticism"⁷². Education requires the active participation of the individual. Escapism requires immersion in the experience (in contrast to the passive observation of entertainment). The aesthetic requires quality of place.

This re-branding of experience in museums can be linked to the reflections of Giorgio Agamben on the impossibility for experience, which are examined further in the next chapter. Hall points out the close and mutually reinforcing connection between destination museums and photography, which is a means of facilitating the tourist in 'collecting experiences':

Photography completes the hermeneutic circle of tourism, in which the desire to travel and to consume the experience of the exotic is initiated by travel brochure, magazines etc. (...) Museums in the experience economy start not with institutions but with the individual, offering those who can afford to participate the fantasy of a customized world, the opportunity to be who they want to be through the technologies of simulation⁷³.

Identifying the visitor as the object of the spectacle, shares the same design principle of the panopticon: "to regulate the crowd, and to do so by rendering it visible to itself, by making the crowd itself the ultimate spectacle"⁷⁴.

2.9.1 Spectacle

Hall explains further how museums' experiential complex works by offering "a destination, entertainment, advanced simulation, and valued mementos in a secure and controlled environment"⁷⁵. The experiential complex operating through reduction, extraction and recombination often results in a representation of heritage that is alien from the community to which it belongs. Hall points out the need for a reinvention of museum displays in such a fashion as to renegotiate ways of restoring the 'aura' to the work of art. This is understood through Benjamin's reflections on the object's authority, "its presence in time and space, its unique existence at the place where it happens to be, as well as the changes which it may have suffered in physical condition over the years"⁷⁶. Position in time and space – and patina of trace – constitute according to Hall, the aura of an object, that which brings its authority back to the museum. To retain value, Hall suggests that:

the simulacra of identity need to be anchored to cultural treasures. There is then no contradiction between the experience economy and the materiality of the object, and the experiential complex is marked by the return of the aura of the work of art in the era of digital simulation⁷⁷.

In what ways can curatorial design practices in the multimedia museum reinstate an aura to the objects, while at the same time renegotiating experience in the museum spectacle? How can a sense of presence be conveyed and mediated? We will look in the next section at the different components of the experience, such as presence, authenticity, an object's authority and authorship.

2.9.2 Experience and authorship

Fred Myers draws the attention to the procedural component of exhibitions as a field "of cultural production, as something processual, (...) venues for redefining relationships among people and things"⁷⁸. As an example of how exhibitions can become sites of cultural production he describes the Dreamings exhibition of the art of Aboriginal Australia:

Objectification in this form of painting, the materiality of this knowledge has distinctive consequences. For one thing, Aboriginal myth and ritual knowledge have material qualities beyond the narrative structure; they have extension in space, insofar as the stories are linked to specific places, an important material component of formulating a social identity among those with rights to the stories. Stories and the ceremonies enacting them, along with the associated paraphernalia and designs, can also be owned and exchanged; rights (...) what might we imagine to occur when these images and practices, and the concern for dispersal are transported to an – other venue of objectification – a symposium in New York at the Asia Society⁷⁹.

Myer's argument here is that the symposium offered an alternative and additional interpretive practice to the exhibition. The symposium created a context for the artworks, operating as an interpretive medium between the remote Australian Aboriginal culture and New York audiences.

This poses questions as to how curatorial design practices can mediate meaning and transfer the 'context' of communities and their heritage. Is this heritage translatable and transferrable? How is it possible to transfer meaning to objects/stories that have been de-contextualised? These are recurring questions within the field of interpretation and curatorial practices.

Marshall McLuhan's distinction between hot and cold media⁸⁰ and their required lower and higher levels of participation by the audience, helps understanding the relational aspect of the aesthetics of the multimedia museum and the interaction between objects, audience and digital media. Simon Penny defines this aesthetic as 'procedural', as it happens in the making, and requires a response on the side of the user⁸¹. This, applied to museum displays, has an innovative potential to contrast with hegemonic exhibition practices through creating interpretive and responsive environments that are capable of renegotiating new meanings and relationships between objects, places, people and cultures within the museum.

Having introduced in the last paragraphs issues concerning the museum as an experiential complex, the next chapter will problematize the role of 'experience' as a new territory for curatorial design theory and practice. This will begin to form the research argument, which revolves around the renegotiating and reframing of experience in museums and the role that digital media can play in extending presence, improving access and embedding participation as a strategy for curatorial design.

2.10 Moving towards the research problem

Having introduced in the last paragraphs the discourses around the museum as an experiential complex, as well as having proposed concepts such as resonance and wonder as possible guidelines for the design of digital objects, media and interaction in responsive museum spaces, the next chapter will problematize the role of 'experience' as a new territory for curatorial design theory and practice. This will begin to form the research argument, which proposes

to renegotiate experience in museums and rethink the role that digital media can play in extending presence, enable embodiment, improving access and embedding participation as new strategies for curatorial design.

- 1 Bennett, T., 2006. Exhibition, Difference, and the Logic of Culture. In I. Karp & C. A. Kratz, eds. *Museum frictions: public cultures/global transformations*. Durham, N.C. London: Duke University Press, pp. 46–69.
- 2 Clifford, J., 1997. *Routes. Travel and Translation in the Late Twentieth Century*, Cambridge, MA: Harvard University Press.
- 3 Basso Peressut, L., 2012. Envisioning 21st Century Museums for Transnational Societies. In L. Basso Peressut & C. Pozzi, eds. *Museums in an Age of Migrations Questions, Challenges, Perspectives*. Milan: Mela Books, Politecnico di Milano, Dipartimento di Progettazione dell'Architettura, pp. 19–54.
- 4 Henning, M., 2006. *Museums, Media and Cultural Theory*, Maidenhead: Open University Press.
- 5 Hooper-Greenhill, E., 2000. *Museums and the Interpretation of Visual Culture*, New York: Routledge, p.xi.
- 6 Bennett, T., 1995. *The birth of the museum: history, theory, politics*, London: Routledge.
- 7 Duncan, C., 1995. *Civilizing rituals: inside public art museums*, London: Routledge.
- 8 Pearce, S., 1999. Collecting as medium and message. In E. Hooper-Greenhill, ed. *Museum, media, message*. London: Routledge, pp. 15–23.
- 9 Hooper-Greenhill, E., 1992. *Museums and the shaping of knowledge*, London: Routledge.
- 10 Hooper-Greenhill, E., 2000. *Museums and the Interpretation of Visual Culture*, New York: Routledge.
- 11 Witcomb, A., 2003. *Re-imagining the museum: beyond the mausoleum*, London; New York: Routledge.
- 12 Chakrabarty, D., 2002. Museums in Late Democracies. *Humanities Research*, IX(1), pp.5–12, p.5.
- 13 Chakrabarty, D., 2002, *Ibid*, p.6.
- 14 Chakrabarty, D., 2002, *Ibid*, p.9.
- 15 Bennett, J., 2005. *Empathic Vision: Affect, Trauma, and Contemporary Art*, California: Stanford University Press, p.131.
- 16 Messham-Muir, K., 2008. Art and the Archive. An exhibition by Fine Art researchers from the Arts/Health Research & Practice Centre at The University of Newcastle. Available at: www.newcastle.edu.au/Resources/ResearchCentres/ArtsHealth/Artandt-heArchiveEssayDraft03.pdf.
- 17 Karp, I., 2006. Introduction. In I. Karp & C. A. Kratz, eds. *Museum frictions: public cultures/global transformations*. Durham, N.C. London: Duke University Press, pp. 1–31, p.19.
- 18 Karp, I., 2006, *Ibid*, p.7.
- 19 Trinca, M. & Wehner, K., 2006. Pluralism and exhibition practice at the National Museum of Australia. *Journal of the National Museum of Australia*, 1(1), pp.61–64, p.62.
- 20 Messham-Muir, K., 2008, *Op.cit.*
- 21 Karp, I., 2006, *Op.cit.*, p.7.
- 22 Kjeldbaek, E., *The Power of the Object: Museums and World War II*, Edimburgh, New York: MuseumEtc.
- 23 Holtschneider, H.K., 2011. *The Holocaust and Representations of Jews: History and Identity in the Museum*, London; New York: Routledge.
- 24 Basso Peressut, L., 2012. *Op.cit.*, pp. 19–54, p.22.
- 25 Basso Peressut, L. & Pozzi, C. eds. 2012, *Ibid*, p.3.
- 26 Basso Peressut, L. & Pozzi, C., eds. 2012, *Ibid*, p.10.
- 27 Basso Peressut, L. & Pozzi, C., eds. 2012, *Ibid*, p.19.
- 28 Basso Peressut, L. & Pozzi, C., eds. 2012, *Ibid*, p.20.
- 29 Basso Peressut, L. & Pozzi, C. eds. 2012, *Ibid*, p.24.
- 30 Foucault, M., 1986 (1st Ed 1967). Of Other Spaces. *Diacritics*, 16(1), pp.22–27, translated by Miskowiec, J., p.26.
- 31 Merriman, N., 2000. The Crisis of Representation in Archaeological Museums. In A. Hatton & F. P. McManamon, eds. *Cultural Resource Management in Modern Society*. London; New York: Routledge, pp. 300–309.
- 32 Ashworth, G.J. & Tunbridge, J.E., 1996. *Dissonant Heritage: The Management of the Past as a Resource in Conflict*, New York: Wiley.
- 33 Pratt, M.L., 1992. *Imperial Eyes: Travel Writing and Transculturation*, London; New York: Routledge.
- 34 Clifford, J., 1997, *Op.cit.*
- 35 Karp, I. & Lavine, S.D. eds., 1991. *Exhibiting Cultures: The Poetics and Politics of Museum Display*, Washington: Smithsonian Institution Press.
- 36 Bennett, T., 2006, *Op.cit.*
- 37 Basso Peressut, L. & Pozzi, C.i, eds. 2012, *Op.cit.*, p.29-30.
- 38 Bennett, T., 2006, *Ibid*, p.57.
- 39 Bennett, T., 2006, *Ibid* p.59.
- 40 Bennett, T., 2006, *Ibid* p.61.
- 41 Bennett, T., 2006, *Ibid* p.63, 67.
- 42 Gere, C., 1997. Museums, Contact Zones and the Internet. *Archives & Museum Informatics*, pp.59–66, p.63.
- 43 Karp, I., 2006, *Op.cit.*, p.13-14.
- 44 Cameron, F. & Kederline, S. eds., 2007. *Theorizing digital cultural heritage: a critical discourse*, Cambridge, MA: MIT Press.
- 45 Din, H., 2012. How Can We Use New Media for Interpretation. Nodem Conference Hong Kong Video Archive. Available at: www.nodem.org/ndm_video/herminia-din-how-can-we-use-new-media-for-interpretation/ [Accessed August 17, 2013].
- 46 Verwayen, H., 2012. Distributed Culture Reflections on Value Creation. Nodem Conference Hong Kong Video Archive. Available at: www.nodem.org/ndm_video/harry-verwayen-distributed-culture-reflections-on-value-creation/ [Accessed August 18, 2013].

- 47 Hazan, S. & Sorin, H., 2012. Virtual MUSEum Transnational NETwork. Nodem Conference Hong Kong Video Archive. Available at: www.nodem.org/ndm_video/susan-hazan-sorin-hermon-virtual-museums-network/ [Accessed August 18, 2013].
- 48 Dziekan, V., 2012. *Virtuality and the Art of Exhibition: Curatorial Design for the Multimedia Museum*, Bristol: Intellect Books, p.
- 49 Dziekan, V., 2012, *Ibid*, p.10.
- 50 Dziekan, V., 2012, *Ibid*, p.24.
- 51 Dziekan, V., 2012, *Ibid*, p.29.
- 52 Dziekan, V., 2012, *Ibid*, p.33.
- 53 Dziekan, V., 2012, *Ibid*, p.34.
- 54 Dziekan, V., 2012, *Ibid*, p.50.
- 55 Dziekan, V., 2012, *Ibid*, p.70.
- 56 Dziekan, V., 2012, *Ibid*, p.84.
- 57 Munster, A., 2006. *Materializing new media: embodiment in information aesthetics*, Dartmouth, N.H.: Dartmouth College Press, p.6.
- 58 Munster, A., 2006. *Ibid*, p.12.
- 59 Munster, A., 2006. *Ibid*, p.3.
- 60 Rokeby, D., 2000. Artist's statement for Very Nervous System. Available at: <http://homepage.mac.com/davidrokeby/vns.html> [Accessed April 6, 2010]
- 61 Munster, A., 2006. *Op.cit.*, p.5
- 62 Henning, M., 2006. *Op.cit.*, p.130.
- 63 Greenblatt, S., 1991. Resonance and Wonder. In I. Karp & S. D. Lavine, eds. *Exhibiting cultures: the poetics and politics of museum display*. Washington: Smithsonian Institution Press, pp. 42–56, p.42, 45.
- 64 Greenblatt, S., 1991. *Ibid*, p.46.
- 65 Greenblatt, S., 1991. *Ibid*, p.47.
- 66 Greenblatt, S., 1991. *Ibid*, p.50.
- 67 Greenblatt, S., 1991. *Ibid*, p.54.
- 68 Hummels, C., 2007. Searching for Salient Aspects of Resonant Interaction. *Knowledge, Technology & Policy*, 20(1), pp.19–29. Available at:<http://link.springer.com/10.1007/s12130-007-9005-9> [Accessed August 22, 2013], p.19.
- 69 Hummels, C., 2007, *Ibid*, p.21.
- 70 Among the precursors who investigated the relationship between art and experience in a philosophical framework is John Dewey in Dewey, J., 1979. *Art as Experience*, New York: Paragon Books. In more recent years several studies on audience experience and experiential approaches to the art of exhibition flourished in the field. The following are the most relevant to this research:
- Turner, V. & Bruner, E. eds., 1986. *The Anthropology of Experience*, Chicago: University of Illinois Press.
- Csikszentmihalyi, M., 1990. *The art of seeing: an interpretation of the aesthetic encounter*, Malibu, California: J.P. Getty Museum : Getty Center for Education in the Arts.
- Heath, C. & Vom Lehm, D., 2004. Configuring Reception (Dis-)Regarding the “Spectator” in Museums and Galleries. *Theory, Culture & Society*, 21(6), pp.43–65.
- Hooper-Greenhill, E., 2004. Studying Visitors. In S. Macdonald, ed. *A Companion to Museum Studies*. Oxford: Blackwell Publishing, pp. 363–376.
- Edmonds, E.A., Muller, L. & Turnbull, D. eds., 2006. Engage: Interaction, Art and Audience Experience. In *Proceedings of the Engage Symposium*. Sydney: Creativity and Cognition Press.
- Macdonald, S. ed., 2006. *A Companion to Museum Studies*, Oxford: Blackwell Publishing.
- 71 Hall, M., 2006. The Reappearance of the Authentic. In I. Karp & C. A. Kratz, eds. *Museum frictions: public cultures/global transformations*. Durham, N.C. London: Duke University Press, pp. 70–101, p.77.
- 72 Pine, B.J. & Gilmore, J.H., 2011. *The experience economy*, Boston, Mass: Harvard Business Review Press, p.78.
- 73 Hall, M., 2006. *Op.cit.*, p.80.
- 74 Hall, M., 2006. *Ibid*, p.85.
- 75 Hall, M., 2006. *Ibid*, p.83.
- 76 Hall, M., 2006. *Ibid*, p.90.
- 77 Hall, M., 2006. *Ibid*, p.94.
- 78 Myers, F., 2006. The Complicity of Cultural production: The Contingencies of Performance in Globalizing Museum Practices. In I. Karp & C. A. Kratz, eds. *Museum frictions: public cultures/global transformations*. Durham, N.C. London: Dartmouth College Press, pp. 505–535, p.505.
- 79 Myers, F., 2006. *Ibid*, p.505-506.
- 80 McLuhan, M., 2003 (1st Ed. 1964). *Understanding media: the extensions of man*, Corte Madera, CA: Gingko Press.
- 81 Penny, S., 2003. Representation, Enaction, and the Ethics of Simulation. In N. Wardrip-Fruin & P. Harrigan, eds. *First person: new media as story, performance, and game*. Cambridge, Mass.: MIT Press, pp. 73–84.

3.0 THE QUEST FOR EXPERIENCE

This chapter explores 'experience' as a new territory for curatorial design and draws on Giorgio Agamben's reflections on the destruction of experience within modern man's everyday life from two of his books, namely *Infancy and History* (1993) and *Profanations* (2007). In the latter Agamben argues that religion and our capitalist society operate in a similar manner by removing things from common use and transferring them to a separated, sacred sphere. According to this perspective, our society performs a twofold process of consecration or separation, namely by consumption and spectacle. The shopping mall and the museum are the sites where this separation takes place. Objects in the museum are separated from experience and common use, becoming part of a spectacle. I will discuss further in this chapter how Agamben suggests that freeing actions from the sphere of the sacred and returning them to everyday experience is possible, and he terms these actions 'profanations'.

This observation introduces the argument of the research, which revolves around renegotiating and reframing experience in the museum and examining the role that digital media can play in this process. Opening up a discussion around experiential approaches to the interpretation of cultural heritage allows the inherent ambiguities and paradoxes of this approach to be presented. In the light of this discussion, questions are outlined relating to the impact of digital technologies augmentation and/or simulation of an embodied engagement as a new way of knowing about the world, others and ourselves. The thesis argues that a way of mediating difference and facilitating intimacy with contested topics and representation of marginal and counter-histories is achievable by adopting an integrative approach to curatorial design that enables multisensory engagement through spatial, narrative and sensory forms.

The research case study examined here will explore from a critical perspective the strategies adopted by designers and curators to renegotiate aesthetic experiences, as well as affective and

embodied interactions between the present and the past while looking at the characteristics of mediated experience and its effect on time, space and the body.

3.1 The destruction of experience

Drawing from Walter Benjamin's diagnosis of the poverty of experience in the modern age, whose origin he dates back to the First World War, Giorgio Agamben argues that "modern's man average day contains virtually nothing that can still be translated into experience"¹.

A visit to a museum or a place of tourist pilgrimage is particularly instructive. Standing face to face with one of the great wonders of the world (let us say the Patio de los Leones in the Alhambra), the overwhelming majority of people have no wish to experience it, preferring instead that the camera should.²

Agamben correlates experience with authority, suggesting that the latter is that which makes experience translatable into the everyday. In traditional culture, a maxim or a proverb based on experience stood as authority. Today, as that knowledge is lost or no longer part of our everyday, experiences still occur, but somehow they are enacted outside the individual.

Agamben explains how the expropriation of experience from modern man's average day finds its origins in modern science's mistrust of experience and the consequent separation of knowledge and experience as "two autonomous spheres"³. On the other hand, there is a space where experience continues to be present in everyday life and that is through play. As Agamben argues, experience and play are inextricably entwined: "a theory of experience could only be a theory of infancy" and goes further explaining the overturning effects of play on our sense of time. Play operates as an accelerator, rupturing time in such a way that "the immediate result of the invasion of life by play is a change and acceleration of time"⁴ and in this way it can be understood as a 'profanating' procedure. In the next paragraph I will explain further what Agamben



Image 1, 'Visitors at the Louvre'

intends by profanation, drawing on his reflection on the sacred and the profane.

3.2 In praise of profanation

Sacred or religious were the things that in some way belonged to the gods. As such, they were removed from the free use and commerce of men (...). Any act that violated or transgressed this special unavailability, which reserved these things exclusively for gods, was sacrilegious. And if 'consecrate' was the term that indicated the removal of things from the sphere of human law, 'to profane' meant, conversely to return them to the free use of men.⁵

Religion, according to Agamben, removes things, places, animals or people from common use by transferring them to a separate, sacred sphere. By doing so it ensures that men and god remain distinct. In a similar manner our society operates a twofold process of consecration or separation, removing objects from everyday experience through consumption and spectacle. The museum is the emblematic space where this separation occurs. Today's 'museification' of the world is, according to Agamben, an accomplished fact. In the museum objects are separated from experience, they are transferred to a separate sphere, hence they become part of a spectacle. Both spectacle and consumption are two aspects of the same religion, capitalism:

What cannot be used is, as such, given over to consumption or to spectacular exhibition. This means that it has become impossible to profane (or at least that it requires special procedures). If to profane means to return to common use that which has been removed to the sphere of the sacred, the capitalist religion in its extreme phase aims at creating something absolutely unprofitable⁶.

3.2.1 Play and touch as profanating procedures

Developing on from Agamben's reflections we can understand profanation as behavior that frees one from either the sphere of consumption or spectacle:

The freed behaviour still reproduces and mimics the forms of activity from which it has been emancipated, but, in emptying them of their sense and of any obligatory relationship to an end, it opens them and makes them available for new use⁷.

A way of freeing the sacred object from the sacred sphere is through play:

The passage from the sacred to the profane can, in fact, also come about by means of an entirely inappropriate use (or rather, reuse) of the sacred: namely, play. It is well known that the sphere of play the sacred are closely connected. Most of games with which we are familiar derive from ancient sacred ceremonies, from divinatory practices that once belonged, broadly speaking, to the religious sphere. The *girotondo* – ring around the rosy – was originally a marriage rite; playing with the ball reproduced the struggle of the gods for the possession of the sun; games of chance derive from oracular practices; the spinning top and the chessboard were instruments of divination⁸.

Agamben suggests that the role of play is fundamental in freeing things from the sphere of the

sacred without abolishing it. The use to which the sacred is returned through play is, according to the philosopher, a new use, one that does not coincide with utilitarian consumption:

In fact the profanation of play does not solely concern the religious sphere. Children who play with whatever old thing falls into their hands, make toys out of things that also belonged to the sphere of economics, war, law and other activities that we are used to thinking of as serious⁹.

As play opens up a new dimension of use and a new life for the object, Agamben points out that the deactivation operated by play on the power of economics, as well as law or politics, is precisely that which can become “the gateway to a new happiness”¹⁰. Playing with a ball, the cat uses predatory behaviour in vain. His predatory behaviours are deactivated or re-negotiated by the substitution of the mouse by the ball. This substitution opens up for the object a new possible use.

Drawing on Lévi-Strauss’ investigation of the relationship between play and rituals, Emile Benveniste looks at play as a cultural act and at its subversive and overturning effects on the sphere of the sacred:

The power of the sacred act lies in the conjunction of the myth that tells the story and the rite that reproduces and stages it. Play breaks up this unity: as *ludus*, or physical play, it drops the myth and preserves the rite; as *iocus*, or wordplay, it effaces the rite and allows the myth to survive. (...) If the sacred can be defined through the consubstantial unity of myth and rite, we can say that one has play when only half of the sacred operation is completed, translating only the myth into words or only the rite into actions¹¹.

These studies examine the transformative potential of play to enable the continuity of lived experiences through the suspension and acceleration of time. Agamben reminds us that the power of play operating through illusion “restores to the word its etymological meaning, from *in-ludere*”¹².

Touch

Another way of profanating a sacred object is by touching it:

One of the simplest form of profanation occurs through contact (contagione) during the same sacrifice that effects and regulates the passage of the victim from the human to the divine sphere. One part of the victim is reserved for the gods, while the rest can be consumed by men. The participants in the rite need only touch these organs for them to become profane and edible. There is a profane touch that disenchant and returns to use what the sacred had separated and petrified¹³.

In our society the act of profaning entails the removal of things from the sacred sphere of consumption and spectacle, to the realm of common use. Museums, Agamben argues, are emblematic of this “impossibility of use”¹⁴. This, however, hasn’t always been the case, as

Stephen Bann points out. Touching sculptures and relics of saints was a form of worship – which is still practiced in many cultures and traditions – and it is a way of acquiring the power of the sacred objects¹⁵.

Today's new museology emphasises the appraisal of the senses in the enhancement of audiences' experience with museum objects, as Hooper-Greenhill and Pearce observe¹⁶. We will discuss this further in the case study which focuses on how touch can become a vehicle of experience in the museum. According to Anne Cranny Francis, practices of touching and handling objects, and the associated sensorial engagement, are seen as ways of knowing and making meaning¹⁷. As Judith Butler explains, "bodies adopt a performative relationship to objects, they enact the construction of meaning which is at once dramatic and contingent"¹⁸.

Object-centred knowledge, embodiment, aesthetic knowing, affect and performativity are threads that run through this research. They develop through a dialogue between the theoretical and practical aspects of the research by opening up a space for exchange and mutual reflection between the realm of theories and ideas and the materiality of practices. This forms the research's interpretive framework.

3.3 Paradoxes of playful and experiential approach to heritage interpretation

There are ambiguities and paradoxes inherent in the adoption of an experiential and playful interpretation of problematic and contested topics in museums and heritage sites such as war, for instance. Mads Daughbjerg provides a very significant account of the concerns related to current tendencies in the heritage industry to "align communication to new emotional and playful ways of learning about the past"¹⁹. Daughbjerg discusses the problems of embracing 'experience' and 'play' as strategies for war tourism in regards to the visitors' experience at the Dybbøl battlefield centre, a war heritage site in Denmark. The author reflects on the issues involved in embracing emotion, experience, simulation and play when it comes to the interpretation of sites of war and atrocity:

Experience seems to be the word of the day in today's heritage industry. Over the past two decades, it has become widely accepted that to stay in business, museums and historical attractions must stress multi-sensory communication, a personal, dialogic or 'interactive' involvement with the visitor, and speak to their sentiments and emotions instead of their reason and rationality²⁰.

As Daughbjerg explains, if on the one hand "war as a subject is eminently suitable for emotional utilisation", on the other hand it is

... a playful learning approach advocated by most educational experts and museum communication theorists meets with firm resistance from those who argue that war sites should be characterized by solemnity, respect, remembrance and contemplation, not experiments in 'experience' and replayed war scenes.²¹

The battlefield centre was established in 1992 and managed to secure ministerial funding,

specifically because it adopted this experiential approach to actualise what the author refer to as an “experiential dimension of heritage communication”. This mode of interpretation and communication of the heritage of war enables an immersive, subjective, personal, and multi-sensory response and interaction with the content and site:

The visitors, it is believed, need to immerse themselves physically; they need to smell the gunpowder, hear the thundering guns, and feel the fleas in the hay-filled sleeping huts of the Danish 1864 soldiers²².

Concerns with this playful approach to war site interpretation have emerged from an evaluation field study conducted by the Daugbjerg, which portrayed a rather dissonant response from visitors. The study reported an enthusiastic response from families with young children, who have seemed to embrace this playful, hands-on approach to battlefield experience unconditionally. On the other hand, responses from visitors with a German background criticised the lack of counter-representation within the museum’s experiential approach. Other visitors addressed a problematic breeding of nationalism, with a consequent risk of romanticization and uncritical engagement with the war past. Reservations about militarism was also another concern, and a lack of seriousness and appropriateness were also indicated as a problem in the immersive experience of enacting a war site as promoted by the museum.

The reflections posed by Daugbjerg are very relevant to this research as they raise questions concerning the representation of marginal and counter histories within contemporary experiential strategies as deployed by today’s heritage industry. Immersive approaches are somehow facilitated by the pervasiveness and widespread availability of digital simulations, interactive technologies and multi-sensorial environments engaging visitors with cultural heritage collections and realtime experiences at heritage sites. The difference between ‘experiences’ and ‘experience economy’ helps to take the discussion further:

Experiences and experience economy are significantly different. The first as Pine and Gilmore explain are inherently personal, existing only in the mind of an individual who has been engaged on an emotional, physical, intellectual or even spiritual level. The latter occurs when a company intentionally uses services as the stage, and goods as props, to engage individual customers in a way that creates a memorable event.²³

In this perspective the argument of the research, which I will present in the next paragraph, is concerned with those subjective, intimate and emotional experiences that can be enabled by interpretive strategies of curatorial design that develop interactive and multisensorial environments. Among potential problems for designers, curators and practitioners in the field are considerations or responses to a need for [a] respectful approach, conscientious[ness] and non-involved contemplation. John Urry notes that “these places of death and play are complex, entailing performances of respect, collective grief, and emotion”²⁴.

3.4 Introducing the research problem

Integration of digital media in museums' environments enables of an experiential approach to the mediation of cultural heritage. However, as Daugbjerg argues, this approach, especially when subjecting a forced entertainment on visitors, can be problematic when dealing with contested topics, marginal histories and counter-representations of memory.

Among the extensive theorisation and evaluation of existing practices concerning the role of digital media in museums for engagement and entertainment purposes, in particular those focused on digital heritage²⁵, I am interested in exploring how curators and designers are taking advantage of the availability of these technologies of engagement to enable experiences that are reflexive and introspective, negotiate of our sense of self and of the other, as well as transferring agency to our body and senses in mediating the encounter with other cultures, places and histories.

Early new media artists and theorists such as Simon Penny, David Rokeby and Lev Manovich have contributed to defining the aesthetics of new media by examining the knowledge that is produced in the interaction between the user, the author and the interactive system. Penny describes the "embodied behaviour of the user"²⁶ as that which defines the aesthetics of interactive media. The specificity of what Penny refers to as a "procedural aesthetics"²⁷, that is a production of meaning that happens in the making, is not given but rather lies in the interaction between the physical actions of the user and the system's expressions, be they sound, images, graphic, text or mechanical events. Penny argues that in this context, interactions between users and images, "makes such an image more than an image"²⁸. David Rokeby, new media artist and theorist reflects on how interactivity engages subjectivity. "An interactive technology", he proposes, "is a medium through which we communicate with ourselves... a mirror"²⁹. This contrasts with a common interpretation of immersive experiences and engagement with interactive media as an extension of the body or as an "out of body experience"³⁰.

This new aesthetics, which Anna Munster describes as 'baroque'³¹, others define as 'procedural', or happening in the making³², while some, borrowing from Borriaud, characterise it as 'relational'³³ or 'recombinatory'³⁴, challenges the way knowledge is created by transferring agency to the user who participates in the co-production and co-creation of the work. Interactions between users and system can be multimodal, thus engaging multiple senses at a time through different modes of communication. The research aims to explore the interpretive potential of using 'interaction' and 'participation' as modalities of mediating experiences with cultural heritage in museums by opening up possibilities of embodiment, intimacy and belonging.

3.5 Constructing an argument

Participating in the current discourse on the inclusive role of museums in a multicultural society, the research poses questions on how curatorial design practices can develop an integrative approach combining spatial practices and digital mediation in order to create a space of contact between cultures and histories that is both responsive to interaction and open to participation.

In the culture of consumption and spectacle discussed by Agamben, museums hold a great responsibility. They are responsible for affording a space for lived experiences that can engage us on multiple levels, sensorially, intellectually, emotionally, thus enabling a suspended time away from consumption and everyday life, a place where it is possible to re-connect to oneself and to get in contact with other cultures, ideas, histories and perspectives. In the entertaining museum there is often little space for contemplation, silence and for meaningful experiences and encounters.

The thesis is an exploration of the possibilities opened up by digital technologies, responsive environments, interactive interfaces and physical computing to negotiate an embodied experience with the past, the 'other' and with our memory. The research poses questions on how curatorial design practices can enable strategies of embodiment, sensorial engagement and participation that facilitate intimacy and enable difference as ways of knowing and encountering the 'Other' within museum-based interactions.

The main concern of the research is an exploration of the impact of digital technologies to augment and/or simulate sensory engagement and embodied experience as a new way of knowing, about the world, others, and ourselves. My argument is that this way of knowing can be facilitated by curatorial design practices that utilise an integrative approach to spatial design and interpretation, thus enabling multisensory engagement and embodied interaction.

Reflecting on the sensory engagement afforded by responsive environments in different museum contexts, the research examines the curatorial and design strategies applied to create engagement with objects, memories and places. If, on the one hand, this engagement is seen as desirable, on the other hand it opens up questions and problems. Can technology actually create and/or simulate a sensory engagement? Does this create an 'authentic' sensory engagement or does it allow a new and different experience altogether? What is the value of that technologically mediated experience? How does this relate to the agenda of the inclusive museum in terms of affording a zone of encounter and contact with different cultures, marginal histories and counter representations?

The research develops a series of studies to explore and test the argument and questions raised in ways that are practical, performative and situated. Some studies offer a critical analysis of

existing exhibitions in various museums, others are developed by myself in a studio mode as a curator and designer. The research practices offer an experimental ground where we can critically explore and reflect on the possibilities of interpretation and mediation of curatorial design within the new territory opened up by technology. This offers a negotiation experience where (re)constructing the past and a space wherein to explore the role of digital media in enabling and/or simulating an embodied interaction between the present and the past.

3.5.1 Aims

The research aims to explore new possibilities opened up by digital media, interactivity, and sensory based interaction for curatorial design to renegotiate participation, embodiment, intimacy and sensorial knowing within museum-based interactions. The research case studies, presented in the next paragraph, form a testing ground where to critically and practically investigate interpretive strategies adopting participation and interaction in designing engagement with cultural heritage.

The case studies are test pieces to explore the components and 'profanating' procedures of curatorial design in terms of its capacity to challenge dominant paradigms of representation within the framework of contemporary museums as 'differentiating machines', thereby opening up a space where marginal histories, partial views, and counter representations not only can be represented, but can also be embodied and performed.

Within the case studies the research aims to critically explore the roles of – and interactions between – authors, designers, curators, participants, objects, media and environments as an integrative approach to curatorial design. In doing so it looks at the questions and values informing the works of designers and curators, thus understanding how these strategies develop through their practice.

3.5.2 Objectives:

The research objectives are:

- to explore problems and opportunities in the adoption of an experiential and participatory approach to the mediation cultural heritage within museum-based interactions.
- to critically and reflexively investigate relationships between memory, affect, identity, embodiment and difference as elements that underpin the strategies adopted by curatorial design within cultural heritage practices.
- to explore the components of the visitor's experience while alert to how intimacy, embodiment and agency are renegotiated.
- to investigate the process involved in curatorial design by looking at interactions between the authors, the role of users in the co-creation/ curation of the work, and the effect on authorship, time, space and the body.
- to explore an integrative approach to curatorial design from a situated and contextual perspective.

- to build a reference of significant works of curatorial design practices for heritage and museum managers, curators, exhibition designers, and interested practitioners to relate to and reflect upon.

3.6 Research design

Every research initiates from a point of interest, a motivation and personal drive. As Paul Carter explains, “interest is what matters in creative research”³⁵ and forms the base of the ethics of invention. As I explained in the previous chapter, my motivation was triggered by an interest in stories and the transformations through which storytelling has evolved engaging different media and narrative forms. This research started with a question: can the art of telling stories, that which, according to Benjamin, is vanishing due to the decrease of communicable experience, be somehow re-performed and renegotiated within the museum through engagement with forms that enable interaction and participation with that past?

The research case studies provide a distinct perspective from which to look at the way curatorial design can mediate narratives and sensory experiences around objects and stories. They allow an angle through which to understand the transformative potential of interactive media environments, offering lenses through which we look at reality, the past and ourselves. Each case study analyses the strategies adopted to renegotiate aesthetic experiences, affective and embodied interactions between the present and the past and examines how participation and interaction can be sustained and carried forward from a critical perspective.

Introducing the case studies

The research case studies explore ways of interpreting cultural heritage through digital mediation and renegotiation of experience, thereby extending the notion of the museum beyond exhibition spaces, and comprising landscapes, objects, digital spaces as well as physical bodies. In doing so they open up a set of relationships between authors, audiences, participants, places, objects, memories and archives. Each case study offers a critical perspective from which to explore how tangible and intangible heritage can be mediated, spatialised and embodied. They reflect on the ways narratives are constructed through the entanglement of people and things, artefacts, objects, oral histories, physical and digital spaces, and everyday experience.

3.6.1 *The Audiovisual Museum of Italian Resistance* by Studio Azzurro, Fosdinovo, Italy, 2000.

The museum is a memorial of the histories of the Resistance movement in the provinces of Massa Carrara and La Spezia. An interactive installation brings to life the memories of those partisans, farmers, deportees, inmates and women who survived Fascist and Nazi domination. Passing their hands over the surface of a table, visitors can flick through a collection of stories portrayed as a virtual book on the subject. Visitors are engaged in a dialogue with the testimonies of the Resistance movement through aural, visual and tactile interactions. In the

words of the artist Paolo Rosa:

Tactile perception works in the museum as a means to physically engage the audience, it is the equivalent of asking a question. The prevailing aspect of the installation is oral communication, as words are what matters, the way of speaking, the characteristics of the voice. Also the size of the portraits is significant, as one can read the geography of facial expressions, and thus all the emotions that come through facial displays, the eyes. The intensity of the emotions is amplified by the size of the portrait, which seems to run into you transferring the potency of oral communication. This takes you inside the story, immerse you in history. There's a very strong experiential empathy here.³⁶

3.6.2 *Place-Hampi* at the Immigration Museum, Melbourne, iCinema research team, UNSW, 2008.

Place-Hampi is a modular interactive cinema that engages audiences with embodied participation in the drama of Hindu mythology located at the World Heritage site Vijayanagara (Hampi) in South India. The installation reveals the site of the ancient Hindu kingdom of Vijayanagara as a multi-inhabited place where history, the natural environment, mythology and everyday cultural practices are closely intertwined. As Sarah Kenderdine, the I-Cinema team researcher explains:

Through the Advanced Visualization Interactive Environment a translation of spatial potential is enacted in *Place-Hampi* where participants are able to transform myths into the drama of a co-evolutionary narrative by their actions within the virtual landscape and through the creation of a virtual heritage embodiment of a real world dynamic. *Place-Hampi* restores symmetry to the autonomy of interactions with in virtual heritage and allows machine and human entities to make narrative sense of each other's actions³⁷.

The case studies that follow have been initiated and developed by myself as a curator, designer and project coordinator.

3.6.3 *Lost and Found. Belongings: a sensory experience of Australia's migration heritage*

Belongings: post-WW2 Migration Memories and Journeys, is a community oral history project and web site exhibition developed by the NSW Migration Heritage Centre between 2005 and 2009. An original concept by John Petersen, manager of the Centre, and the curator Andrea Fernandes, *Belongings* brings to life more than one hundred and fifty oral histories from former migrants who arrived in Australia after the Second World War. Personal stories are told through people's memorabilia and special belongings that accompanied these migrants in their life-changing journey to another country.

The research case study develops an interactive, responsive environment through which one can experiment with different modalities of interaction in *Belongings'* media archive. This aims to shift memories of migration from a web-based experience to a tactile interaction between physical objects and the stories associated with them.

3.6.4 *Living Streams: Augmented Reality* experience of the Georges River in Liverpool (NSW)

The case study explores ways of 'making locality' through the conception, development and performative application of augmented reality and location-based applications in the area of the Georges River in Liverpool, a municipality within the Greater Sydney metropolitan area. The Georges River, flowing through the Liverpool Local Government Area, is of great cultural significance and has a rich tapestry of history. This case study undertakes a creative use of location-aware technologies in order to create an enhanced multimedia environment that is responsive to the presence of the user in the space by means of various mobile platforms and interactive map-based interfaces.

It explores the dialectic that exists between a global-connectedness afforded by mobile communication and place-bound knowledge of the river, and its natural and cultural heritage. It uses specific methods related to mapping and locative media that aim to renegotiate interactions between water, histories, place and community. By engaging local people who come from different ages and backgrounds in the telling of the river's stories, the case study explores new ways of inhabiting, traversing, remembering and making place as transformative acts renegotiating engagement with cultural and natural heritage.

3.6.5 *Resonances: lives, objects and stories of Liverpool*

The case study details the development of a permanent exhibition at Liverpool's Regional Museum. The museum collection consists of photographs, oral histories and artefacts from working, domestic and everyday life, industrial heritage, family history and migration heritage. The museum's collection, mostly comprising items that have been donated by citizens and families, is very heterogeneous. The curatorial strategies interpret and mediate this rich and diverse heritage engaging visitors in the making of their own exploratory paths to discover Liverpool's past. In a multimedia environment that is responsive to the visitors' presence, movements and choices, objects become agents as they trigger visitors' encounters with people's memories, cherished donations and life histories in the museum.

3.7 Innovation and Significance

The research responds to extensive applications of digital media in museums for engagement and learning purposes. The case studies offer an experimental ground wherein to test in a situated and contextual fashion the possibility of participation, embodied interaction and affective communication in mediating both tangible and intangible heritage.

The research will extend critical reflections on museum studies, cultural theory, curatorial and exhibition design theory and practice by exploring the interactions between authors and audiences in the co-creation of the work, the role of the interface in constructing difference and subjectivity and reframing experience in the museum.

It will pioneer a critical, reflexive and systematic experimental framework of practices that engage specifically with archival records, such as oral histories and audio/ visual records from media archives. This will produce a reference for analysis, development and evaluation of practices in the field that researchers, designers, as well as curators and museum managers, as well as heritage specialists will be able to reference in their work and build upon.

The significance and innovation of the research is found in the following elements:

- foregrounding an integrative approach to curatorial design by adopting a participative model for interpretation and representation of cultural heritage.
- contributing to the discourse on interactivity and its politics and aesthetics through a critical investigation and developing an informed, situated perspective based on a series of case studies that engage specifically with Australian cultural heritage.
- an understanding of how experience is conveyed, spatial and digital interactions are conceived and designed, the interpretative strategies involved, the relationships between authors and audiences and the effects on time, space and the body.

In the next chapter I will introduce the methods employed for the critical analysis of the practices presented. I will then introduce the research's interpretive framework, which forms the ground where philosophical questions intersect with the situated knowledge that is produced through practice, and the interactions that take place between the actors, materials, theory, places and objects.

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- 1 Agamben, G., 1993, *Infancy and History*, London: Verso, p.13
 - 2 Agamben, G., 1993, *Ibid*, p.15.
 - 3 Agamben, G., 1993, *Ibid*, p.20.
 - 4 Agamben, G., 1993, *Ibid*, p.47.
 - 5 Agamben, G., 2007. *Profanations*, New York: Zone Books.
 - 6 Agamben, G., 2007, *Ibid*, p.82.
 - 7 Agamben, G., 2007, *Ibid*, p.85, 86.
 - 8 Agamben, G., 2007, *Ibid*, p.75.
 - 9 Agamben, G., 2007, *Ibid*, p.76.
 - 10 Agamben, G., 2007, *Ibid*, p.76.
 - 11 Emile Benveniste, 1947, *Le jeu comme structure*, Deucalion 2, cited in Agamben, G., 1993, *Op.cit*, p.76.
 - 12 Agamben, G., 1993, *Op.cit.*, p.70
 - 13 Agamben, G., 2007, *Op.cit*, p.74
 - 14 Agamben, G., 2007, *Ibid*, p.84
 - 15 Bann, S., 1995. *Shrines, Curiosities and the Rhetoric of Display*. In Ly. Cooke & P. Wollen, eds. *Visual Display: Culture Beyond Appearances*. Seattle: Bay Press, pp. 14–29
 - 16 Hooper-Greenhill, E., 2000. *Museums and the Interpretation of Visual Culture*, New York: Routledge.
 - 17 Pearce, S., 1999. *Collecting as medium and message*. In E. Hooper-Greenhill, ed. *Museum, media, message*. London: Routledge, pp. 15–23
 - 18 Cranny-Francis, A., 2008. *From extension to engagement: mapping the imaginary of wearable technology*. *Visual Communication*, 7(3), pp.363–382.
 - 19 Butler, J., 1999. *Gender trouble: feminism and the subversion of identity*, New York: Routledge.
 - 20 Daugbjerg, M., 2011. *Playing with fire : struggling with experience and play in war tourism*. *Museum and Society*, 9(1), pp.17–33, p.17.
 - 21 Daugbjerg, M., 2011. *Ibid*, p.17.
 - 22 Daugbjerg, M., 2011. *Ibid*, p.18.
 - 23 Daugbjerg, M., 2011. *Ibid*, p.20.
 - 24 Urry, J., 2004. *Death in Venice*. In J. Urry & M. Sheller, eds. *Tourism Mobilities. Places to Play, Places in Play*. London; New York: Routledge, pp. 205–215, p.211.

- 25 Parry, R., 2005. Digital heritage and the rise of theory in museum computing. *Museum Management and Curatorship*, 20(4), pp.333–348.
- 26 Penny, S., 2003. Representation, Enaction, and the Ethics of Simulation. In N. Wardrip-Fruin & P. Harrigan, eds. *First person: new media as story, performance, and game*. Cambridge, Mass.: MIT Press, pp. 73–84, p.83.
- 27 Penny, S., 2003. *Ibid*, p.83.
- 28 Penny, S., 2003. *Ibid*, p.83.
- 29 Rokeby, D., 1995. Transforming Mirrors: Subjectivity and Control in Interactive Media. In S. Penny, ed. *Critical issues in electronic media*. Albany: State University of New York Press, pp. 133–158, p.133.
- 30 Huhtamo, E., 1995. Encapsulated Bodies in Motion: Simulators and the Quest for Total Immersion. In S. Penny, ed. *Critical issues in electronic media*. Albany: State University of New York Press, pp. 158–186, p.161.
- 31 Munster, A., 2006. *Materializing new media : embodiment in information aesthetics*, Dartmouth, N.H.: Dartmouth College Press.
- 32 Penny, S., 2003. *Op.cit*.
- 33 Bourriaud, N., 2002. *Relational aesthetics*, Dijon: Les presses du réel.
- 34 Hui, Y., 2011. Interview with Jeffrey Shaw on new media art. Available at: <http://theoryculturesociety.blogspot.co.uk/2011/04/interview-with-jeffrey-shaw-on-new.html> [Accessed July 1, 2013].
- 35 Carter, P., 2007. Interest: The Ethics of Invention. In E. Barrett & B. Bolt, eds. *Practice as research : approaches to creative arts enquiry*. London: Tauris, pp. 15–25, p.18.
- 36 Veronesi, F., September 2010. Interview with Paolo Rosa, Studio Azzurro, Milan.
- 37 Kenderdine, S., 2008. The Irreducible Ensemble: Place-Hampi. *Virtual Systems and Multimedia Lecture Notes in Computer Science*, 4280, pp.58–72, p.58.

4 METHODS AND INTERPRETATIVE FRAMEWORK

Introduction

This chapter introduces the methods and the development of an interpretive framework, whereby many of the methods and practices are developed in response to the research aims and objectives. At the core of this research is the ongoing interplay between the theoretical discourse and the practice-based participatory experiments staging and producing knowledge in practical ways. This approach requires the development of interactive environments, physical interfaces, participatory studies as well as an interpretative framework intertwining the theoretical and practical tracks of the research. The interpretation crosses and relates feminist theories of subjectivity, visual culture's theories of embodiment and performativity, material culture studies on object-centred knowledge as well as design theory and sense studies. These form the theoretical basis for the development of responsive environments that address the aims of the research in ways that are participatory, experimental and experiential. In this approach, instruments and technology that are employed for digital mediation of cultural heritage, such as Augmented Reality applications and Radio Frequency Identification methods, have been re-appropriated in order to renegotiate alternative engagement forms, thus reinstating new relations and connections between people, places, objects and memory.

As performed in this approach, the 'necessity of invention' forms the basis of any creative research which, according to Paul Carter, responds to three conditions: "it has to describe a forming situation. It has to articulate the discursive and plastic intelligence of materials. And it has to establish the necessity of design"¹. My desire to engage with the heritage of migration and my encounters with oral history archives shaped the interests of this research. The 'informing situation' emerged from the simultaneity of my investigations of multiple, interdisciplinary perspectives exploring place, the body, affective experience, sense knowledge and material culture and their intersection with my context as a curator and designer of participatory practices engaging with cultural heritage. The availability of resources, such as

the oral history archive as well as the demand from the community to engage with their local heritage, can be looked at as the contingencies that shaped the context in which to experiment with the necessity of design. This requires the invention of new instruments and approaches to explore questions of participation and embodiment that are complex and demand an attitude that is empathic and immersive.

4.1 Immersion, empathy and engagement: The research as a situated and social process

Donna Haraway (1988) claims that all academic research is a highly ‘situated’ and ‘positioned’ knowledge that arises from particular combinations of people, places, objects and ideas². To exemplify the positionality of the researcher within the context of the research, the cultural anthropologist Ann Galloway describes her methods as a ‘bricolage’ and quoting Valerie Janesick, a scholar in education and policy studies, suggests a comparison with choreography:

My approach to methodological bricolage can also be seen to share something in common with choreography. Both qualitative research and choreography are highly situated, and continually recontextualised, within shared experiences—and ‘both refuse to separate art from ordinary experience’³. More generally, just as a choreographer combines the prescriptions of the minuet with various improvisations, the *bricoleur* can be seen to move through various stages of research and writing, some more structured than others⁴.

Continuing with the metaphor of choreography as an example of the engagement of the artist/researcher with the field of her practice I use Pina Bausch’s urban explorations of the series ‘*The World Cities*’. Bausch conducted her urban explorations for over a year before working on the choreography of a city. This immersion in the spatial, social and cultural fabric of the city enabled a first-hand, lived, experience of the urban environment. The performance is itself a dramaturgy of the city, revealing and staging some of the existing tensions anticipated in the urban explorations. In the mutual influences that shape the inner world of the subject – here the choreographer – and the outer world of the city, we should consider that influence manifesting itself in the reciprocity of the choreographer dancing and at the same time as being ‘danced’ by the environment. The agency is shifted to the context, the place, the city. The artist/choreographer/researcher is there to receive, to meet the milieu, through immersion and empathy. She is open to respond to whatever arises from the environment.

I discuss my involvement with local communities, participants and the local context in each of the research case studies. The methods of engagement vary. They involve listening, collaboration, engagement with – and learning from – the community, employing a wide and diverse range of ethnographic methods such as questionnaires, structured interviews, informal conversations, participant observation, self-reflective accounts as well as discourse analysis of

material and data from different sources.

The combination of these methods, together with context-specific investigative tools developed for each case study, create a ‘bricolage’ of methods that explore the complex networked process underpinning the creative research practices in both contextual and situated ways. This process is shaped by the dynamics, mutual influences and interactions between authors, the artists/designers/curators, and the co-authors – the audiences and participants – and the collaborations that emerge.

Research methods both foster and examine the relational and social aspect of creative research and its potential for reinventing and creating new relations among the subjects who participate in the process: from authors, to curators, designers, historians, artists, heritage managers, community representatives and to audiences more broadly.

Research methods are concerned with an integrative approach to curatorial design combining the design of physical interfaces, digital applications, multimedia environments, responsive exhibition spaces and the interpretive strategies involved. These strategies explore ways to renegotiate intimacy and engagement with problematic topics such as counter histories of war and migration heritage – as in the case of *Museum of Italian Resistance* and *Belongings* – translation of Hindu place-based mythologies and narratives to Western audiences – as in *Place Hampi* – the mediation of place-based knowledge, and a sense of identity and belonging in relation to local history and community intangible heritage – as in the case of Liverpool’s *Living Streams* and *Resonances*.

In examining and developing the practices from a situated perspective, questions are posed with regards to the kind of experience that is mediated by the manipulation of what Benjamin refers to as “the raw material of human existence”, which develops through an “accord of words, soul, eye and hand”⁵. How does the experience of mediating place-based knowledge, the physical touch of objects, and the affective being touched by the stories associated with them, affect our capacity of remembering, our connections with places, people and their past? Audiences, with their bodies, senses, emotions, subjectivity and interest can be looked at as agents performing in the narrative and sensorial environments created in the research practices. However an in-depth investigation of the audience experience is not the focus of this research, a series of ethnographic methods are applied in order to explore the quality of the engagement of visitors, or to propose ways to design context-specific audience studies. Hence ‘participation’ is the overarching concept underpinning the research practices and is also concerned with ways to integrate a participatory approach to curatorial design by adopting strategies that enable engagement and embodiment through a shared, co-authored approach negotiating the experience of cultural heritage.

4.2 Practice as research: Emergent and situated methods

With regard to practice-based research, Estelle Barrett points out that this way of doing research involves an ongoing “interaction between theory and practice in the production of knowledge.”⁶ *Enchanted Teleidoscopes* proceeds through a continual moving back and forth between established theory and the situated knowledge that emerges in the practices.

In framing the theoretical ground of artistic research as practice, Barrett argues that, given its nature, a practice or a studio-based mode of enquiry requires methods that are “necessarily emergent, interdisciplinary and subjective”⁷. Pierre Bourdieu describes the ‘logic of practice’⁸ as operating through strategies that are not pre-determined but emerge according to specific demands and contingencies. According to Barrett the field of practice-based research cannot be established in an identifiable location. Rather, the research field is defined by the connections it creates among disciplines and different domains.

In order to capture and map the complexity of the networked creative process I use a methodological approach combining both established as well as emergent methods. Methods cannot be pre-determined, yet they also need to be examined and implemented within the dialogue that each case study opens up between theory and practice. When exploring curatorial strategies dealing with the intangible heritage of migration including for instance, the migrants’ histories which tell about their life journey to Australia, I apply ethnographic methods that are concerned with a critical examination of the path that private stories undertake in becoming public. Questions are posed throughout the interpretive process by examining the passage through which stories are translated from the memory of a participant, recorded by the interviewer and then transferred to the archive where these are made available to the public. Then it looks at how, in this translation from oral to textual communication, and from private memory to public display, stories are transferred and mediated. The curatorial strategies explore ways to connect with this heritage through participation and embodiment, thereby using physical touch as a vehicle of engagement.

As Carter and Bolt point out, both the material thinking and the materialising practices involved in a practice-based research imply an “on-going performative engagement – with the research – at both moments of production and consumption”⁹. Carter argues that when outcomes of artistic research are staged, the particularity and specificity of experience involved in artistic research returns to the universal¹⁰. When developing a studio-mode of enquiry I found it very useful to apply this categorisation of ‘production’ and ‘consumption’ to the different stages of the design process.

The production stage of the research, when developed in a studio-based mode, encompasses archival research and data gathering, design, adaptation of prototyped technology, implementation of media content, user test runs and auto-ethnographical methods which

include journal compilation and reflexive documentation of the researcher's investigative process.

The 'consumption' or circulating stage involves staging the outcomes of the design and research's deliverables. This stage explores the audience responses and experiences through participant observation, audiovisual documentation, audience surveys, conversations and in-depth interviews with audience members and first-hand accounts. To encourage or inspire responses from audiences in the staging phase I implement cultural probes – a by-now well established design method.

A simulation of the way stories are passed on from person to person was developed in *Belongings* for instance, where participants were asked to send a postcard to the authors of the stories, as if they were involved in a fictional correspondence, and to write their responses and/or comments on what they heard, and the memories and sensations that their experience may have triggered. These probes aim to explore the potential of the re-created narrative environment to mediate the lived experience of the migrants' journey as well as enhancing engagement with their personal stories.

Production and circulation stages are not explored in an equal manner for each case study. Rather, prominence is given to exploration of specific questions arising from practice and its interplay with relevant theory. Theoretical threads running throughout the research are explored as an open-ended and on-going enquiry where theory and practice intertwine and mutually inform each other.

4.2.1 Interviews

In her exegesis on creative research, Barrett proposes the adaptation of Foucault's concept of the 'author's function' in order to articulate the understanding of both processes and outcomes of creative production¹¹. The concept of the 'author's function' is instrumental in the exploration of all the actors involved in the curatorial design process, as the many 'dispersed selves' of the author – a 'trans-discursive' individual who operates to create meaning – interpret and mediate meaning and experience.

I conduct in-depth, semi-structured interviews with designers, researchers, museum curators, historians and heritage service managers, asking questions regarding their role within the curatorial design process, the strategies employed, their experience of collaborating with members of the design team, their comments on (and response to) the design's outcomes and audience experience.

Interviews are then edited and collated as if they formed a fictional dialogue. This simulates a simultaneous presence of the actors that participate within the design process, linking in the same conversation the plurality of voices that are involved in performing as in a discursive narrative. These are artists, designers, historians, curators, audience members, heritage service managers, all of whom are involved in a conversation that happens both simultaneously and at

a distance. Conversations begin as face-to-face interviews then develop through the discourse analysis of texts from a diverse range of sources, from published materials to websites, exhibition catalogues and other web sources.

4.2.2 Exploring curatorial design strategies: embodiment and experience

My experience of participating as a spectator to the exhibitions staged at the *Museum of Resistance* and *Place Hampi* is recorded, where possible, through real time navigation with a live audio-video commentary. This aims to capture in a reflexive way the stream of perceptions, thoughts and emotions that form my response to the work. The use of audio video commentary, user questionnaires, informal and semi-structured interviews with designers and curators, informal conversations as well specific cultural probes all constitute my bricolage of methods investigating the creative process of curatorial design as a social and cultural practice.

Engaging with the context and the local community links back to what Carter refers to as the 'informing situation' generating the necessity for design. My position as a performer within the research process is constantly examined in a reflexive and critical way by posing questions on the kind of experience that is mediated in the transfer of memory from an initial act of testimony, be this a migrant, describing her life journey to a new country, a partisan recounting his everyday battle to survive under the Fascist domination, an Aboriginal elder remembering places and ways of living by a river that no longer exists, to the experience of a participant, who re-performs the stories in the museum.

Both production of new works, as well as investigation of existing practices, focus on the role played by objects, bodies, senses, and technologies in mediating resonance, wonder, enchantment and the embodiment of the experience. Given the performative mediation and translations that occur in reaction to cultural heritage during this process, the research problematises and reflects on how the past, and the memory of it, from being a distant time that is alien and 'other' to us, can be renegotiated, embodied and kept alive in the present through experience.

4.2.3 Performative research

The interpretive framework introduced in the next section, and developed throughout the research, situates this study within the emerging paradigm of performative research. As Haseman puts it, "the practice in practice-led research is primary – it is not an optional extra; it is the necessary pre-condition of engagement in performative research"¹²

From the outset, it is clear that performative research will move beyond current qualitative research practices for, in order to do its work, new strategies and methods have to be (and some have been) invented. The new strategies and methods are dictated by the phenomena being investigated and the recognition that the current repertoire of quantitative methodological tools – particularly discursive prose – will not accommodate completely the surplus of emotional and cognitive operations

and outputs thrown up by the practitioner¹³.

An increasing number of scholars are endorsing creative and performative research as a form of inquiry that can relate and entwine theory and practice in an ongoing and questioning process. Carole Gray examines closely the process of creative research:

... firstly research which is initiated in practice, where questions, problems, challenges are identified and formed by the needs of practice and practitioners; and secondly, that the research strategy is carried out through practice, using predominantly methodologies and specific methods familiar to us as practitioners¹⁴

Barrett discusses further the emerging interrelationship between theory and practice in creative research and the material nature of the 'praxical knowledge' that is produced:

Praxical knowledge implies that ideas and theory are ultimately the result of practice rather than vice versa. (...) These effects, broadly understood as 'knowledge' emerge through material processes¹⁵.

Shane Strange welcomes the uncertainty of outcomes and the contingency of creative practice, emphasizing the role of the processual knowledge that is generated through practice and the possibilities that are opened up of reinventing social relations within the research process. A form of resistance to objectivity is emphasized by many scholars as a qualitative value of creative research, and this contributes to an understanding of creative research as a performative act. Bolt claims that creative research is about acting in the world, and thus moving away from a descriptive and observational paradigm. Strange comments on this argument, proposing that:

... creative research in this mode advances the kind of subjectivity that seeks to move beyond existing social relations, offering a form of resistance to orthodox research paradigms and therefore a projection of what is new¹⁶.

Carter proposes a model for creative research practice "to broker partnerships between 'end users' (clients, industry partners, communities or government agencies) and 'research producers' (ourselves)"¹⁷. I envisage this model as informed by the context in which it takes place, and I will discuss it further in the *Living Streams* case study when looking at notions of geography and place-based knowledge. In many ways the methods experimented with in this research are driven by the locations where they were tested. As explained by Carter, place-based knowledge defines places as relationships that are created in the interaction of people with a place and with each other. Drawing on Irit Rogoff's reflections on geography, I propose that the methodological approach developed in this research is an 'affect' of the

situated knowledge of the place:

I think cartography is an affect of geography. Rather than thinking of it as a tool, an instrument, a language. For a long time I understood cartography as a possibility for representation and counter representation. I see it now as a tripartite activity, that involves a situation, the effort to come to term with situation which is the cartographic activity, and finally a slippery outcome that operates as an affect of economy. It is the slippery outcome that I'm totally fascinated by. (...) Geography is not location but a situated knowledge. Who we are, where we are, what we know, what our heritage is and allegiances are, has always been linked to geography. Not as a set of locating vectors, but rather as places, traditions and trajectories of knowledge. Each place knows differently¹⁸.

To delve further into the two-fold influence that occurs between my self as the researcher and the context of my research, a relationship that mutually affects each other, I would like to bring in a reflection from Wim Wenders about his relations with places and the ways these have inspired, directed and guided his creative work in unexpected ways:

I lived for 8 years in America. Then I moved back to Germany and settled for the first time in the city of Berlin totally rediscovered my own country. I wanted to know all about these people, their past, their history, their secret thoughts... It was the city that induced this desire. I wanted to tell THIS CITY'S STORY. Walking around and staring at houses I saw a huge amount of decoration, pillars, arches, and stuff I had not noticed before. A lot of them were incorporating angel figures, to my amazement. Every second statue, and there were lots of them, depicted angels. A lot of names evoked them. Cemeteries, finally, were crowded with them. So the city slowly imposed these figures on me: Angels. (...) What thesis? That places find stories and make them happen. Not that stories happen anyway, and just need locations to take place in¹⁹.

4.2.4 Art-led methods

Matthew Fuller discusses the modes by which art participates and proliferates within everyday life, the ways art and life intersect and fecundate each other. Fuller explores this process of art's migration into life forms by addressing art methods as "cultural entities, embodied in speech, texts, sounds, behaviours and the modes of connection between things that share and develop, work on, art's capacity of disturbance and the multi-scalar engorgement of perception"²⁰. Discussing the ways art methods operate, Fuller proposes they initiate a dialogue with

... what is no longer possible and what has no yet been done, with resources from objects, traditions, ideas and waste distributed - sinking into and emerging from

time. Such time is also related to the experiential thickness of carnality. Art stages the occurrence of things, their revelation or palpability in a way which resists their easy ability to be known. That is, art insists upon the staging of an engagement with it that includes the simultaneity, that is potentially endlessly maintained, of all stages of anticipation, delay and cognisance²¹.

4.2.5 Simultaneity

Experimenting with the artistry of curatorial design in a real life situation, the research engages with art methods exploring how, for instance, simultaneity can alter perceptions of time and space when texts, memories and objects are translated, displaced and re-embodied from archives and into the museum. The simultaneity enabled by the interaction with interfaces operates on a multimodal basis, working through extended presence, multi-sensory elicitation, spatial displacement, temporal suspension and/or acceleration.

Simultaneous presence also operates by connecting, in the same conversation, the plurality of voices that the research brings together in the discourse. These are artists, designers, historians, curators, audience members and heritage service managers, all involved in a conversation that happens both simultaneously and at a distance. Conversations start as face-to-face interviews, then develop through texts, material related to other works and ideas. This simultaneity of the discourse shapes a form of textuality that is relational and allows for the subjective paths of the user/reader within the text. Simultaneity is deployed here in order to critically examine and connect the recurring concepts, references and key themes that emerge from texts and conversations that are generated within the creative process.

All the 'voices' staging the research production and circulation stages are brought into the discourse as part of a fictional dialogue which shapes the collaborative framework of the practices. From this perspective we can look at the case studies, not as isolated events, but as interrelated clusters, influencing each other and intertwined one with the other.

Mapping instruments are developed throughout the research to articulate, track and visualise the design process as a networked creative practice. Maps are used as tools to visualise the relational aspect of the research and the connections it opens up between the world of things, materials and objects, and the world of thoughts, ideas and theories. They perform as a virtual space, a common platform for all the 'actors' to come together in a conversation: from critical thinkers who have inspired the theoretical paths of the research, to artists and curators, to project participants and audiences. We can look at these maps portraying what Louise Johnson refers to as their "embodied cultural capital"²², that is the network of abilities, skills and values of the individuals and communities involved with the creative production.

4.3 Developing an interpretive framework

Our ways of being in time/ways of knowing/the body and the senses

The interpretive framework of the research performs as a discursive platform bringing a spectrum of different theoretical lenses to the research in order to raise significant questions

within the practices. Running throughout the research, it identifies two theoretical threads, each representing an open-ended and ongoing inquiry. The two threads are intertwined with the research practice, informing each other and posing relevant questions in the existing discourse on museum studies.

Arising from the specificity of its field, the research embraces more universal concepts by looking at how philosophers and critical thinkers have approached problems that reflect more generally on our condition as human beings, exploring questions about time, the past and memory, our ways of being in the world, the way we relate to the 'Other', how we negotiate difference, the ways knowledge is produced, how we generate meaning and the role of the body and senses in the process.

The threads presented in this section intend to intersect multiple domains and detect convergences among a wide set of disciplines, ranging from feminist theories, visual culture, cultural studies, material culture, cognitive studies, phenomenology and human-computer interaction.

1. The first thread looks at our ways of being in time: the relationship with the 'Other', be this a past, a memory, a subject, or the way we negotiate difference. This thread is central to the idea of the museum in a multicultural society and age of migrations, as well as its role as a 'differentiating machine', mediating a multiplicity of voices enabling representation of, and contact with, 'other' cultures and histories. The research suggests that the way histories are represented in the museum can be renegotiated through participatory engagement in the making of meaningful narratives that enable 'difference' and 'intimacy'. Driving questions opened up by this thread in terms of curatorial design, spatial practices and digital mediation are explored in the analysis of existing practices and the making of my own works.

2. The second thread explores ways of knowing and generating meaning, the role of the body and senses in the process, how we relate to the outer world, objects and places, and their role in mediating knowledge. It looks at the power of objects in oral-based cultures and performative practices of keeping knowledge and cultural traditions alive. This poses questions within the domain of museum practices concerning the politics and poetics of exhibiting and representation within museum-based interactions, the role of visitors as performers, and the agency of objects in the meaning making process.

4.3.1 Knowing the 'Other': Difference and Intimacy

This thread stems from Luce Irigaray's lifelong inquiry into the ethics of sexual difference, and looks at the feminist philosopher's latest investigations of the transcendence of the 'Other' by the acknowledgement of difference. In *Sharing the World*, Irigaray insists on the importance of difference and desire as necessary modalities to enable the manifestation of the 'Other's' autonomous sphere. For an encounter to occur with the world of the other, first an irreducible

difference has to be recognised:

As soon as I recognize the otherness of the other as irreducible to me or to my own, the world itself becomes irreducible to a single world: there are always at least two worlds²³.

As a result of our two worlds encountering one another, Irigary suggests that there is a possibility of sharing the world by constructing a new third world. Knowing the other is a question of creating a space that enables this encounter. This space is both physical as well as affective. Irigary recognizes in 'silence' and 'touch' two necessary means for the other to emerge. Silence and touch are seen as a means for an inter-subjectivity that enables the encounter with the world of the other:

A logic that favours the object, and a perception from a distance that allows a grasping of this object, prevents an economy of inter-subjectivity from being revealed to us. Here touch would be the necessary medium—as light and silence are for seeing and listening. (...) Touch becomes the medium par excellence of interiority. The relation between touching and being touched is displaced within the subject, where it articulates a relation between active and passive that requires the passage to another space-time. For the subject to experience himself, or herself, as both affecting and affected, an inward space must be created in which the two take place thanks to a temporal delay in which the active relates to the passive. (...) Returning to and cultivating it is necessary in order to be able to enter into relation with the other as other²⁴.

Respect for the irreducible difference of the 'other' translates firstly in terms of sexual difference: feminine/masculine, and then extends to cultural and political domains such as nationality, religion, community, generation and the many differences that shape our uniqueness as human beings in a multicultural society. As Irigary explains,

... recognising one's own limits as well as the existence of the other as irreducible to one's own existence, and searching for the means of entering into relations with him, or her, [which] will then substitute for appropriation.²⁵

For a dialogue to develop and exchange to occur between oneself and the 'other', there is a need to sense the threshold both separating and allowing the two worlds to manifest themselves in one another:

Silence will no longer be that which has not yet come to language, that which is still lacking words or a sort of ineffability that does not merit interest from language.

Silence is the speaking of the threshold. If this silence does not remain present and active, the whole of discourse loses its most important function: communicating and not merely transmitting information. Then dialogue becomes impossible. In no dialogue can everything be said, and it is recognizing the necessity of something unspeakable and its preservation that allows an exchange of words between two different subjects. It is thanks to silence that the other as other can exist or be, and the two be maintained. Relations between two different subjectivities cannot be set up starting from a shared common meaning, but rather from a silence, which each one agrees to respect in order to let the other be. Entering into communication requires the limits, always effective, of a unique discourse, access to a silence thanks to which another world can manifest itself and take place.²⁶

Irigaray details the importance of cultivating attraction and desire within inter-subjective relations:

Attraction cannot be sacrificed to anyone or anything, including even the most sublime cultural constructions. It must first be brought back to the one who awakened it. Not, of course, through merging into this source (...) Lack of differentiation prevents the cultivation of attraction by annihilating what aroused it: the difference between two subjects.²⁷

Embodying 'difference' is instrumental in fostering a new culture of hospitality and thus creating a space for an intimate sharing in difference, a space where the 'Other' can be met:

I will have had to arrange for the coming of the other, to prepare a space in time in which the other can appear to me, in which I consent to receive and welcome him or her; but I cannot foresee, for all that, how the other will modify my existence – my already-have-been and thus my future – the development of my life. This will depend on the embodiment that will follow our meeting, on the engendering of the one by the other that will result from the encounter between our two singularities: of their welcoming each other, their fertilization of one another. This will depend on a hospitality offered to the other, including in myself, a hospitality that is without pre-established dwelling: entrusted to a letting be.²⁸

Intimacy, difference, embodiment, touch as a means for interiority and silence as vehicles for listening and meeting the 'other': reflecting on these concepts opens up new questions that negotiate the ways of understanding self and others in relation to representations of, and encounters with, other cultures, histories and identities in the museum, including: those who see, listen to, sense, and those who are seen, listened, sensed, both subjects existing in their own autonomous sphere.

4.3.2 Silence as a vehicle of engagement

Irigaray's speculates on difference, intimacy, touch and silence, thereby opening up questions relevant to curatorial design. The research group *Silence, Memory and Empathy in Museums and at Historic Sites* has been exploring a range of different research approaches to silence and empathy, in order to share heritage practices and develop ways of working between academics and practitioners, and proposing ways by which silence operates as a vehicle of engagement with the past:

Silences are significant elements of the ways our pasts are represented. While it is often taken for granted that there are silences at museums and historic sites, the processes by which they operate have been less explicitly conceptualised. As part of such teaching, museums and historic sites now frequently employ strategies of empathy to confront difficult pasts.²⁹

Enquiries in this field are instrumental to the further exploration of the role of conservation practices in the construction of identity and pose questions regarding how heritage can be negotiated and dynamised in order to perform as a connecting ground.

Living Streams addresses specifically the role of natural and cultural landscapes as an interface connecting past and present in Liverpool. Questions posed by the '*Silence, Memory and Empathy*' research project are also relevant to this study:

How does representation in museums and at heritage sites produce and/or make use of silences? How do audiences respond to silence? How can we conceptualise spaces of silence? Do participation and co-production in heritage aid empathetic engagement? What can museums and heritage sites offer in terms of empathy that other forms of memory cannot? How can we make an instrumental case for capturing experiences of silence and empathic unsettlement?³⁰

Posing these questions in the context of a multimedia museum will help to understand the relationship between heritage and subjectivity, and the role of participation, engagement and digital technologies in fostering empathic experiences with the things we preserve and collect from the past.

4.3.3 Touch: exploring relationships between the performer and the instrument

In *Haptic Sensation and Instrumental Transgression*, Pedro Rebelo investigates the aesthetics of engagement in the relationship between the performer and the music instrument. This relationship is looked at as a multimodal participatory space. Drawing on Georges Bataille's writings on eroticism, Rebelo argues that in order for this relation to become an erotic one, there needs to be difference.

And for this, the instrument, rather than as an extension to the body itself, must be placed in-between the performer and a desired state, in which hierarchies between subject and object, between the performer and instrument, are disposed of. (...) Rather than a tool that facilitates music, the instrument is seen as entity that carries its own cultural context. The notion of 'entity' suggests an investigation into uniqueness, distinctiveness and difference.³¹

Within the realm of traditional African music instruments, the author suggests that an instrument such as the Kalimba presents itself as a potentially endless range of variations, from the choice of a resonating material to the construction process:

An underlying factor here is the realization that every instrument will be different. It is different because its materials are inevitably different, but most importantly, it is different because there is no desire to make it the same.³²

The realisation of difference, according to Rebelo, promotes a certain kind of engagement between the performer and instrument that develops by constant adaptation and reconfiguration. Haptic sensation negotiates the recognition of the threshold between the spaces of the performer and that of the instrument:

The player constantly adapts and configures throat position, vocal cavity and breath depending on the resistance of the tube, mouthpiece or reed. (...) If we return to the idea of difference and refer to Georges Bataille's understanding of the erotic, we might gain some insight into how the performer/instrument relationship can be seen as an erotic one. Bataille theorizes the erotic relationship and the notion of sexual differentiation by referring to the difference that is essential for the forming of individual identity. The recognition of this difference is initially in relation to the material world and then to other beings. (...) Bataille refers to difference as an essential part of the sexual being; it is through the understanding of difference that an erotic relationship can occur between one and the other"³³

He then goes on to discuss how difference is an essential component of engagement:

As the performer works towards a desired performative state via the haptic relation with the instrument, the audience projects onto the performer a desire for uniqueness, for difference. (...) In creating technologized performances, it is particularly important to create conditions for engagement that go beyond the operative and the functional.³⁴

This thread, running throughout the research, explores those intersubjective relationships

within curatorial design practices that enable interactions between curators, audiences, represented subjects and objects, places and histories and the role of technology, silence, touch and the other senses in mediating engagement and negotiating difference. The research case studies explore ways of enabling difference through performative interactions between the users/performer and responsive, technologically enhanced, museum spaces. In the context of the case studies the 'Other' can take many forms, that of a migrant, telling of her journey to a new country, or a place with its specific customs and everyday practices. Curatorial and design strategies are devised for their capacity to enable encounters, intimacy and renegotiate difference in different cultural contexts.

4.4 Aesthetic knowing: Objects, Body, Senses

The second 'thread' poses questions regarding the way we know the world, the role of objects and the senses in mediating this knowledge by exploring the relationship between objects and the body and looking at how concepts of object-centred knowledge and embodiment are becoming transdisciplinary and relevant to an increasing number of disciplines such as material culture, museum studies and human-computer interaction.

The power of objects is also discussed in relation to oral cultures such as that of the Australian Indigenous and the role of performative practices in keeping knowledge alive through the power that is conveyed by culture to objects. Paul Carter and Barbara Bolt in their investigation on 'methexis' – derived from Plato and translated as 'participation' – have explored further the performative power of the art object in traditional cultures and its capacity to produce ontological effects in the world.³⁵ Art in traditional cultures such as the Aboriginal, works through a wide range of performative practices, including mapping, storytelling, ceremonies, dances and songs, as a means for participating in and maintaining knowledge. Marius Kwint reminds us of how objects "are instrumental to the formation of consciousness, enabling the self to praise its sense of separation from the world"³⁶. Homi Bhabha extends this by understanding that our relationship with objects holds an authoring component arguing that "objects are the inscribed signs of cultural memory"³⁷. According to Hooper-Greenhill, different ways of knowing objects include "handling, smelling, hearing and seeing, which results in different, specifically inflected knowledge"³⁸.

4.4.1 A return to materiality in the museum?

In posing questions about experiencing objects in a museum setting, Sandra Dudley argues that our experience of the material world is dependent upon our physical position in space – our location and movement – and the interpretation of data we receive from our bodily senses. Material culture studies in anthropology have resurged over the last twenty years, investigating the engagement with objects and material things, the value and meanings people give to inanimate objects, and in turn how objects influence social relationships.

Dudley points out that it is in fact the objects' 'thingness', their materiality, which together

“with our location, movement and interpretations determine how we engage with them and how they influence us”³⁹. In this twofold relationship and mutual influence between the object and the subject, objects are not only “a world of surfaces on which we project significance”⁴⁰, but rather, as Dudley argues, “their material qualities – such as shape, colour, density, texture, surface, size and so on – define our sensory response to them”⁴¹.

In museums, which we might think of as ‘temples of objects’, Dudley notices that in fact objects are physically distanced from visitors, limiting the “extent to which people can directly, physically, engage with the things on display”⁴². Multi-sensory access to objects in museums is usually unavailable. Knowing museums’ objects depends mostly – if not solely – on vision. This, according to Dudley, is limiting and can be misleading: “I cannot be sure of the weight, density, musicality, coldness and surface texture of an objects unless I can touch it”⁴³.

Exploring touch as a vehicle of making meaning and acquiring knowledge, Dudley looks at the subject-object relationship as a twofold one:

... while I am touching an object, I am touched too. It is a two-way interaction enabling an intimacy with the material thing – an intimacy I cannot feel if I only gaze at the thing on a plinth behind a sheet of glass.⁴⁴

The way objects are distanced in museum displays privileges the dominance of vision over the other sensory inputs. As we know from cognitive studies, vision operates by distancing the object of vision from the viewer. “Such distance”, according to Stephen Greenblatt, not only creates a disconnection between viewers and objects, but it also “makes [it] harder to empathise with the feelings of those who originally held the objects, cherished them, collected them, possessed them”⁴⁵. Widening the separation between observers and objects, visions increases the distance between visitors and the people whose objects and stories are mediated into the museum. Limiting physical touch prevents, according to Dudley, “touching what others have touched – and ultimately prevents from physically encountering the past”⁴⁶.

Many museums are carrying out research into sensory approaches to objects through a diverse range of applications by “using touch in reminiscence and therapeutic outreach work” as well as “exploring digital technologies that simulate sensory experience beyond the visual”⁴⁷. These experimental approaches to sense awareness are seen by Dudley as very promising in terms of attempting to fulfill the ultimate goal of a museum, that is –

...to reduce the distance between person and thing [and] to facilitate a wider or deeper sensory and emotional engagement with an object, rather than simply to enable intellectual comprehension of a set of facts presented by the museum and illustrated or punctuated by the object⁴⁸.

4.4.2 Embodied interaction

Aesthetic experience: one that involves the senses, a sensible, sensual, involving perception, sensuous perception. The study of sensory or sensory-emotional values. Origin: late 18th century In the sense 'relating to perception by the senses': from Greek *aisthētikos*, from *aisthēta* 'perceptible things', from *aisthesthai* 'perceive'. Source: Oxford English Dictionary.

The role of the senses in conveying aesthetic experiences is also the subject of study in cognitive science. Contemporary studies in cognition claim that the reappraisal of experience, embodiment and affect shapes new interactions with the world and the knowledge produced. Francisco Varela's investigations on embodied cognition and "knowledge *as* enaction"⁴⁹, examine enaction as "the substance of experience" and that which "motivates conceptual understanding and rational thoughts"⁵⁰.

When introducing the theoretical context of the research in Chapter 2, I have discussed the procedural aesthetic defining interactivity as explained by Penny in the "embodied behaviour of the user"⁵¹ as that which defines the specificity of interactive media.

Investigating further the modalities through which this embodied interaction occur, Paul Dourish explains that –

... embodiment is not a property of systems, technologies, or artefacts; it is a property of interaction. It is rooted in the ways in which people (and technologies) participate in the world. (...) Embodiment is about engaged action. This notion of embodiment underwrites two areas of interactive system research that have emerged in recent years such as tangible and social computing.⁵²

Moving computation into the environment and researching more natural forms of interaction and expression between computers and the user, Dourish explains developments in HCI by exploring the relationship between interaction, participation and embodiment which

... is central to both tangible and social computing. Tangible computing draws on embodiment by recognising the physic embedding of action in the world, while social computing draws upon embodiment by recognising its social embedding in systems of meaning. (...) They both reflect the participative status that is constitutive of the embodied approach.⁵³

Emphasising the importance of embodiment as a "feature of interaction and not of technology", Dourish clarifies that "embodiment does not distinguish one sort of interface from another (...)

Rather, it is a question of how technology is used”⁵⁴.

This helps in drawing correlations between current research in tangible computing and investigations in material cultural studies on the importance of the materiality of objects as a vehicle for sensory-based knowledge. A trend in tangible computing is found in the augmentation of everyday objects with computational power in such a way “that a piece of paper, cups, pens, ornaments, and toys can be made active entities that respond to their environment and people’s activities”⁵⁵. This trend in tangible computing is concerned with enabling interactions through physical artefacts rather than traditional graphics interfaces. This correlates with material cultural studies’ investigation and exploration of the engagement between people and things. As Dudley explains, this is a two-fold action, that is it forms an interaction between subject and object:

All our different sets of expertise and interest, different cultural and personal backgrounds, different physical and mental states determine how we perceive and respond to things and their contexts: how we interpret and react to the limited data our senses are able to collect. (...) Objects too have effects on how we respond; they have agency and power in the process of engagement between them and us.⁵⁶

This two way engagement is, according to Dudley, the register by which art works to elicit emotional responses in viewers, move us, provoke, puzzle, and even disgust us. However, it is not generally understood that when it comes to museums’ objects that they “matter within museums, of course – but so often they feature as mere illustrations punctuating the story being told, rather than as powerful items in their own right, too”.⁵⁷

Even when issues of preserving an object prevent direct contact, there is still a possibility, according to Dudley, of imagining touching the object, and thus drawing on one’s “sense memories of other (similar) textured surface one can imagine, and even feel on her fingertips”⁵⁸. The tendency for museum display is, however, that of “a preference of the informational over the material and for learning over personal experience”⁵⁹ in such a way that quite often the production of the display can “inhibit, or even preclude emotional and personal responses”⁶⁰. Dudley argues for a shift in this tendency, and a return to the “materiality of the material” by placing the artefact back in the centre. Sensory engagement with objects can elicit magical, transformative and introspective experiences for museum visitors, as Dudley points out, “creative, material-focused, embodied and emotional engagements with objects should be a fundamental building block of the museum visitor’s experience.”⁶¹

A way to enable the interaction between visitors and objects is by opening up the space in between them:

If museums keep open the space that lies between artefacts being either carriers of

information or objects of detached contemplation, they keep open the possibility that visitors can reflect creatively, sometimes even transformatively, on things and themselves.⁶²

4.4.3 Affective experience

In discussing the role of affective experience in meaning making and heritage interpretation when direct contact with objects is not possible, Andrea Witcomb recalls her experience of encountering a model of Treblinka Camp in the Jewish Holocaust Museum and Research Centre in Melbourne. The model was handmade by a survivor of Treblinka who lost his wife and daughter in the concentration camp. Witcomb suggests that ‘resonance’

... operates not so much through sensory access – the model was behind glass – but to its highly personal rendition by its maker and to the fact that it is given enough space to enact its power to affect people in a visceral, physical way, in combination with sufficient museum interpretation to allow the viewer to know what the model is of and to place it, and the initial affective response to it, within a framework of cognitive understanding.⁶³

To understand further the way affect operates, and the role of the body in mediating an affective experience, we may look at Massumi’s investigations of affect and its procedures: affect follows, according to Massumi, the logic of intensity, which is “associated with non linear processes”⁶⁴, including “suspense, disruption and temporal sink”⁶⁵. Intensity operates on the bodily level using “brain and skin (as) a resonating vessel”.⁶⁶

Affective intelligence and affective computing have been a field of studies at MIT Media Lab since the early 90s. Rosalind Picard’s book ‘Affective Computing’⁶⁷ has provided an intellectual framework for emotional intelligence in HCI rethinking the role of emotions, their recognition, expression and evaluation in computing. The book initiated a research strand in the field focused around the relationship between computing and emotional intelligence, proposing an approach of adapting human emotions and emotional abilities to computers.

Current investigations in material and sense studies focus on the space of engagement between people and the material world rather than on the divide between object/subject mind/body. As Witcomb explains: “In this space, the senses rather than the word are privileged. Through material and sensorial engagement objects can act upon subjects and vice versa, people can change and act upon matters”.⁶⁸

Furthermore, arguments for sensorial interaction and embodied forms of knowledge in material memory help in understanding the role of objects in the “creation of sensory as opposed to narrative forms of memory”, as Witcomb clarifies:

In narrative forms of memory stories are told about particular people, places and

experiences of the past. Memories and objects are thus placed within a temporal framework in which the past is clearly differentiated from the present.⁶⁹

According to Jill Bennett in her research on sense-memory and trauma, such temporal demarcation seems to fade when considering sense memories: “For a survivor of Auschwitz a sense memory is the physical imprint of a traumatic experience, casting aside any temporal division between past and present”⁷⁰. Discussing the materiality of these memories, Bennett explains how they form an “impervious skin of memory, which can return the victim to relive the physical sensation related to the traumatic experience”⁷¹. Adding to this notion of materiality and the temporal collapse associated with sense-memory, Witcombs notices that “in material culture studies, sensorial experiences are increasingly associated with a form of memory which also collapses time and which cannot be easily narrated”⁷².

Marius Kwint describes sense memory as triggered by sensory engagement with objects and associated with involuntary reminiscence, as described by Proust and evoked by a tea-soaked madeleine. A characteristic of this involuntary and sense-based form of memory is the intensity of a sensory experience as well as the collapse of chronological time. Witcomb comments on the power of objects in eliciting sense-memories:

As Kwint makes clear, this means that objects, if associated with narrative memory, function as representations by working as tools to aid the process of remembering. The agency lies within the storyteller. However, if we look at the role that objects play in casing memory through sensory experiences, objects become the agents, taking those who encounter them in an involuntary journey through time⁷³.

4.5 Questions for practices

If, drawing from Massumi, the body is a ‘resonating vessel’ enabling aesthetic knowing of, and affective experience with, the world’s objects, how do curatorial design practices take on the opportunities opened up by the application of physical computing in networked museum environments to facilitate encounter, intimacy and embodied interactions between people and things? Reflecting on the role of the body, the senses and the elicitation of sensory experiences through objects, I explore these questions in relation to both analysis of existing practices and my own works, looking at how outcomes of existing practices and the driving questions contributed to the formation and development of my own creative practices.

Examining the impact of digital technologies on the art of exhibition, both analysis of existing works and my creative research practices are concerned with devising relevant design and curatorial strategies that enable engagement through resonance, participation and embodiment. *Belongings*, for instance, focuses on haptic and sonic experiences in museums, looking at the interrelation between sound and touch as vehicles of engagement.

The main concern of the research is the use of digital technologies to negotiate sensory engagement with cultural heritage. Mapping correlations and convergences across current investigations in cognitive studies, aesthetics, HCI and material cultural reclamation of the role of sensory-based knowing and experience in the attainment and production of knowledge, the research poses questions for both theorists and practitioners in the field of curatorial design, particularly on the issue of what constitutes the nature of a museum experience. Is it primarily educational or affective? How does the sensory engagement contribute to mediating that experience? How is this managed by curators in order to convey specific meanings about the objects? I explore these questions through firsthand accounts drawn from conversations with practitioners in the field, responses from museum visitors, and my own reflective experience as a curator and designer who looks at how digital mediation and spatial practices can enable performative interactions with objects, create empathic connections, elicit affective responses and the enchantment produced by technology.

In the case of the *Museum of Resistance*, I explore the relationships between orality and materiality, looking in particular at curatorial design strategies applied to the mediation of an empathic experience of the Resistance movement's oral heritage as communicated by the oral testimonies to museum visitors.

In *Place-Hampi* the focus is on the aesthetic experience of the user/traveller across Hampi's virtual heritage site, and how empathy and engagement can be conveyed through virtual dislocation and performative exploration.

Belongings explores strategies of touching objects and the relationship between sound and touch in the design of tangible interfaces mediating histories of migration.

Living Streams draws on the notion of participation, proposing ways of constructing narratives with location-aware and augmented reality applications that are democratic and multilayered.

Resonances aims to transfer agency to people's donations – both material and immaterial – to Liverpool Regional Museum by engaging visitors in a performative re-construction of the city's past.

- 1 Carter, P., 2007. Interest: The Ethics of Invention. In E. Barrett & B. Bolt, eds. *Practice as research : approaches to creative arts enquiry*. London: Tauris, pp. 15–25, p.10.
- 2 Haraway, D., 1988. Situated knowledges: The Science Question in Feminism and the Privilege of Partial Perspective. *Feminist Studies*, 14, pp.575–599.
- 3 Janesick, V.J., 2003. The Choreography of Qualitative Research Design: Minuets, Improvizations and Crystallization. In N.—Denzin & Y. Lincoln, eds. *Strategies of Qualitative Research*. London: Sage, pp. 46–79, p.47.
- 4 Galloway, A., 2008. *A Brief History of the Future of Urban Computing and Locative Media*. Carleton University, Ottawa, Ontario, p.32.
- 5 Benjamin, W., 1999 (1968). The Storyteller. Reflections on the Work of Nikolai Leskov. In *Illuminations*. New York: Schocken, pp. 83–109, p.107.
- 6 Barrett, E., 2007. Introduction. In Estelle Barrett & B. Bolt, eds. *Practice as research: approaches to creative arts enquiry*. London: Tauris, pp. 1–13, p.11.
- 7 Barrett, E., 2007. *Ibid*, p.3.
- 8 Bourdieu, P., 1990. *The logic of practice*, Cambridge UK: Cambridge University Press.
- 9 Barrett, E., 2007. *Op.cit*, p.5.
- 10 Carter, P., *Material Thinking : the theory and practice of creative research.*, Carlton, Vic:: Melbourne University Publishing.
- 11 Barrett, E., 2007. Foucault's "What is An Author" : Towards a Critical Discourse of Practice as Research. In E. Barrett & B. Bolt, eds. *Op.cit.*, pp. 135–146, p.137.

- 12 Haseman, B., 2006. A Manifesto for performative research. *Media International Australia incorporating Culture and Policy*, 118, pp.98–106, p.103.
- 13 Haseman, B., 2006. *Ibid*, p.104.
- 14 Gray, C., 1996. Inquiry through practice: developing appropriate research strategies. Available at: www2.rgu.ac.uk/criad/cgpapers/ngnm/ngnm.htm [Accessed January 23, 2010].
- 15 Barrett, E., 2007. Introduction. In *Op.cit.*, p.7.
- 16 Strange, S., 2012. Creative research: A radical subjectivity? *Text*, (14) Special Issue Website Series, p.3.
- 17 Carter, P., 2009. Regions of Care in Theory and Practice. In *Deakin Creative' and the real-world research economy*. Deakin University Australia, pp. 1–14, p.2.
- 18 Rogoff, I., 2010. Exhausted Geographies. In *Crossing Boundaries Symposium*. London: Royal Geographical Society. My transcription from oral lecture. Available at www.youtube.com/watch?v=PJOP9i0_nbl [Accessed June, 2013].
- 19 Wenders, W., 2001. A Sense of Place. In *Talk at Princeton University*. Available at: http://www.wim-wenders.com/news_reel/2001/0103princeton.htm. [Accessed June, 2013].
- 20 Fuller, M., 2009. Art Methodologies in Media Ecology. In S. O'sullivan & S. Zepke, eds. *Deleuze, Guattari and the Production of the New*. London; New York: Continuum International Publishing, pp. 45–55, p.45.
- 21 Fuller, M., 2009. *Ibid*, p.50.
- 22 Johnson, L., 2006. Valuing the Arts: Theorising and Realising Cultural Capital in an Australian City. *Geographical Research*, 44(3), pp.296–309.
- 23 Irigaray, L., 2008. *Sharing the World*, London: Continuum, p.x.
- 24 Irigaray, L., 2008. *Ibid*, p.128–129.
- 25 Irigaray, L., 2008. *Ibid*, p.2.
- 26 Irigaray, L., 2008. *Ibid*, p.5.
- 27 Irigaray, L., 2008. *Ibid*, p.73–74.
- 28 Irigaray, L., 2008. *Ibid*, p.93.
- 29 VV.AA. Silence Memory Empathy. *AHRC funded research network running 2012–2013*. Available at: silencememoryempathy.wordpress.com/about/. [Accessed June, 2013]
- 30 VV.AA. Silence Memory Empathy. *Ibid*.
- 31 Rebelo, P., 2006. Haptic Sensation and Instrumental Transgression. *Contemporary Music Review*, 25(1/2), pp.27–35, p.29.
- 32 Rebelo, P., 2006. *Ibid*, p.29.
- 33 Rebelo, P., 2006. *Ibid*, p.31.
- 34 Rebelo, P., 2006. *Ibid*, p.34.
- 35 Bolt, B., 2004. *Art Beyond Representation: The Performative Power of the Image*, London: Tauris.
- 36 Kwint, M., 1999. The Physical Past. In M. Kwint, C. Breward, & J. Aynsley, eds. *Material memories*. Oxford: Berg, pp. 1–16, p.2.
- 37 Bhabha, H.K., 2004. *The location of culture*, London: Routledge, p.7.
- 38 Hooper-Greenhill, E., 2000. *Museums and the Interpretation of Visual Culture*, New York: Routledge, p.116.
- 39 Dudley, S., 2012. Materiality Matters: Experiencing the Displayed Object. *UM Working Papers in Museum Studies*, 8, pp.1–9. Available at: www.ummsp.lsa.umich.edu, p.1.
- 40 Graves-Brown, P., 2000. Introduction. In Paul Graves-Brown, ed. *Matter, Materiality and Modern Culture*. London: Routledge, pp. 1–9, p. 2–3.
- 41 Dudley, S., 2012. *Op.cit.*, p.3.
- 42 Dudley, S., 2012. *Ibid.*, p.2.
- 43 Dudley, S., 2012. *Ibid.*, p.2.
- 44 Dudley, S., 2012. *Ibid.*, p.2.
- 45 Greenblatt, S., 1991. Resonance and Wonder. In I. Karp & S. D. Lavine, eds. *Exhibiting cultures: the poetics and politics of museum display*. Washington: Smithsonian Institution Press, pp. 42–56, p.45.
- 46 Dudley, S., 2012. *Op.cit.*, p.2.
- 47 Dudley, S., 2012. *Ibid*, p.2.
- 48 Dudley, S., 2012. *Ibid*, p.3.
- 49 Varela, F., 1999. *Ethical Know-How*, Stanford: Stanford University Press, p.11.
- 50 Varela, F., 1999. *Ibid*, p.16.
- 51 Penny, S., 2003. Representation, Enaction, and the Ethics of Simulation. In N. Wardrip-Fruin & P. Harrigan, eds. *First person: new media as story, performance, and game*. Cambridge, Mass.: MIT Press, pp. 73–84, p.83.
- 52 Dourish, P., 2001. *Where the action is : the foundations of embodied interaction*, Cambridge, Mass ; London: MIT Press, p.189.
- 53 Dourish, P., 2001. *Ibid*, p.190.
- 54 Dourish, P., 2001. *Ibid*, p.188.
- 55 Dourish, P., 2001. *Ibid*, p.16.
- 56 Dudley, S., 2012. *Op.cit.*, p.5.
- 57 Dudley, S., 2012. *Ibid*, p.6.
- 58 Dudley, S., 2012. *Ibid*, p.6.
- 59 Dudley, S., 2012. *Ibid*, p.6.
- 60 Dudley, S., 2012. *Ibid*, p.6.
- 61 Dudley, S., 2012. *Ibid*, p.6.
- 62 Dudley, S., 2012. *Ibid*, p.6.
- 63 Witcomb, A., 2012. Using souvenirs to rethink how we tell histories of migration. Some Thoughts. In S. Dudley et al., eds. *Narrating Objects, Collecting Stories*. Abingdon: Routledge, pp. 36–55, p.51.
- 64 Massumi, B., 1995. The Autonomy of Affect. *Cultural Critique*, (31), pp.83–109, p.89.
- 65 Massumi, B., 1995. *Ibid*, p.85.
- 66 Massumi, B., 1995. *Ibid*, p.89.
- 67 Picard, R., 1997. *Affective computing*, Cambridge, MA: MIT Press.

- 68 Witcomb, A., 2012. *Op.cit.*, p.44.
69 Witcomb, A., 2012. *Ibid.*, p.45.
70 Bennett, J., 2005. *Empathic Vision: Affect, Trauma, and Contemporary Art*, California: Stanford University Press, p.25.
71 Bennett, J., 2005. *Ibid.*, p.25.
72 Witcomb, A., 2012. *Op.cit.*, p.45.
73 Witcomb, A., 2012. *Op.cit.*, p.45, quoting Kwint, M., 1999. *Op.cit.*, p.2-3.

5 INTRODUCING THE PRACTICE

The second part of the dissertation examines the five research practices. Common to all practices is the context where they take place which, borrowing from Susan Hazan's definition, we can refer to as the 'V-Museum'¹, the Virtual Museum or the museum in the electronic age. Of matter to this research is an 'ecological' approach to curation and design in the electronic museum. In science, ecology is an interdisciplinary field investigating the relationships between organisms and their environment. The term has also found critical currency in other fields such as cultural and media studies. In using the term 'media ecology'², Matthew Fuller refers to the interconnected media world, where media systems interact, mix and interrelate. Looking at both informational and material qualities of media objects, Fuller asks what aesthetic, political, cultural challenges and opportunities media ecologies open up and what the implications for cultural evolution, freedom, surveillance and cybernetic culture are.

In the field of Human Computer Interaction (HCI), the term 'ecology' is used to describe the increasingly networked and pervasive technological environment in which we live. In rethinking the role of designers and the possibilities opened up by networked technologies, Bert Bongers explains that

... an ecological approach considers our technological environment as a whole. As our technological environment is permeated with computers, we can speak of an electronic ecology or *e*-ecology.³

The increasingly ubiquitous nature of computers enables new possibilities for designing interactions with electronic environments due to the increasing miniaturization and networking capacity of technologies. The computer is here considered in the broadest sense, as an embedded, networked and distributed computational system.

The museum is also part of this electronic ecology, in which technology is transforming all aspects of museum activity, from interpretation to representation, exhibiting, access and learning. Anita Kocsis discussed the role of technology in enabling “diversification and dissemination of exhibition content facilitating more democratic outcomes for museum visitors”⁴. Shifting the focus from technology to experience, Kocsis argues that

... museum activity encompasses not only the presentation of cultural objects and information but also experiences. Correlating audience experience with the digital immersive augmented exhibition (digital container) is argued as equally important as technology. Therefore the museum and its contributors cannot afford to deploy digital technology without understanding processes of mediation or adopting human centred approaches.⁵

It is precisely this exploration of the relationships and interactions that take place between the museum, interactive environments, objects, audiences, designers and technology, and how these interactions facilitate engagement with cultural heritage, that constitutes the milieu of the research practices.

5.1 Interactions in the electronic museum

To better understand the nature of the interactions implied in the e-museum I make a distinction between two kinds of interactions: physical and social.

1. Physical interactions are concerned with spaces and media. They develop as visitors engage – sensorially, intellectually and emotionally – with the physical and media environment of the exhibition space. Understanding the implications and opportunities of the design of these interactions in a more participatory way can offer new perspectives on exhibition making, where the active role of audiences as performers and participants is becoming a determinant of curatorial design practices. In further examining the interactions between audiences, technologies, environments, objects and information I will also clarify and reframe concepts of ‘interface’ and ‘multimodality’ in this context while examining their role in the interpretation and meaning making processes.
2. Social interactions are the interactions that take place between audiences both as individuals and as part of a community, the museum and/or other cultural institutions, curators, designers and cultural educators. The engagement and participation of the audience, their online as well as social activities inside the museum spaces are now considered necessary requirements to be addressed by museum practices. I will look at social interactions with regard to both online spaces and integrated participatory design in physical exhibition spaces.

Participation is taken as the key element unifying both physical and social interaction, suggesting that the two are strictly intertwined.

5.1.1 Physical interactions: the role of the interface

The term 'interaction' implies a reciprocal, two-way process. As Bongers explains, "when two entities interact, both will change state during or after the interaction".⁶

Through the use of technology, from a pen or paint brush, a musical instrument, to new media, humans can express and act in a far bigger scale and with more variety than ever before, and this is still increasing.⁷

How does interaction develop?

Humans control the system using their effectors, that is, manipulating with hands or speaking with the voice. The system will take this action in through its controls, that is input devices. After the processing the system will output a result using its display (screen, audio speakers). The output is perceived by humans through their senses.⁸

The interface is that which enables interaction. It is typically a two-way device, enabling a two-way communication between the computer and the environment through its controls and displays consisting of transducers:

Transducers translate electric signals into other physical quantities such as light, movement, temperature etc. There are two types of transducers: sensors for input and actuators for output. The interface is composed of transducers which translate electric inputs from the environment to the computer through sensors, then from the computer back to the environment through actuators. Transducers are responsible for getting signals in and out of the computer. The mouse is considered a standard interface that works under the 'point and click' paradigm. Most of commercial available software is tied to this paradigm.⁹

Clarifying the difference between actuators and sensors, Bongers explains that –

Machine output takes place through actuators. Actuators are the opposite of sensors, i.e., they convert electrical energy from the machine world into other energy forms for instance those perceivable by human beings. For instance, a loudspeaker converts electricity in changes in air pressure perceivable by the human ear, a video display shows images perceivable by the eye, motors or vibrating piezo elements may address the sense of touch.

¹⁰

Actions performed on a system (objects, computer, space) by humans can also develop according to different modalities. These are concerned with the outputs through which

humans manipulate or control a system. The range of modalities through which actions are performed encompass speech, gesture, touch and movement. However, as Bongers explains, there are also several human output modalities which are not under conscious control, such as the somatic modalities: blood pressure, body temperature, excretion, heartbeat, body odour¹¹. Some of these modalities can be applied only by involving an interface, as they are not consciously controlled by humans. This is also the case in Lozano Hemmer's works *Pulse Room* and *Pulse Phone*, whereby the interface detects the user's heart rate through touch and converts the data into sound and light pulse simultaneously. The outputs of these interactions are 300 incandescent light bulbs flashing in a room, and a graphic visualisation of the heart beat on the display of a smart phone.

A modality is a channel of communication between users and machines. It can be related to the human senses or the form of communication: "Visual modality concerns our ability to see things, the haptic modality that of feeling things that we are manipulating"¹². Different forms of communication can exist within a modality: for instance within the visual modality we can discern a linguistic modality – such as reading a text – from non-verbal communication, which includes images and signs. Multimodal interaction refers to the interaction that takes place using several modalities at the same time, for instance, a combination of visual, auditory and haptic. Multimodality addresses multiple senses at a time. In order to make the technology 'usable' we need an interface. The interface, explains Bongers, is a "connection between things"¹³. It is through the interface that interaction can take place:

In order to manipulate an object, or a process inside a machine, an interface needs to be present. The interface links the possibilities of the machine or object to the capabilities of the human. (...) Over the course of hundreds of thousands of years humans have increasingly have developed all kinds of technological artefacts. These artefacts needed to be manipulated, controlled, interacted with, *used*.¹⁴

Despite the broad range of possibilities available, we still experience very limited modalities of interaction with technology: that of the mouse or touch screen and display, pressing buttons and controls. Besides explicit and more focal interactions there are many that utilise peripheral, intuitive and informal modalities. It is a goal of designers to apply these modalities in the design of interfaces.

Saskia Bakker and Elise van den Hoven propose the concept of 'peripheral interaction' as "interaction with technology designed to easily shift between the center and periphery of the attention and thereby potentially better fit into people's everyday routines"¹⁵. In their research-through-design studies with primary school teachers, Bakker and van den Hoven have explored interaction with the periphery of the teacher's attention using manipulation of physical objects and audio as information display, to support teachers performing secondary tasks. The study contributes to the understanding of including physical interaction in the periphery of attention

and thus enabling new possibilities for blending technology in everyday activities, which are typically performed outside the focus of our attention.

Bongers claims the importance for designers to be able to read the signs, often hidden and subtle, as well as discerning the traces that people leave in the environment when interacting with objects, space and with each other. For instance, observing the alternative paths that pedestrians have made by walking, thus creating a track in a certain location, Bongers recalls Jan Gehls' speculations on design driven by the users desires¹⁶, which materialise the need for alternative pathways to the existing ones, a need to which architects and designers should be able to respond.

Understanding more implicit, spontaneous and unconscious modes of interaction can lead to better design. Affordances are, according to Bongers, a good example of this intuitive mode of interaction, as they 'intuitively' inform of a possible use. 'Affordance' is a concept developed by James Gibson which has become a foundation of design theory¹⁷. For this introductory understanding of the spontaneous and natural interactions between people and objects, it is sufficient to say that affordances pertain to the tacit knowledge or embedded information within an object that potentially allow us to know what we can do with that object and how we can use it. Bongers suggests that it is important for users "that technologies are demystified. It is key to the approach of the electronic ecology which emphasises interaction rather than exclusion"¹⁸. This assumes that there is no 'wrong' interaction, there is only bad design.

Donald Norman's book *'The Design of Everyday Things'*¹⁹ has contributed to introducing Gibson's concept of affordances to the field of HCI. This introduction was fundamental for the development of a user-centred approach to design, which demonstrates the relevance and potential of this concept.

Affordances hold a degree of ambiguity. This has been considered by many as an opportunity for design to experiment with possible uses and new modalities of interaction. Playing with the level of ambiguity inherent in affordances, Bongers indicates the approach of the Japanese designer Naoto Fukasawa as providing an alternative perspective on interaction design that is capable of deploying the potentially unintended uses of an object and using them as an input for further improvement.

Ambiguity is, according to Bill Gaver, a resource for design. Traditionally considered anathema in HCI, whose scientific approach was based on accuracy and objective validation, ambiguity is now broadly accepted in the design world and also gaining an increased consideration for its potential to facilitate close personal engagement between people and artefacts. Gaver distinguishes between three classes of ambiguity: that which pertains to the information of the artefact itself; contextual ambiguity, which is dependent on the sociocultural milieu and its interpretive discourses; and an ambiguity of the relationship that draws on our personal, aesthetic, intellectual, emotional experiences which we project on to artefacts. As an inspiration for design, Gaver looks at several artistic projects whose level of ambiguity can engender contradictory emotions and evoke personal imagination and experiences in

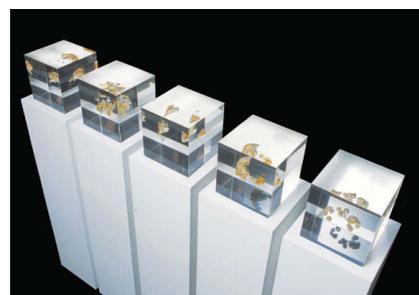
viewers. Gaver suggests tactics for enhancing ambiguity which can allow for multiple interpretations, thus creating a space of possibilities which participants can negotiate according to their personal perspectives and values. Provocative approaches are also encouraged in order to arouse imagination, question responsibility and evoke a response in participants²⁰.

The research practices will explore in further detail the relationship between people and objects in the museum through interaction with responsive environments, augmented artefacts, online applications, and the space of ambiguity, intimacy, interpretation and imagination that these interactions open up. A constant reference for the design practices are those works of art, both interactive and visual, whose goal is to provoke and inspire reactions in viewers, engaging audiences as co-creators, and whose performative role is a constitutive part of the artwork itself.

In the next section I will examine projects that enabled more spontaneous modalities of interaction with responsive museum spaces, that is spaces that are imbued with computational intelligence. I will discuss the role of interfaces in mediating a sense of enchantment and magic and thus engaging with the ambiguity and illusion inherent in this interactions.

5.1.2 Interactions in responsive museum spaces

Reflecting on digital interactions in museums, education manager Alex Drago examines the role that technological interfaces play in this process. Arguing that interaction with digital technology is often problematic, Drago addresses the lack of intuitiveness and immersion as the main problems inherent in the interaction with digital displays in museums, which can affect the visitor's overall experience. Drago provocatively argues that technology in museums is merely for engagement's sake and that museums themselves are not interested in enabling more transformative interactions with individuals or communities as they are reluctant to give away their curatorial power. Drago suggests



Annie Cattrell, *The Five Senses*, 2001-2003
Rapid prototyped resin in acrylic, 60x60x60 cm,
in Wellcome Collection, London.
Cattrell models in resin the morphological
patterns of brain activity that correspond to the
stimulation of each of the five senses.
Retrieved from <http://www.kringelbach.dk/skulptur.html>

that museums should invest in delivering learning experiences that are transformative for both individuals and communities. Interactive devices in museums are often delivered by interpretation companies that simply respond to a brief from the museum. This fails to create synergies and collaborations between educators, designers and developers. Drago's account of interactions with digital displays is rather symptomatic of the failure of an ecological approach to interface design:

One of the enduring images I have of museum engagement is of visitors prodding at touch screens, enthusiastically at first, then frustratingly as they realise the experience is a one-way dissemination of information that has little connection to their lives, then giving up entirely and ignoring any other touch screens in the rest of the exhibition for the same reason²¹.

According to Kocsis there have been significant changes in recent years concerning the increasingly influential role of designers in directing the content and form of the exhibition. From a traditional position of designers waiting to receive a brief from curators or museum managers, designers are now acting as "translators and facilitators of information". This role, according to Macdonald, "has become integral to the conception of many museum programs"²².

Proposing an integrative approach to interface design in museums, Flavia Sparacino, designer and researcher into interactive systems at MIT, examines the interpretive role of designers in mediating, not only digital content for museum visitors, but also engaging audiences in becoming active and creative producers in the intelligent narrative spaces they design. As Sparacino explains, intelligent spaces are spaces endowed with perceptual intelligence which makes them aware of how people move in them, react and use them. When transported to the context of museum exhibits, intelligent spaces enable the articulation of an informative or audiovisual narrative according to people gestures, movements or other interactions: hence they become narrative spaces. In her design practice, Sparacino explores creative applications of narrative spaces in museums, suggesting that natural interaction, based on people's spontaneous gestures and movements, is an essential requirement of intelligent spaces:

Capturing the user's natural input and triggering a corresponding action is however in many cases not sufficient to ensure the appropriate response by the system. We need to be able to interpret the users' actions in context and communicate to people information that is relevant to them, appropriate to the situation, and adequately articulated (simple or complex) at the right time²³.

On the basis of her work with intelligent spaces, Sparacino argues that intelligent narrative spaces need three different kinds of intelligence: perceptual, interpretive and narrative. The first concerns sensory input and aims to capture people's presence and movement in a non-obstructive way. The second translates people's actions and makes informed guesses about

their behaviour, the third concerns the information output, presenting the information in narrative forms by articulating stories, sound, animation and images. All three forms of intelligence are needed to achieve a successful collaboration. For intelligent spaces to become narrative spaces there is a need to develop interactions with digital content that are not limited to the keyboard and mouse paradigm. As Sparacino explains, other interfaces such as gloves, virtual reality glasses and touch screens have also been demonstrated to fail to fully engage people with a narrative experience, as the technology dominates the experience. From a design point of view, there is a need to

... endow interactive spaces with eyes, ears and perceptual intelligence so that they can interpret people's natural movement, gestures, and voice. Our spaces should be aware of visitors approaching an object of interest, of how they approach it, their speed, direction, and pauses, they should be able to understand pointing gestures as commands, as well as occasionally understand more sophisticated gestures such as zoom-in, zoom-out, rotate, move up, move down, and voice commands²⁴.

Interpretive intelligence requires a user model which can recognise sensory inputs that are context-dependent and therefore have a sufficient degree of flexibility and adaptability in order to acknowledge different sensory inputs and adapt by learning the user's interaction profile. Sparacino refers to this as a 'narrative intelligence', which has the potential to turn computers into 'storytellers'. Comparing the narrative intelligence of a system to that of a museum's human guide, Sparacino proposes that

... just as a museum guide adapts his/her explanation of the artwork on display according to the visitors' knowledge and curiosity so the system needs to constantly evaluate the users' actions and match them with the system's expectations based on those actions²⁵.

A pioneer example of narrative intelligence is '*Sto(ry)chastic*', a project developed by Sparacino with the Interactive Cinema Group at MIT Media Laboratory in the early 2000s. The project developed a user-centred approach for realtime computational storytelling developing authoring techniques for sensory-driven narratives spaces. Based in a museum context, it created different story units encompassing different topics and levels of information regarding an artwork, such as the artwork description, author biographies, the relationship with other artworks on display, critical history of the work, and so forth. The interaction design allowed these story units to be recombined in meaningful sequences according to users' behaviour and profiles, thus adapting the order and length of the clips according to user type – this considered the user's age, level of familiarity with the topic and interest in learning about the artwork. This interactive approach to interpretation not only was responsive to the visitors' behavior, allowing them to perform a selection of content according to his/her level of interest and knowledge, but it was also a curatorial and interpretive tool, allowing a degree of flexibility

for curators to organise, select and deliver story material in different forms.

Alessandro Valli, software engineer and experience designer, has a long-term research practice based on natural interaction in HCI. Drawing from his extensive experience with interface design for both commercial and museum applications, and relating his findings to and Calm technology theory²⁶, Valli develops a framework for natural interaction encompassing both functional elements as well as a methodological approach. Sensing, intelligence and presentation are characterized by Valli as the three constitutive components of HCI. He proposes that in order to allow more natural interactions between computers and humans, the hardware and software involved in sensing must be completely unobtrusive, ideally concealed in the environment. Input data are interpreted by the 'intelligence' of the system, whose purpose is, according to Valli,

... to engage humans in a real and convincing dialogue. The word 'intelligence' here defines the capability of this module to manage high level communication and convey the illusion of life in the audience, the illusion of dealing with an entity that is not a mere inanimate tool²⁷.

Finally, communication should adopt presentation strategies that encourage a better acceptance by people than most common display-based user interfaces, such as scroll bars, menus or windows offer. By providing a 'how-to' design guide for designing natural interactions, Valli reflects on the importance of several factors within an integrative approach to interaction design by moving away from the computer screen and into the environment. Aesthetics and emotion are fundamental factors given the reality that, as Valli explains:

... an interactive space is seductive by nature, and has a power of conveying emotion greater than any standard computer setting. Correct use of light, video and audio can tune emotional engagement of people. At the same time, sensing algorithms can estimate emotional responses from the public, such as excitement and attention, from movement and audio measurements; these estimations can be used to tweak communication²⁸.

So too is 'embodiment', for which Valli refers back to Dourish's definition of a 'participatory status':

Embodiment points to the ways in which we interact as involved participants rather than detached observers. (...) It strikes to make computation (rather than computers) directly manifest in the world so that we can engage it using the same sets of skills with which we, as embodied individuals, encounter an embodied world. So, it exploits our physical skills, the ways in which we occupy and move around in space, and the ways in which we configure space to suit our needs²⁹.

As systems become prevalent in the environment, their capacity to convey a sense of amazement and wonder increases. “It’s a kind of magic!” – Valli reports this comment from the field studies examining the user experience of a series of museums’ interactive exhibits that he designed.

5.1.3 Enchantment

I would like to reflect further on what Valli refers to as the “magic dimension of natural interfaces”³⁰, looking at how the concept of enchantment has been explored by the anthropologist Alfred Gell, whose works I have referred to in previous chapters.

The title of the thesis draws directly on this notion of wonder and sense of amazement that can be produced in the interaction with technology. I will here propose that inherent in the artistry of designing interfaces that enable interactions with augmented objects and intelligent spaces there is a sense of wonder and magic that somehow can recapture what Benjamin referred to as the ‘aura’ of the object. This sense of magic and wonder is somehow inherent in the interface itself if, drawing on Gell, we look at it as a work of art. An essential quality of art objects is, according to Gell, their situated-ness and belonging to a specific context. This suggests that they cannot be removed or dislocated from their cultural context or signifying meaning system. Gell inserts the art objects into an interpretive network of relations between the object, the artist and the recipient which cannot be separated as it becomes part of a social process, a network. Art objects convey, according to Gell, the ‘enchantment of technology’, where the magical component and aura of the object is mediated by the technological process involved in the making of the art object. Gell argues that this technical system “casts a spell over us so that we see the real world in an enchanted form”³¹. We can see how the tie between artists/designers, objects and recipients (in this context museum visitors) is a fundamental requirement of interactive works involving audiences in the co-creation of the experience. According to Gell, the enchantment of technology, the ‘halo’ effect, pertains to all categories of manmade objects, but art in particular is capable of a magical alchemy.

Understanding how interactions are conceived at a design stage, and developing an integrative approach to museum interfaces enabling multimodal interactions with cultural objects in a spontaneous way, is the core of the research practices. There is a need to understand how the strategies employed to foster engagement are influenced by adopting ‘interaction’ and ‘participation’ as drivers of the design from its early conceptual stage. Conceiving audiences, not as mere recipients or users of the work, but actually as co-creators, poses the question as to how this changes the approach of designers throughout the design process.

According to Kocsis there is a need to design communication spaces, either virtual or physical, where encounters between audience and designers can occur. Arising from the need to gain more information about the experience of audiences, their dynamics and interaction with digital exhibits, Kocsis proposes new methods that help to generate a co creation activity between the designer, audience, content providers and technology:

Information needs to encompass negotiation of spatial and temporal dimension for audiences, bodily experiences of the space, relationship between user and content, interface usability, level of immersion, flow or level of involvement, social and individual experience³².

5.1.4 Questions for practice

Questions running throughout the practices will explore the role of the body in the physical interaction with museum spaces and the kind of experiences that are envisaged by designers and curators to be conveyed to visitors, which modes of communication are privileged in the interaction, which senses and body parts more elicited. In particular questions will open up a space where we can examine and reflect on the role that embodied interactions play in producing enchantment, mediating intimacy and negotiating difference between visitors, museums objects, space and media.

The early material culture and cultural technologies studies developed by the school of Marcel Mauss and André Leroi-Gourhan explored the role of the physical body as a common ground for technological innovation that informed and shaped the way diverse and distant cultures have produced artefacts and objects. Since ancient times objects have performed as an extension of our human body, enhancing the capability of the human body to perform actions: for instance, the sword can be looked as a prostheses of the hand, the hook of the finger.

What has been significant is designers' reflection on the role of the human body in shaping everyday objects. Alessandro Mendini, in his *Manifesto degli Addio* (A Farewell Manifesto)³³, argues that man is himself a combination of instruments and that everyday objects mimic extending the instrumentality of our physical body: the cup for instance is a simulated hand, the radio a simulated mouth, an umbrella is the simulation of hair, the bicycle a simulation of our legs, the table simulates our knees.



Rebecca Horn, *Scratching Both Walls at Once*, 1974-1975. Images Tate London 2012. Retrieved from <http://we-make-money-not-art.com/archives/cyborgs/>

Mendini argues that the cult of objects and the body are oppositional. The cultures that have cultivated a relationship with objects have consequently suppressed the role of the body as a 'natural' object. Mendini provocatively suggests that a new humanism in design requires the rediscovery and re-appropriation of the human body as an agent.

If the human body has returned to a central position in all aspects of design theory and practice, how are museums negotiating this body-centred approach? What do we do with our body in a museum, apart from looking with our eyes at the objects and artworks on display and moving around with our legs in the gallery space? How do we engage our physical bodies in the experience of knowing about a past, encountering cultural objects from distant places and times? If the body is now understood as a vehicle of sensorial knowledge, how do curatorial design practices engage with the body in conveying sensorial experiences that can lead to alternative ways of knowing? How can our sense of touch, hearing, smell and movement become vehicles for embodied and affective experiences in the multimedia museum?

As discussed in this introduction, there are intuitive and subtle modalities through which we can communicate with enhanced technological environments. These modalities can enable interactions that are spontaneous and even unconscious, eliciting all our senses at a given time. This poses questions for curators and designers that renegotiate the compartmentalized approach to interpretation, curation and exhibition design, and thus favours an ecological approach to experience making by encompassing the broad range of modalities of interaction and participation in the museum.

5.2 Social interactions: Participatory design

In the book *The Participatory Museum*³⁴ Nina Simon poses questions as to how cultural institutions can use participatory techniques to engage visitors by giving them a voice thus developing experiences that are valuable for everyone. The author suggests that this is not a question of intention and desire but rather it is a question of design.

Questions that need to inform the design process from an early stage are devised by Simon to relate to the choice of instruments that will produce a participatory experience, whether to encourage a dialogue or creative expression, or a shared, learning and co-creative work.

Participatory design supports 'multi-directional content experiences'. This entails that the institutions provide a platform where visitors create their work, share their experience and connect with others. In contrast to the traditional uni-directional model, the participatory one allows for a range of diverse, co-initiated experiences. The consistency and quality of these experiences, however, cannot be guaranteed, as control over the visitor's experience slips away from curators to participants. Museum visitors, within the participatory model, are instead creators, distributors, consumer, critics and collaborators.

Supporting the participatory model demands a shift in the attitude of the institution “trusting visitors’ abilities as creators, remixers, and redistributors of content”³⁵ According to Simon, participatory projects make “relationships among staff members visitors, community participants, and stakeholders more fluid and equitable”³⁶.

With regard to interactive exhibits, the author notices how, given the specific two-way nature of their design, interactive exhibits can promote unique learning experiences. Participatory experiences require a purposeful design in order to be useful and significant. Too often we are exposed to poor design of exhibits and tools which are intended to increase participation, such as, for instance, video comment stations at the end of an exhibition. According to Simon these interactives do very little to enhance anyone’s experience. Participation, on the other hand, offers a wide range of possibilities for curatorial design. Participatory spaces, applications and tools can enable artistic creation, production of new content, allowing for reviewing, commenting or rating existing content, as well as organising or aggregating content in different ways. The design of participatory interfaces enables different levels of participation and modalities of engagement.

According to Simon, “... the best participatory experiences are not wide open. Rather they are structured in such a way to encourage a response without prescribing an outcome. Participation thrives on constraints”³⁷.

5.2.1 Co-curation: online collections and objects’ virtual aura

Susan Hazan examines the way museums are responding to online visitors’ experiences and suggests that the emergence of the ‘virtual aura’ of museums’ objects forms a new cultural phenomenon. Hazan investigates different models for online museums and describes the different approaches that online museums undertake as “liberat[ing] or dispel[ing] museums’ objects to remote locations in a networked world”³⁸. Discussing the curatorial strategies involved in developing online experiences in virtual museums, Hazan argues for the need to simulate a physical interaction with both objects and the virtual gallery space. To test her argument Hazan examines the user/visitor experience in an online museum scenario using two museum-driven projects, both which deliver cultural content yet providing very different visions and user experiences: the *Google Art Project* and *Europeana*.

Europeana is a gateway to Europe cultural heritage resources with content from twenty seven member states including books, maps, recordings, photographs, archival documents, paintings and films, all drawn from national libraries, museums and galleries, archives, libraries, audiovisual collections and cultural institutions. The *Europeana* digital library comprises more than nineteen million objects, however it does not host the data but only acts as a portal with thumbnail previews and metadata leading the users through search and browsing options to the location where the actual content resides.

Google Art Project offers online visitors a walkthrough of the collections of the more than 150 museums from all over the world participating in the project. Using 'Street View' the Google Art project interface allows a user to view a chosen artwork in high resolution and to create a personalised collection by curating thematic collections from the extensive range of artworks available.

Hazan reflects on the different approach of these two projects in mediating experiences for online visitors by comparing the way Rembrandt's paintings are presented by the two online collections. To add to this, there is a need to understand the "intangibly vague quality that can be best described as the wondrous quality of the objects" in examining the way the two websites deliver the user experience and strive to convey what she refers to as "the auratic quality of the art"³⁹.

Museums, according to Hazan, operate by de-contextualising objects from their network of meaning, thus breaking the link between the artists and receivers. This network is, according to Gell, what creates the enchantment. In the same ways as theatre operates by projecting back the human condition to the audience through the use of metaphor and allegory, Hazan argues that museums re-contextualise the network of meaning around objects and are therefore able to produce enchantment. In discussing the experience with online museums, Hazan poses questions whether this sense of enchantment and wonder can be somehow simulated or mediated and how artists and designers can respond to the new possibility of interconnectivity offered by the medium as well as examining its constraints?

Can these online environments deliver the aura of the original object and replace the embodied experience of the encounter with the real object in the gallery? For Hazan the compromises that have to be made between the loss of the aura and the accessibility of online collections can open up a new space for design.

5.3. Exploring interactions in practice

The research practices principally investigate two kinds of interactions between users and technological systems in museums: object-led and spatial (or distributed). These interactions encompass different scales and excite different sensory modalities. The former pertains more specifically to the interactions with physical objects and/or exhibition display enhanced with information, and which are developed through physical manipulation, object handling and tactile perception. The latter concerns interactions with networked environments encompassing movement and navigation as vehicles of engagement. Understanding how interactions are developed will provide insights on a prevailing mode of communication that is supported exploring the aesthetic, affective and embodied quality of the user experience.

All practices explore the ways in which participation is designed in both physical interactions

with objects, space and content, as well as social interactions among visitors, communities, the museum and designers. All practices share an experience-driven approach, which favours the understanding of the curatorial design strategies, address and foster engagement, create encounters and negotiate intimacy. Reflections from the extensive literature on audience studies are also brought into the discourse, however audience studies are not the central focus of the research. In fact, it is proposed that an 'ecological' approach to curatorial design in the electronic museum is required, which, by integrating the design of spatial arrangements, physical interfaces and curation of media content, understands the audience as an active agent in the design process. This renegotiates authorship between curators, designers and users and thus enables a new interrelationship between objects, space, content and the museum apparatus.

- 1 Hazan, S., 2003. The Musesphere and the E-Museum. In *Visual Knowledges Conference*. The University of Edinburgh, pp. 1–20.
- 2 Fuller, M., 2005. *Media Ecologies: Materialist Energies In Art And Technoculture*, Cambridge, MA: MIT Press.
- 3 Bongers, B., 2006. *Interactivation: Towards an E-cology of People, Our Technological Environment, and the Arts*, Lulu.com, p.27.
- 4 Kocsis, A., 2009. Designing with the experiential in digitally augmented exhibitions. In *Cumulus 38° Conference, Shifts in art + design practice and technology*. pp. 1–15, p.2.
- 5 Kocsis, A., 2009. *Ibid*, p.2.
- 6 Bongers, B., 2006. *Op.cit*, p.103.
- 7 Bongers, B., 2006. *Ibid*, p.113.
- 8 Bongers, B., 2006. *Ibid*, p.113.
- 9 Bongers, B., 2006. *Ibid*, p.160.
- 10 Bongers, B., 2000. Physical Interfaces in the Electronic Arts Interaction Theory and Interfacing Techniques for Real-time Performance. In M. M. Wanderley & M. Battier, eds. *Trends in Gestural Control of Music*. Centre Pompidou: IRCAM, pp. 41–70, p.44.
- 11 Bongers, B., 2006. *Op.cit*, p.111.
- 12 Bongers, B., 2006. *Ibid*, p.106.
- 13 Bongers, B., 2006. *Ibid*, p.29.
- 14 Bongers, B., 2006. *Ibid*, p.29.
- 15 Bakker, S., Hoven, E. Van Den & Eggen, B., 2013. FireFlies : Physical Peripheral Interaction Design for the Everyday Routine of Primary School Teachers. In TEI. Barcelona: ACM. Available at: <http://www.elisevandenhoven.com/publications/bakker-tei13.pdf>
- 16 Gehl, J., 2011 (First ed. in English 1987). *Life Between Buildings - using public space*, Washington DC: Island Press., Translated by Koch, J. from the Danish text (1971), pp.133-145.
- 17 Gibson, J.J., 1986 (1st ed. 1979). *The Ecological Approach to Visual Perception*, London; New York: Routledge.
- 18 Bongers, B., 2012. *Multimodal interaction – reading the environment*, working paper.
- 19 Norman, D., 2002(First ed. 1988) *The Design of Everyday Things*, New York: Basic books.
- 20 Gaver, W.W., Beaver, J. & Benford, S., 2003. Ambiguity as a Resource for Design. *Letters CHI*, 5(1), pp.233–240.
- 21 Drago, A., 2013. Digital engagement in museums. Available at: <http://silencememoryempathy.wordpress.com/2013/01/03/digital-engagement-in-museums/>. [Accessed February 2013]
- 22 Macdonald, S., 2007. Interconnecting: museum visiting and exhibition design. *CoDesign International Journal of Co Creation in Design and the Arts*, 3(1), pp.149–162, p.150.
- 23 Sparacino, F., 2008. Natural Interaction in Intelligent Spaces: Designing for Architecture and Entertainment. *Multimedia Tools and Applications*, 38, pp.307–335, p.308.
- 24 Sparacino, F., 2008, *Ibid*, p.311.
- 25 Sparacino, F., 2008, *Ibid*, p.312.
- 26 Hohl, M., 2009. Calm Technologies 2.0: Visualising Social Data as an Experience in Physical Space. *Parsons Journal for Information Mapping*, 1(3), pp.1–7.
- 27 Valli, A., 2008. Notes on Natural Interaction. p.7. Available at: www.idemployee.id.tue.nl/g.w.m.rauterberg/Movies/NotesOnNaturalInteraction.pdf. [Accessed June 2013] Other published article by the author can be found at: Valli, A., 2008. The design of natural interaction. *Multimedia Tools and Applications*, 38(3), pp.295–305.
- 28 Valli, A., 2008. *Ibid*, p.17.
- 29 Valli, A., 2008. *Ibid*, p.20, quotes Dourish, P., Embodied Interaction: Exploring the Foundations of a New Approach to HCI, Available at: www.dourish.com/embodied/embodied99.pdf [Accessed July 2013].

- 30 Valli, A., 2008. *Ibid*, p.49.
- 31 Gell, A., 1992. The technology of enchantment and the enchantment of technology. In J. Coote & A. Shelton, eds. *Anthropology, Art, and Aesthetics*. Oxford: Oxford: Clarendon Press book, p.43.
- 32 Kocsis, A., 2009. *Op.cit*, p.7.
- 33 Mendini, A., 1981. *Architettura Addio*, Milano: Shakespeare and Company.
- 34 Simon, N., 2010. *The Participatory Museum*, Available at: www.participatorymuseum.org.
- 35 Simon, N., 2010. *Ibid*, p.3.
- 36 Simon, N., 2010. *Ibid*, p.3.
- 37 Simon, N., 2010. *Ibid*, p.10.
- 38 Hazan, S., 2001. The Virtual Aura - Is There Space for Enchantment in a Technological World?, p.2. In *Museum and the Web*. Toronto: Archives and Museum Informatics. Available at: <http://www.museumsandtheweb.com/mw2001/papers/hazan/hazan.html>.
- 39 Hazan, S., 2013. Holding the museum in the palm of your hand. In *XI Culture and Computer Science*, Berlin. Available at www.musesphere.com/images/Palm-of-your-hand.pdf, p.5.

6 THE MUSEUM OF THE RESISTANCE

By way of an introduction to the museum I cite the initial presentation as it appears on the museum's web page. Historical facts on how the museum came into being, the aims and mission of the promoters are detailed together with an account of the testimonies who shared with the museum their memories of participating in the Resistance movement. These memories are now part of a common heritage.

6.1 Introduction

Background

The *Museo della Resistenza* originates from a mountain holiday-camp house built in 1984 on a private block of land donated to the town of Sarzana. Since early 1950's to 1971 the house hosted thousands of children. Thanks to the volunteer work of citizens and ex-partisans, the holiday-camp house has hosted thousands of children from the post war period to the summer of 1971.

Due to the deterioration of the building, in 1994 the ANPI of Sarzana, in agreement with the town council, proposed to assign the house to the Museo of Resistance of the provinces of Spezia and Massa Carrara, awarded with the golden metal for the Military Value and for their contribution to the defence of freedom and democracy.

Numerous public institutions, associations and private citizens collaborated to renovate the building transforming it into a monument for peace, in an area where violent fights between partisans, German and fascist soldiers took place and that witnessed destructions and massacres of unarmed people.

Installation

Since 2000, the opening year, the Museum includes a modern audio-visual installation and multimedia supports that allow historical investigation and didactic paths on the topic of the Resistance and the construction of Italian democracy.

One of the main purposes of this installation consists in offering a new vision of the Resistance capable of attracting the interest of a young public.

Mission and statement

A museum is not a pile of old, dusty memorabilia. Rather, it is a place where historical memory is preserved and developed. The memory of Resistance not only belongs to the partisans, but to the farmers, internees, women and to all the people fighting for survival. In the intention of the dedicated promoters, Paolino Ranieri and other ex-partisans who had a vision for this place, 'Resistance' is here conceived in a broadest sense addressing not only the armed and political occupation against German and Fascist domination, but also extending to all civil forms of resistance, that of fighting against war, bombs, starvation and massacres.

The museum of Resistance offers a path weaving narratives of the most dramatic, yet crucial time for freedom and democracy in Italian history, together with historical images of those events. It is a place where first hand accounts from the witnesses of the Resistance movement meet the visitors of the museum, inviting them to interact with stories, photographs and videos.

The mission of the museum is to "promote the cultural and historical enrichment of young generations". The projection of the enlarged faces of the testimonies is aimed at emphasising their expressivity in order to transmit not only their stories but also their memories.

The oral testimonies

Memories of the testimonies, often very traumatic and poignant, become alive telling not only about the Resistance movement but also of the German occupation, the fight for liberation, the bombing, the journeys back home from the concentration camps. All these tragic moments of Italian history are brought back to life, not as an historical re-enactment, but embodied in the life stories of those who were there: partisans, farmers, priests, workers, the women, are the tesserae of a complex, and not yet resolved mosaic of the historical memory of that time, open to visitors to interpret and reflect upon.¹

The participants:

Giuseppe Antonini, born in S.Giuliano Terme (PI) on 11/4/1920, partisan.

Pietro Del Giudice, born in Montignoso (MS) on 19/7/1914, partisan.

Carlo Dell'Amico, born in Carrara on 13/6/1927, partisan.

Franco Del Sarto, born in Forno (MS) on 17/2/1925, partisan.

Andreina Durante, born in Fivizzano on 4/10/1922, farmer.

Cesare Godano, born in Spezia on 24/7/1921, partisan

Amelio Guerrieri, born in Vezzano Ligure (SP) on 15/5/1920, partisan.

Orlando Lecchini, born in Arzelato di Pontremoli on 29/5/1918, internee in Italian military hospital in Germany

Soresio Montarese, born in Sarzana on 25/10/1912, worker.

Marco Mori, born in Pontremoli on 7/5/1914, priest.

Bianca Paganini, born in Spezia on 1/2/1922, deported in Germany.

Alessandra Pavoli, born in Bergiola (MS) on 28/7/1926, farmer.

Paolino Ranieri, born in Sarzana on 5/9/1912, partisan.

Carlo Dell'Amico, born in Carrara on 13/6/1927, partisan.

Anna Maria Vignolini, born in Sarzana on 14/12/1923, partisan.

Giovanni Tognarelli, born in Zeri (MS) on 2/12/1930, farmer.

Carlo Tareni, born in Merzò (SP) on 24/1/1918, farmer.

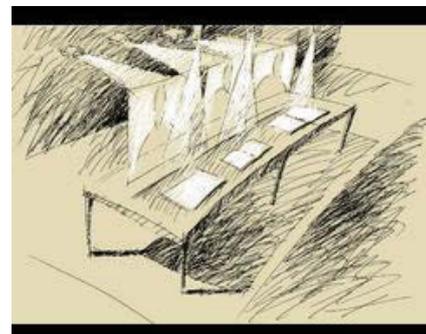
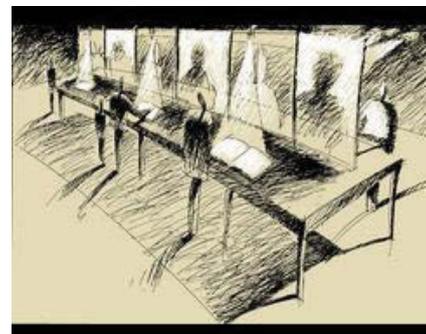
Laura Seghettini, born in Pontremoli on 22/1/1922, partisan.

Lino Rovetti, born in Cecina di Fivizzano on 10/6/1925, partisan.

6.2 Virtual visit: Experience

I described my first encounter with the Museum of Resistance in the Introduction of the thesis. To help immersing in the place, in the paragraph that follows I invite a special guide, the Italian actor and writer Giuseppe Cederna, to lead us on another visit. The citation below is an account of Cederna's first experience as published in the museum's catalogue. Reading Cederna's narrative, I find many resemblances with the mix of emotions and memories that my own first visit triggered:

We're almost there. We've reached the top of hill. In that old chestnut wood, there is a U-shaped yellow house. If you close your eyes you can hear the voices of the thousands of children who passed by this holiday homestead. Then, if you open your eyes you can see the beautiful valley of the Magra river, the Tirrenian sea at a distance, the mountains at the back. In the middle there's you, holding a key in your hands. All you need to do is open the door. You'll find yourself a in the semi-darkness of a wide room, a long table in middle. Get closer, let your hands wander and the memory table will start speaking. You are in a movie, inside the screen. Follow me inside. (...)



The Audiovisual Museum of Italian Resistance, sketches. Courtesy of Studio Azzurro

Before entering the room I didn't know much about that memory. Now I know. You have to immerse yourself within. And listen. (...) Memory is like a short circuit, an electric shock. You can measure it, compare it and even weight it. Your heart start beating faster, temperature raises, the eyes become watery. Memory is a hill, a mountain cross, a barn where to hide, rest and go back to play. Here, I found it, in this house in the middle of a chestnut wood, in the stories of Gas, Andrea, Walter, Memo, Lidia, Anna Maria, Bianca... I see them bathing in the Calcandola creek, hiding, feeding and looking after their companions, riding a bicycle and falling in an ambush. I saw them shooting, I even saw them dying and get up again. I heard them shouting 'long live freedom!' and I cried.²

The table is the actual interface enabling the re-enacting of the recounts of the participants via interaction with museum visitors. Cederna describes the table as a vehicle of memory, a means by which to access the time and space narrated by the oral testimonies. The table also embodies, according to Studio Azzurro, the artist group responsible for the curatorial and exhibition design of the museum, the very 'essence' of the museum itself. This is how the artists conceived the idea of the table, upon which the curatorial and design strategies were developed.

Around a table decision have been made, on a table knowledge has been written and passed on, we come around a table to discuss and remember, we lean on a table to read text, view images.³

The table extending along the length of the room has been conceived as a memory surface or, a means enabling memory to resurface into the present. When activated by touch it projects back those stories, sounds and images, as if they were 'stored' within.

On the table are placed six books. . They have the appearance of open books, but are in fact made of wood, and rather than pages to flip through, they present a set of projected images. As a visitor intercepts the light source coming from the projection, in a gesture resembling that of turning a page of a real book, a narrative is activated on the screen above. Hence, the story begins with the faces of the protagonists coming to life and becoming animated.

In the paragraphs that follow I have collated in a narrative fiction excerpts from the interviews I conducted with the artistic director, a designer, and a historian at different points in time between 2010 and 2012. The narrative stages a recount of the relevant themes of the conversations with the interviewees as if they were engaged in dialogue that took place simultaneously.

The narrative is organised around the most significant themes interpreting and structuring the discourse which triggered from my questions. These are concerned with the design process, the mission and aims of the museum, the translation of the oral testimonies in spatial and narrative forms within the museum space– and the problems inherent in this translation – and the role of the visitor in interacting with the past mediated by the touch-based interface. All

the interviews posed similar questions in order to gain an understanding of a given topic from different angles, emphasizing different perspectives as well as common visions. This 'fictional conversation' among the interviewees also includes excerpts and quotations that were sourced from other published material, such as online interviews, exhibition catalogues, journal articles and other publications.

6.3 Interviews in the form of a narrative

Interviewees: Paolo, Paolo, Paolo and Paolino

Paolo Rosa: video artist and film maker. Together with Fabio Cirifino and Leonardo Sangiorgi in 1982 he started a creative practice named Studio Azzurro in Milan. Over the years Studio Azzurro explored the poetic and expressive possibilities of new technologies through the creation of video-environments, sensitive and interactive exhibition spaces, theatrical performances and film. Studio Azzurro's artistic practice intersects with traditional art forms, film making and electronic art, and is concerned with the integration of electronic media in the exhibition environment, transferring agency to the spectator who takes an active role in the narrative development of the work. Studio Azzurro has been open to cross-disciplinary collaborations with artists, designers and curators. In 1998 Studio Azzurro was approached by Paolino Ranieri, ex-partisan and promoter of the museum, to design a site dedicated to Resistance heritage in the Sarzana area.

Prof. Paolo Pezzino: Professor of Contemporary History at the University of Pisa. Pezzino's research interests concern the history of southern Italy, with particular attention on civil massacres during WWII. He has been a consultant to a parliamentary investigation on the concealment of dossiers concerning crimes perpetrated during the Nazi and Fascist domination and occupation of Italy. At the time of his involvement with the Museum of Resistance, Pezzino was collaborating with Sarzana City Council on an educational history project focused on secondary schools.

Paolo Ranieri: video director and lecturer at the Academy of Fine Arts in Carrara, has been involved with Studio Azzurro between 1992 and 2000. His work at Studio Azzurro included documentaries on Arturo Schwartz and Joseph Beuys for the Mudima's collection, 'Il corpo dell'arte', a documentary on body art in collaboration with Andrea Lissoni. He was involved with the artistic direction and production of the Museum of Resistance in Sarzana. Paolo's grandfather Paolino Ranieri, who died on the tenth anniversary of the Museum of Resistance, was one of the organizers of the resistance in Lunigiana. In 2000 Paolo founded the creative multimedia practice N03, whose range of work include interactive museums such as the Museum of Resistance in Turin, temporary exhibitions, documentaries and installations.

Paolino Ranieri (1920-2010): the heart and drive of the Museum of Resistance. Commander of

a small band of partisans in Sarzana, known as 'Andrea', he was one of the organisers of partisan *guerriglia* in the area of Lunigiana and the province of Parma. After the war he became mayor of the city of Sarzana for 25 years.

6.3.1 The journey: A site of memory

The experience of reaching the museum's site, is an experience in its own right. Paolo Ranieri describes the site as 'a site of memory', which has not been chosen by chance. The museum, housed in a former partisan camp on the mountains, somehow can be thought of as a 'hyperspace' or a portal to the geography of the Resistance movement in the area.

Discussing the motivation behind the conceiving of the museum Paolino Ranieri, promoter of the museum and former partisan, explains that one of the reasons that persuaded Ranieri and the other promoters was the existence of the house. This was a former hostel accommodating children from Sarzana and la Spezia during their summer camp from 1950 to 1971. Moreover, as Ranieri explains, the place where the house is located, was a significant and dramatic theatre of war. Fosdinovo is part of Gothic Line, which formed the line of defence in the last stages of WWII separating the retreat of the German forces to the North and the advance of the Allied Arms from the South. The participants, whose stories we encounter in the museum, were the protagonists of this movement, which struggled to set the region free from the Nazi and Fascist domination. This is how Ranieri recalls the memories that are bound to the place:

About 100 metres away from the site, between Fosdinovo and Canepari, there is a valley where the vegetation is almost impenetrable. In that valley we found a refuge to hide our companions who were wounded and could not join the rest of the battalion. We managed to save them and reunite with the rest of the group and were the first entering Sarzana after the Liberation in April 1945.⁴



Paolino Ranieri, photograph by the author, July 2010.

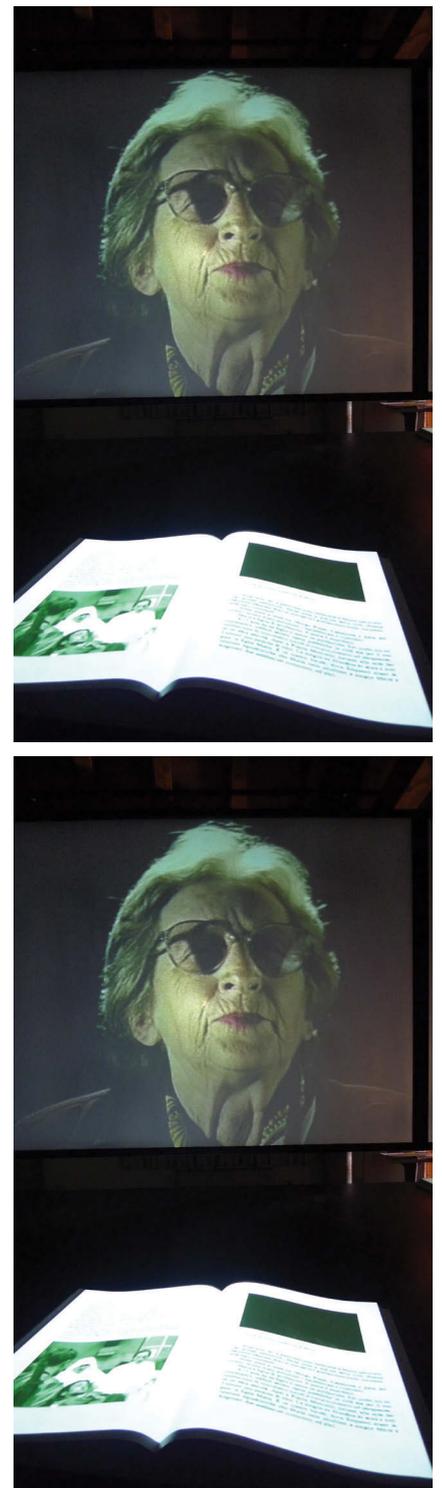
For over 30 years after the end of the war, Ranieri has been involved in educational programs with primary and secondary schools in Sarzana telling students about his experience as a partisan. He was often asked to organize school visits to the battlefields and other significant places in the fighting. During those trips he used to tell the students: “See, in that barn we used to sleep. In that house we hid from the search in Ponzanello”. Ranieri admits that telling young people about his experience has been very rewarding because of their response to, and curiosity about, his stories. This motivated Ranieri to create the museum in order to encourage young people to experience the heritage of Resistance by listening to the stories from the accounts of those who were there and lived in that time⁵.

6.3.2 Mission and Vision

Fifty five years later, the desire of Paolino Ranieri to leave a tangible sign of the memories of those who had been involved in the local Resistance in order to share them with the younger generations, became the drive behind the birth of the museum. Paolo Ranieri, grandson of Paolino and collaborator of Studio Azzurro, recalls how his grandfather was deeply impressed reading an article by Umberto Eco discussing the role of contemporary museums as lived spaces, mixing personal accounts, images and sound. Ranieri used to keep a cutout of the article in his pocket as a reminder of what he also thought a contemporary museum should be. Then, as his grandson explains:

I told him that creating such installations was exactly my job. I brought him to visit the Museum of Studio Azzurro in Lucca, the Baluardo of San Paolino and an exhibition dedicated to Studio Azzurro at Palazzo delle Esposizioni in Rome. In that moment he realised that a mix between video and interactivity could fit his idea of a museum of Resistance⁶.

Paolo Rosa, director of Studio Azzurro, recalls the day he met two gentlemen, quite elderly, one of whom was



Oral testimony, photographs by the author, July 2010.

Paolino Ranieri, to discuss the conceiving of the museum, quoting their vision and aims about the project and space.

We want to create a museum on the resistance movement in the area of Sarzana. Not a museum speaking about our nostalgia – they used this very word – a museum full of memorabilia which are meaningful only to our private memories. Rather, a museum capable of passing on the experience of that time to young people, as when we took up the Resistance we were young too. Now this heritage is considered something old. And yet, this memory cannot grow old. It has to be passed on as an experience that serves the young generations, that constantly renews itself, a museum that uses a contemporary language. And this is why we are here.⁷

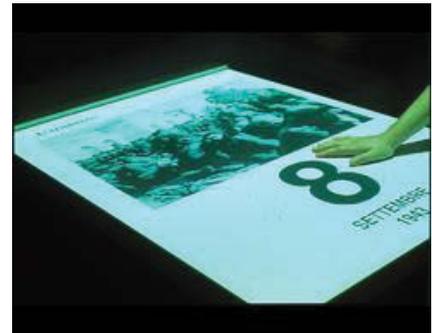
Taking on this vision, Studio Azzurro began reflecting on the idea of how memory could be re-enacted and actualized in the museum through the testimonies of the past initiated by those who had been involved in the making of the Resistance.

6.3.3 Strategies of engagement

The sessions that follow provide insights into the curators and artists' steering vision of the design and exhibition making. Studio Azzurro discusses how their creative process was inspired by the use of the table as an interface to access a living history. The discussion develops around the interrelationship between oral communication and tactile interactions. The historian and designers' perspectives are compared to illuminate the way narratives are structured, presenting both strengths and problems inherent in the curatorial choices and the negotiation with technology.

6.3.3.1 Orality and touch

The idea of using video portraits, activated by physical touch of the book's page on the table, derived from the intention of Studio Azzurro to take a distance from a mainstream and disengaged representation of the Resistance movement. Interviews with the participants of



A series of photographs by the author showing touch-based interactions with the Museum's books, July 2010.

the Resistance were conceived as 'portraits'. This enabled to mediate the emotional aspect of personal memories together with the affective dimension of people's life stories, rather than attempting to recreate the historical context by transferring chronicles and facts. As Paolo Rosa explains, "For history, if one's interested, it can be looked up in many books, while the emotional component of the story is always very difficult to find, and to pass on".⁷

The design and curatorial processes proceeded in parallel as two historians Francesca Perini and Paolo Pezzino joined the team. The historians contributed to organise the content from the interviews and chose 5 main themes, which then became the titles of the books in the museums: 'the farmers', 'the massacres', 'the deported', 'the women', 'the partisans'. The idea was to show the video portraits one next to the other. This is how Paolo Rosa describes the interaction between the books and the video tales, suggesting the idea that this form of interaction is intended at engaging visitors and participants in a dialogue.

The function of the table works in a symbolic as well as a practical manner in order to create a convivial atmosphere. To trigger the stories, one has to activate the tables first, to flip through the pages of the books. Unfolding the virtual book opens up the story of the protagonist as well as a visual narrative of images projected on the book, which somehow works as a background to the story. The logic behind this interaction, was to create a small gesture that could move, initiate the story by flipping through the pages, as if this gesture evoked a question on the part of the viewer.

You start a dialogue with a portrait, and that portrait talks back to you. Somehow it catches the eye, as I liked to define the dynamic that occurs: that person who's talking there is actually talking to you, in answer to your question. This dynamic is crucial, as it brings you to a state of attention, of conscious listening, and therefore the experiential dimension is passed on.⁸

As the artistic director explains the interaction with the books can be resembled to a form of remembrance. The action of virtually flipping the pages of a photo album triggers the accounts of the testimonies. This gestural component is a very important part of Studio Azzurro works. Similar interactions can be found in other interactive works and somehow contribute to define the aesthetic of the artistic group.

We define this kind of interfaces as 'natural', as they are conceived to create a direct, physical relationship, without procedural intermissions, between the intention of the audience and the poetic and emotional dimension that we attempt to transfer.⁹

The Museum of Resistance is quite peculiar case of a museum designed around a table and a screen. In this case the container came before the content, as historian Paolo Pezzino explains:

The books and the table were stated as a pre-condition. The idea of the book was part of

the curatorial statement. The book is a vehicle to corroborate the oral memories with visual material¹⁰.

6.3.3.2 Narrativity

Utilising the books as a precondition, Studio Azzurro proceeded by sketching a series of different scenarios with a potential narrative basis. These were aimed at transferring histories in the museum through an oral form of narrativity that was meant to be powerful and compelling, having also a scientific historical foundation.

As the historians joined the team, they began carving out a series of themes upon which Studio Azzurro built the content of the books. Using the themes as a starting point, the process of inviting and selecting the testimonies began. Paolo Rosa describes this stage as an invitation to the testimonies to tell their stories.

Collaboration with the historians was crucial in this phase. Their role was fundamental in understanding the narrative structure, the kind of stories to tell, how to tell them, and whom to invite. Pezzino notices that this collaboration started once the design process was already at an advanced stage, with the medium dictating the interpretation and editing process:

... they called me because they designed the table, the screen, but didn't know what to put inside. We were asked to produce content for the books and screens. Collaboration worked very well, but I wonder if it could have worked better collaborating from the very start.¹¹

The editing process developed in collaboration with the artistic directors of Studio Azzurro, once the main themes were established, we started working on ordering the clips. This being a post-modern museum, one would think there is no order.¹²

In fact, as Pezzino clarifies, there is an order that is dependent on technological constraints. Each book has a duration of about 45 minutes, after which it starts over again. This entails that a new visitor will start viewing the clips at the point where the previous one finished, as it is rather unlikely for a visitor to watch the whole content of a book. In a sense it could be felt that the order is random, but in fact, the narrative is linear and pre-ordered, however fragmented:

Because of the syncopated narrative, that has to be activated each time by visitors' movement – touching the book, all clips had to be autonomous in a way, somehow conclusive as a short story in its own right. In some cases we had 6 hour long interviews. The average duration of interviews was about 180 minutes. But we had to break it down to clips ranging between three and one minute long. This was the most difficult but also most interesting part of the work.¹³

Paolo Ranieri also comments on the fragmentation of the narrative structure and highlights the importance of finding a balance between the dramatic effect and the autonomy of the story

in the editing process. On the one hand clips have to be concise, in order to keep the viewer's attention, while on the other hand they have to be comprehensive, always communicating a full story. Paolo Rosa suggests that this fragmentation is a strength of the project. It allows visitors to freely combine the historical fragments by assembling the different memories and perspectives on the same topic from different testimonies in ways that are more personal and relevant to one's own experience.

If on the one hand narrative fragmentation allows freedom and interaction of the visitor with the oral tale, on the other hand it can be problematic when attempting to gain a more comprehensive view of the Resistance movement as a whole. Reflecting on the problems of mediating – and mediatising – oral histories in the museum Paolo Rainieri points out that:

If you don't listen to all the stories you cannot gain a comprehensive view. It is paramount for a museum to include oral histories, as they talk about first hand experience, they are the first accounts of that time. I cannot see other ways to mediate and represent stories in museum.¹⁴

Discussing the strategies involved in the curatorial design, Paolo Ranieri also clarifies his role in negotiating Studio Azzurro's artistic vision along with the need to make the heritage communicable. This entailed negotiating dramatic effects, transforming empathic engagement with historical interpretation into a communicable experience for the audience:

The vision of Studio Azzurro had a strong take on the artistic side and theatrical dramatisation of the work. At a point they imagined a space where voices and stories overlapped. In their vision this was a powerful means to evoke memory. Somehow I mediated the position of the historians and the participants, insisting on the importance of a narrative consistency. However short, the clips had to transfer a story that was linear, comprehensive and communicable.¹⁵

Pezzino argues that private memories always recall stories that are subjective and partial and suggests that this is a powerful and effective method of reconstruction of truths, wherein the viewer/istener is an interpreter. Oral history as an approach to reconstruct the past will be discussed in further depth at the end of the chapter. Pezzino makes a point here remarking the responsibility of the audience/viewer and her role as an interpreter in making and choosing her own path of meaning according to interest, emotional state, what s/he sees, listen to, and is drawn by.

Commenting on the active role of the viewer in the production of meaning, Rosa explains further how this modality of engagement worked very effectively especially with young audiences.

Pezzino confirms that this operation has been very effective in putting back in circulation themes which the younger generations found difficult to engage with, due to a lack of interest

and motivation when approaching the subject. He relates the potency of engagement to the media utilised and its capacity to transfer the poignancy of the personal accounts. “The narrative is not about heroic events. Rather, it is the account of everyday experiences of two important years in Italian history.”¹⁶

Rosa describes the role of the interface in the dynamics of interaction between the visitors and the protagonists:

... tactile perception works here as a means to physically engage the audience, it is equivalent to a question. The prevailing modality is oral communication, as words are what matters, the way of speaking, the voice. Also the size of the portraits is significant, as one can read the geography of facial expressions, and thus all the emotions that come through the face and the eyes. The intensity of the emotions is amplified by the size of the portrait, which runs into you and transfers a certain potency. This causes you to be involved in, almost overwhelmed by, the story. There’s a very strong experiential empathy here. .¹⁷

6.3.4 Controversial topics and historiographical interpretation

According to Pezzino, empowering visitors as interpreters in the meaning making process, does not imply a lack of historiographical interpretation. However it was important as historians for Pezzino and Pellini to acknowledge the debate on the problematic heritage of the Resistance, which has been ongoing over the last 20 years, and which concerns the anti-partisan memories and their social responsibilities about the consequences of their actions on the civilian population.

Pezzino explains that the way in which they dealt practically with this controversial heritage when editing the oral histories was to sequence clips presenting different, and in many cases opposite, perspectives on the same topic, one next to the other:

For instance Paolino Ranieri admits that if he had to consider the consequences and impact of their actions on the civilian population he couldn’t have led an armed Resistance the way he did. After his testimony, Piero del Giudice, stated exactly the opposite: that the main concern of the Appuan patriots, the group of partisans he was involved with, was to avoid repercussions on the civilian population, therefore patrolling the territory but always keeping away from town and villages.¹⁸

This way of constructing narratives enables the historians to negotiate controversial topics within the current debate on the Resistance movement inside the museum. Their goal was to present visitors with a complex, unresolved and multi-faceted portrait of the Resistance movement, avoiding any form of rhetoric and offering different paths of investigation and interpretation within this framework.

6.3.4.1 Issues of authorship

Pezzino argues that authorship is shared in an equal manner between the curators, artists,

designers and the historians. The former have devised a very empathic and effective formula to mediate the stories, while the latter, with their experience and local knowledge, managed to engage the right people and, most importantly, ask them the right questions. This collaboration worked in synergy and led to an outcome that is both aesthetic as well as scientifically valid. Paolo Ranieri also comments on the collaborative aspect of the project, arguing that authorship is distributed among all the actors who take part in the research, design and production process., thus entails that the work has multiple authors.

6.3.4.2 Decontextualised memory

When discussing the relationship between the visual and oral records, whereby visual records projected on the books help to contextualise the oral testimonies of the participants in a more visual manner for the audience, different perspectives arise from the interviewees.

Rosa clarifies that the images and videos of the books do not represent the stories portrayed on the screens in a literal sense. Rather, they create a context to the story and thus work as an evocative reference of the time, utilizing materials from a series of public archives and make them 'resonate' with the personal stories of the participants.

Pezzino admits that from a historiographical point of view, this aspect of the work is the most problematic, as materials have been sourced from a wide range of different museums, archives and collections in Italy and abroad. The images and footage are used to contextualise the oral histories with a visual experience, however none of them were local. Pezzino argues that this operation can be problematic and shows the tension between the dramatic effect and the coherence of the historic narrative. Dramatisation somehow dictated the necessity to give the stories a visual context, and therefore the necessity to source visual material outside of the local context, for the sake of achieving a more theatrical effect. When oral stories mention the massacres, the clips that are displayed on the books are from SS operations in Russia or Yugoslavia. "This was somehow a price to pay to enhance the empathy generated by the narrative".¹⁹

However, reflecting on the way interaction with the book activates the oral narrative, Pezzino notices an interesting interpretive aspect of the work which alludes to the circularity of memory between the oral and textual and visual based sources. Somehow we could think of the oral testimonies as the agents bringing the archive back to live and reviving the archival documents, footages and photographs with the potency of their personal stories.

6.3.5 Narrative and technical constraints

Discussing other issues related to the mediation of oral histories into a narrative form, Pezzino points out that the medium itself imposes narrative limitations on the plot. This prevents the inclusion of stories that are too long and complex. The interview with Laura Seghettino, for instance, exemplifies this limitation. Her story, which Pezzino encountered for the first time when collecting her testimony and then researched further afterwards, tells of a dramatic event that is still unclear and not fully investigated. While Laura was fighting with a local

partisan group her partner Facio was killed by partisans from another group. She was present at the time of the murder and forced to serve dinner on that night to the assassins at their camp. Afterwards she had to collaborate with their group until the end of the war. The legacy of that event didn't finish with the end of the war, but went on with Laura's involvement in the Communist party, dealing with the people who were responsible for that murder ²⁰. Pezzino admits that because of the necessity to keep the duration of the video to a maximum duration of one to two minutes it was impossible to fit the story into this timeframe:

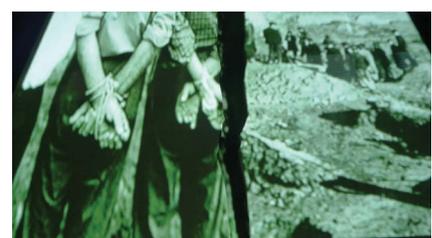
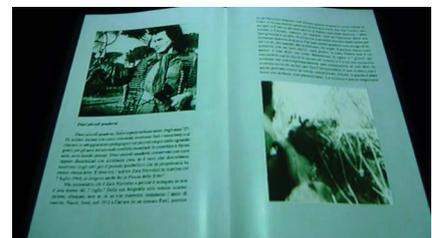
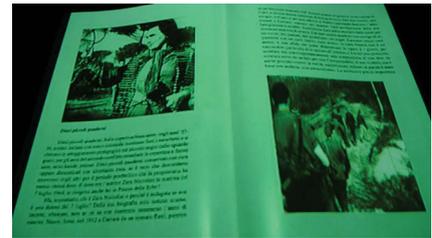
There are structural limitations due to the type of medium. However, the artistic strategies employed proved to be successful.²¹

Devising with the artistic directors the weakness and strengths of the museum and reflecting on what could be improved, Paolo Ranieri notices that the sound design needed further improvement. The installation works with a six channel surround sound system. When all channels are activated, the overlapping of sounds hindrances the overall experience ²². Pezzino also points out that sound overlap and reverberation are problematic, especially during group visits. When people are trying to activate all six books at the same time, this is not supported by the sound system.

6.3.6 Affective experience

Rosa discusses the impact of the museum on the participants as well as the audience, recalling how conversations with the participants after their first visit to the museum revealed their deep emotional involvement:

Not only did they identify deeply with the experience, but also felt that they were protagonists of history. Most of all they appreciated the way we used the material sensitively, with no redundancy, in a sharp manner, yet with a strong emotional power" The audience, as we found out from the comments and emails we received, walked out



Archival images projected on books. Photographs by the author, July 2010.

from the experience with something meaningful gained. This was something everyone told us about. The experience affected deeply from within, neither making concession to the spectacle, nor favouring affect more than meaning. It's a powerful emotional immersion. It somehow recreates the mood that induced these people to take up arms and to start a most difficult, risky, but very important battle.²³

Pezzino who has organized several group visit with local schools and university in the last ten years, admits that every time he goes back he feels emotionally engaged.

6.4 Themes, values and questions informing future works

For Paolo Ranieri the Museum of Resistance has been a very significant project from both a personal and professional point of view. The project initiated a series of works related to the same subject, marking a shift in his career. Among these works are the exhibition based on Primo Levi's '*A noi fu dato in sorte questo tempo*' at the former concentration camp of Fossoli near Carpi, two permanent installations, one at the Musée de la Résistance et de la Déportation de l'Isère Maison des Droits de l'Homme in Grenoble entitled *Résister Aujourd'hui*, and one at the *Museo Diffuso della Resistenza* in Turin. In all Ranieri's works the active participation of the audience is the key to the experience. With different modalities of interactions, the installations engage audiences in an active way, enabling them to make choices in their visit as well as offering the opportunity to encounter living testimonies in form of video portraits. Ranieri's works utilise interactive features integrated into objects, such as tables, chairs, postcards and books to immerse audience in a multisensorial memory-scape. A strong civil and social responsibility characterises Ranieri's approach to curatorial design, which is intended to preserve the legacy of his grandfather as he continues his lifelong struggle for justice, freedom, equality and civil rights.

Pezzino describes his involvement with the Museum of Resistance as a personal discovery. The experience has been critical to the understanding of the mechanisms underlying the ways in which narratives are presented to museum audiences:

My limitation is that I tend to 'absolutise' so much of this way of performing history that I underestimate the importance of displaying objects and memorabilia, which I believe can be easily integrated. The most important factor for the success of these kind of projects is a high level of professionalism in order to achieve a great emotional impact combined with a way of interpreting and sharing histories with larger audiences that is also scientifically valid. I envisage the flourishing of a network of museums [which are] able to become a reference on these subjects, not only locally but also internationally. This, however, requires funding and the will of institutions to collaborate on a shared goal.²⁴

Ten years after the opening of the Museum of Resistance, Paolo Rosa reflects on the

transformation of museum practice produced by digital culture and what they have learnt from this experience:

After this project we've started conceiving of museums as artworks, and thus looking at similar characteristics with the experience that in art history has been conveyed by frescoes. This experience has a strong narrative potency, made up of sequential steps. Our museums can be looked as three dimensional and multimedia frescoes made of sequential rooms, using a composite range of media, such as projections, real objects, environments and a blend of languages that enable interaction with material heritage.²⁵

Moving from the idea of digital technology as being merely instrumental, Rosa looks at the language of multimediality as a crossroads where art and museum practice can meet, thereby renegotiating innovation and tradition. According to Rosa multimediality introduces an important relational and experiential component to museum practice, transforming museums from being collections of objects, to narrative museums. As he explains further:

... this is a radical change. The culture of multimediality brings forth a great capacity for storytelling. This derives from its roots in cinematography. Multimediality also gives voice and representation to oral, gestural and sound cultures, which are hardly found in museums.²⁶

Highlighting the importance of the relational component inherent in multimedia and interactive works, Rosa argues that the language of interactive media is not only instrumental in order to produce a work that is innovative and technologically advanced. Rather, artists embracing this approach contribute to the development of a new aesthetics, whose relational modalities were previously unknown in the art realm.

In a recent book *L'arte fuori da se'* ('*Art out of itself*') Rosa and Balzola discuss the technological transformations of the digital revolution, with its impact on social behaviour and the role of the artist:

Art out of itself, in a positive sense, can function in both a symbolic and practical way as an antidote to the pathologies of our post-technological era, shifting the centre of gravity from individuality to collectivity, from the artwork as a final product, a masterpiece, to art as an open process, renegotiating democratisation and the participation of the viewer in the making of the artwork.²⁷

Reflecting on the responsibilities involved in creating interactive and participatory narratives, Rosa suggests that the author has a responsibility to trigger virtuous behaviours in the audience, engaging their sensitivity as an added dimension to the work:

In regards to thematic and historical museums, unlike museums of contemporary art, the

demand for interactive works – interpreting the collection – is quite significant. In this sector we found a potential for the expression of our artistic practice. Thematic museums are attentive and concerned with visitors, their behaviours and engagement ²⁸.

6.5 Reflections on orality and truth

The relationship between orality and multimediality emerged as a foundation upon which the approach to curatorial design of the Museum of Resistance was conceived and developed. Since the last three decades, narrative theory provided a framework for a critical theory of interface design²⁹. While relationships with hypertext and cybertext, are recurring in new media theory^{30,31}, relationships between multimediality and orality are not so well explored. In Angledool Stories Flick and Goodall³² discuss the challenges and opportunities for the making of ‘interactive history’ with an Aboriginal community using interactive multimedia and the technical and ethical considerations involved in interpreting, editing and accessing oral history for educational purposes.

In the paragraph that follows I explore further the implication of adopting storytelling as the dominant structuring metaphor of curatorial design. Looking at the ways we remember, represent and narrate the past, Tonkin argues that interconnections between memory, cognition and history are crucial in the ‘shaping of individual selves’ . In storytelling, interaction is an integral part in the construction of meaning of the story. Abbe Don explains immersion and experience to be the two main characteristics of storytelling. The kind of knowledge as mediated by storytelling, she argues, is “an experienced event unfolding in time, rather than objects outside of the audience’s experience”³⁴.

In the Museum of Resistance, the engagement of the audience with the narrative environment is a significant component facilitating encounter and intimacy with the memory that is mediated in the museum, enabling an active dialogue between the testimonies and the visitors.

Looking at Walter Ong’s reflections on narrativity and orality I investigate the characteristics of oral communication and its capacity of mediating difference and enabling resonance.

We must enter more profoundly into this world of sound as such, the I-thou world where, through the mysterious interior resonance which sound best of all provides, persons commune with persons, reaching one another’s interiors in a way in which one can never reach the interior of an ‘object. (...) Cry which strikes our ear, even the animal cry, is consequently a sign of an interior condition, indeed of that special interior focus of pitch of being which we call life, an invasion of all the atmosphere which surrounds a being by that being’s interior state, and in the case of man, it is an invasion of his own interior self-consciousness.³⁵

As Ong explains, narrative in oral cultures functions as a way to store, organise, retrieve and

communicate much of what is known: "In a writing or print culture, the text physically bonds whatever it contains and makes it possible to retrieve any kind of organization of thought as a whole. In primary oral cultures, where there is no text, the narrative serves to bond thought more massively and permanently than other genres"³⁶. Narratives are the repositories of an oral culture's lore, values, beliefs and history.

Analysing the cognitive, perceptive and spatial impacts of the transition from oral to written culture, Ong argues that "the shift from oral to written speech was essentially a shift from sound to visual space"³⁷. This reflects on how, according to Ong, the pervasive space of media is shaping a 'new auralty', that is, a modality of communication favouring the oral over the textual. This allows us to reflect further on how this modality of communication can negotiate the way oral histories are mediated and experienced in the museum challenging notions of authorship and transferring agency to the audience/listener as an active participant in the dialogue.

In asking 'What makes oral history different?' Alessandro Portelli examines the traits of oral communication through the characteristics of the narrators, their audiences and the structures of their narrations as means to mediate experience, participation, affect and construct meaning of the past. Explaining that what differentiates oral histories from other sources is the fact that they are narrative sources, Portelli discusses the relationship between personal truth, collective knowledge and imagination:

The boundary between what takes place outside the narrator and what happens inside, between what concerns the individual and what concerns the group, may become more elusive than in established written genres, so that personal 'truth' may coincide with shared 'imagination'.³⁸

Asking, from an historian's point of view, if we should 'believe' oral history, Portelli argues that –

The unique and precious element which oral sources force upon the historian and which no other sources possess in equal measure is the speaker's subjectivity. (...) Subjectivity is as much a business of history as are the more visible 'facts'. The importance of oral testimony may lie not in its adherence to fact, but rather in its departure from it, as imagination, symbolism and desire emerge. Therefore there are no 'false' oral sources. Once we have checked their factual credibility with all the established criteria of philological criticism and factual verification which are required by all types of sources anyway, the diversity of oral history consists in the fact that 'wrong' statements are still psychologically 'true' and that truth maybe be equally as important as factually reliable accounts.³⁹

These considerations provide an interesting insight into the role that oral histories can play in mediating difference and thus negotiating the encounter between listeners and narrators

within museum based interactions. The time of a story is always in the present tense, therefore its power of engaging the audience enables the suppression of spatial and temporal separation, which, as Agamben argued, is an essential component of experience.

In the way they negotiate chronological distance, oral sources, according to Portelli, mediate a connection with the past in a much closer personal manner. In this way their role in keeping memory alive is crucial. The Museum of Resistance has strived to pioneer an approach to the mediation of oral testimonies that belongs to a still controversial and unresolved heritage. It has pioneered an approach to the engagement of visitors with the museum that is democratic and participatory, enabling the creation of their own meanings and narrative paths. However this is a small museum, its significance and relevance for museum practice echoes beyond the local area whose heritage it is intended to maintain. Its resonance operates through the dialogue that the museum is capable of opening up between the present and the past, the young and the older generations. Here dialogue is performed in a literal sense and transposed in a narrative form which is capable not only of transferring stories from the past, but also of revealing the changes that have occurred between the time of the stories and our present era, just as the narrators telling their stories make sense of their own past and embed it in their present, to which we are also a part.

- 1 Museo Audiovisivo della Resistenza. Available at: <http://www.museodellaresistenza.it/> [Accessed May 2013]
- 2 Cederna, G., 2004. La storia siamo noi. In M. Fiorillo, F. Pelini, & P. Ranieri, eds. *Museo Audiovisivo della Resistenza delle province di Massa Carrara e La Spezia*. Sarzana, pp. 19–22.
- 3 Rosa, P., 2004. Il tavolo della memoria. In M. Fiorillo, F. Pelini, & P. Ranieri, eds. *Museo Audiovisivo della Resistenza delle province di Massa Carrara e La Spezia*. Sarzana, pp. 41–45. (My translation)
- 4 Interview by Monteverdi, A.M., 2010 in Resistance and Constitution. Audiovisual Settings By N03! *Digimag*, 56. Available at: www.digicult.it/digimag/issue-056/resistence-and-constitution-audiovisual-settings-by-n03/.
- 5 Cederna, G., 2004. Intervista a Paolino Ranieri. In M. Fiorillo, F. Pelini, & P. Ranieri, eds. *Museo Audiovisivo della Resistenza delle province di Massa Carrara e La Spezia*. Sarzana: Res Edizioni, pp. 23–29. (My translation)
- 6 Veronesi, F., 2011. Interview with Paolo Ranieri, Sarzana.
- 7 Cederna, G., 2004. Intervista a Paolino Ranieri, *Op.cit.*
- 8 Veronesi, F., 2010. Interview with Paolo Rosa, Studio Azzurro, Milan.
- 9 Veronesi, F., 2010. *Ibid.*
- 10 Veronesi, F., 2011. Interview with Paolo Pezzino, Pisa
- 11 Veronesi, F., 2011. *Ibid*
- 12 Veronesi, F., 2011. *Ibid*
- 13 Veronesi, F., 2011. *Ibid*
- 14 Veronesi, F., 2011. Interview with Paolo Pezzino, Pisa.
- 15 Veronesi, F., 2011. Interview with Paolo Ranieri.
- 16 Veronesi, F., 2011. *Ibid*
- 17 Veronesi, F., 2010. Interview with Paolo Rosa.
- 18 Veronesi, F., 2011. Interview with Paolo Pezzino.
- 19 Veronesi, F., 2011 *Ibid*
- 20 Veronesi, F., 2011 *Ibid*
- 21 Veronesi, F., 2011 *Ibid*
- 22 Veronesi, F., 2011. Interview with Paolo Ranieri
- 23 Veronesi, F., 2010. Interview with Paolo Rosa
- 24 Veronesi, F., 2011. Interview with Paolo Pezzino
- 25 Veronesi, F., 2010. Interview with Paolo Rosa
- 26 Rosa, P., 2011. Multimedialita', linguaggi, musei di narrazione. In E. Tavani, ed. *Parole ed estetica dei nuovi media*. Roma: Carrocci, pp. 163–170, p.166.
- 27 Balzola, A. & Rosa, P., 2011. *L' arte fuori di sé. Un manifesto per l'età post-tecnologica*, Milano: Feltrinelli, cited in Caramellino, G., 2012. Un caffè con Paolo Rosa. Interview. Available at: <http://gabrielecaramellino.nova100.ilsole24ore>.

- com/2012/01/un-caffè-con-paolo-rosa.html
- 28 Caramellino, G., 2012, Interview, *Op.cit.*
 - 29 Laurel, B. & Mountford, S.J., 1990. The Art of human-computer interface design, Reading Mass: Addison-Wesley Pub. Co.
 - 30 Manovich, L., 2001. The language of new media, Cambridge, Mass.: MIT Press.
 - 31 Aarseth, E.J., 2003. Nonlinearity and Literary Theory. In N. Wardrip-Fruin & N. Montford, eds. The new media reader. Cambridge, Mass.: MIT Press, pp. 762–780.
 - 32 Flick, K. & Goodall, H., 1998. Angledool stories. In R. Perks & A. Thomson, eds. The oral history reader. New York: Routledge, pp. 420–431
 - 33 Tonkin, E., 1992. Narrating our pasts : the social construction of oral history., Cambridge UK, New York: Cambridge University Press..
 - 34 Don, A., 1990. Narrative and the Interface. In he Art of human-computer interface design. Reading Mass: Addison-Wesley Pub. Co., pp. 296–309, p.305
 - 35 Ong, W.J., 1972. A Dialectic of Aural and Objective Correlatives. In D. Lodge, ed. Twentieth Century Literary Criticism. London: Longman, pp. 498–508, pp.499-500.
 - 36 Ong, W.J., 1988. Orality and literacy : the technologizing of the word, London; New York: Routledge, p.139.
 - 37 Ong, W.J., 1988, *Ibid*, p.117
 - 38 Portelli, A., 1998. What makes oral history different. In R. Perks & A. Thomson, eds. The oral history reader. Cambridge, Mass.: MIT Press, pp. 63–74, p.66.
 - 39 Portelli, A., 1998, *Ibid*, p.67.
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7 PLACE-HAMPI

Place-Hampi was originally developed under the Australian Research Council's Linkage Project's scheme. The project's initial investigators were Jeffrey Shaw, Dennis Del Favero, Neil Brown, Paul Compton, Maurice Pagnucco, Andre Van Schaik, Craig Jin, Peter Weibel, Sarah Kenderdine, Tim Hart, John Fritz, Paul Doornbusch and Volker Kuchelmeister.

It then developed as a new media art installation, creating what the authors refer to as an "embodied theatre of participation in the drama of Hindu mythology"¹ focused on the most significant archaeological, historical and sacred locations of the World Heritage site of Vijayanagar in Hampi, Karanataka, southern India. The main feature of the interactive installation is described as follows:

The highly original feature of Place-Hampi is its interactive projection system, invented by Jeffrey Shaw in 1995, and which uses stereoscopic 3D projection. Its main attraction is the motorised platform that lets the viewer rotate in their projected point of view in 360 degree within its large cylindrical screen and thus explore a multi-media multi-sensory presentation of the Hampi's astounding environment.²

7.1 Introduction

Place-Hampi is an example of what the authors explain is a "cross-cultural design produced with global resources"³, a project about a single site which has been installed at different venues around the world. [contradiction] Between 2006 and 2010 it has toured extensively to Melbourne, Lille, Berlin, Singapore and Shanghai. It is now permanently installed at the Applied Laboratory for Interactive Visualization and Embodiment (ALiVE), City University, Hong Kong. Discussing the technical features of iCinema, Sarah Kenderdine explains that:

Place-Hampi exploits the technological and expressive features of iCinema's Advanced

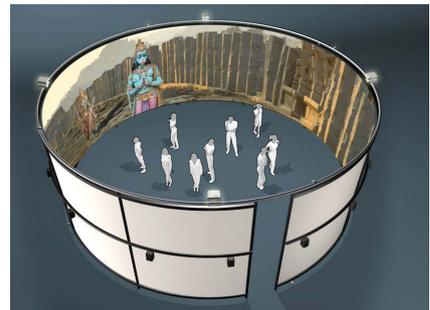
Visualization and Interaction Environment (AVIE). AVIE allows full 360-degree stereoscopic projection within a 10m. diameter cylindrical screen, 24-channel surround sound, and multi-user interaction via a high-resolution video tracking system that detects and interprets the movements and gestures of the audience.⁴

Further details regarding the technical infrastructure of AVIE I have been outlined in the following quotes, which demonstrate how authors have described the technical characteristics of iCinema and how it enables interaction through gesture and movement:

The AVIE screen is a 10 metres diameter cylinder, 3.6 metres high. The dimensions provide a vertical field of view of 40° for a centrally located viewer. 12 SXGA+ projectors are mounted in pairs so as to illuminate the entire cylinder. The system includes 24 high-quality loud speakers, distributed evenly around the top and bottom screen, provide real-time spatial audio.⁵

Twelve infra-red cameras, distributed at various locations overhead, provide coverage of the entire AVIE arena. Twenty infra-red flood lights provide illumination. From this data the systems tracks individuals proximity to the screen, distribution in space, when people come in to contact with one another and estimated head position. Hand gesture information can also be tracked.⁶

Place-Hampi shows a virtually representative boulder-strewn landscape that is populated by a constellation of 18 cylinders, each one of which being a high-resolution 360-degree stereoscopic photographic panorama. Using a motorised platform the user can rotate the projected image within an immersive 9-meter diameter 360-degree screen and explore many of Hampi's most significant



Place-Hampi, 3D model. Retrieved from <http://icinema.edu.au/projects/place-hampi/>

locations.⁷

The village of Hampi is located in Northern Karnataka, and is built on the ruins of Vijayanagara, the former capital of the Vijayanagara Empire, which existed between the 14th and 16th centuries and was one of the most populated cities in the world, with a population of approximately 500,000 inhabitants. The city flourished for over two centuries during the Vijayanagara Empire, its name translating as 'city of victory'. Its decay began with the onset of armed invasions from the Muslim kingdoms based in the Northern Deccan. In 1565 it was conquered by Muslim armies. Henceforth incursions and predations into the city lasted for over a century. Despite the end of its history as a capital, the city continued to attract pilgrims from all over India given the many sites, temples, caves, hills and ponds in the region, and which are believed to be sacred.

7.2 My experience

I visited *Place-Hampi* for the first time at the *Immigration Museum* in Melbourne in 2009. Only a few months beforehand I had returned from a trip to India, during which I visited Hampi among other world heritage sites in Karnataka.

During my first experience with *Place-Hampi* I remember the striking resemblance with the real site, the feeling of being back there, walking on the same pathways, looking at the same landscapes, the river, the rice fields. My exploration aimed at finding familiar places and sights, recognising the vestiges of the temples through which I used to wander, accompanied by local monkeys as guides. I was mesmerised by such a hyper-realistic rendition of my experience there, which I could not imagine it was possible to replicate thousands of miles away in Melbourne, in a museum. My attention was captured by the three dimensional landscape, not only surrounding me, but also opening up and widening in consonance with my movement in that space. Entering different scenes and zooming in and out of the frame with a controller, I had the feeling I could explore the place from within, entering the textures and details of the geography and the terrain, and the materiality of the architecture. I soon began to realise that such a self-guided exploratory experience was not only about walking through a hyper real virtual rendition of the Hampi site, but also about discovering curious characters and events hidden in the landscape. Behind a rock there was a Hindu god performing a traditional dance, a bird flying off a crop. I remember that making these discoveries engaged me in wanting to discover more of the events animating the landscape. The aesthetics of computer-generated imagery was somehow contrasted with the photorealistic appearance of the site, an evident superimposition. However that didn't prevent me from engaging with the place and the stories it held for me to discover.

I remember navigation was not always as smooth as I wished, especially coming in and out of the scenes presented in the form of cylindrical rooms arranged on the landscape. I found that controlling the pace of movement was difficult. Therefore, I often found myself lost in the

landscape, lacking physical references and with no clues of where to go or what to search for. This, I believe, was part of the experience, as my familiarity and encounter with virtual Hampi emerged by first getting lost in it, then by creating my own set of reference points to guide my wayfinding among temples, gods and other events along the way. Getting lost in *Place-Hampi* has been a memorable experience, reinforcing the real experience at the Hampi-site, with new memories, images, more vivid details. It also mediated a sense of respect and the sacredness of the site by enabling a purposeless wandering and the contemplation of a silent landscape, populated only by songs and dances, birds and natural ambient sounds without other distraction. Such a contemplative experience is rather difficult to achieve in the real site, as Hampi is one of the most popular tourist destinations in India. The archaeological park attracts thousands of visitors every day, all year round. Therefore it was quite magical for me to live that experience again, but this time in the silent, contemplative atmosphere of the iCinema, where I was the only visitor. I wondered what my experience would have been like if hadn't visited Hampi before *Place-Hampi*. Would it have created expectations of the Hampi site that a real experience would have somehow failed to fulfill?

I had the opportunity to experience the same installation for the second time at ALiVE Laboratory in Hong Kong three years later. Building on my previous experience, this time I was interested in understanding more about the design strategies applied, how engagement was produced and the range of possibilities available for the user to choose from.

I remember feeling a simultaneous sense of immersion and dislocation, a moving feeling of being there, as in my first visit, and at the same time feeling estranged from the place, as if I were new to it. This second time the sense of hyper-realistic immersion was even stronger, mediated by my increased attention to details, my curiosity and deeper awareness of the possibility of my interaction with the environment. I remember having an almost tactile



Place-Hampi, Navigation through the stereoscopic panorama, retrieved from <http://icinema.edu.au/projects/place-hampi/>

appreciation of walking and sensing the physical terrain, without touching it. I appreciated the animations, which were vivid and moving. I felt a mix of displacement, alienation and sense of belonging.

As I was investigating how narratives were developed I appreciated particularly the possibility to choose different scenes or the cylinder-shaped rooms to explore. I interpreted this as a way to negotiate the impossibility of a comprehensive view of Hampi. This involved not only the physical landscape, which is in itself vast and dotted with temples and shrines laid out on an extensive stretch of land, was difficult to grasp in its wholeness, but also the aesthetics and context-specific meaning of the cultural heritage of Hindu mythology, therefore difficult to translate to Western audiences. I believed this was a way to negotiate my curiosity and desire to know the place and its culture given the impossibility of a comprehensive understanding and insider perspective on the place and its heritage, recognizing my distance and estrangement to both place and culture. The idea of entering a 'world' that somehow mediated a perspective of Hampi's universe, was to me a very powerful way to negotiate an experience of place and culture and which was facilitated by the possibility to initiate a self-guided journey and at the same time being aware of the limits and partiality of that perspective.

7.3 Discourses

In the paragraphs that follow I present the strategies employed within the interpretive and design stages of the project, as discussed by the authors in several papers published throughout the seven year development process of *Place-Hampi*, combined with findings from audience evaluation studies carried out by the authors and other scholars. These are interwoven with excerpts of interviews and reflections from other critics and practitioners who have engaged with the work. The main investigators and scholars involved in the project, both its design, productions and evaluation stages, are presented as follows:

Dr. Sarah Kenderdine researches interactive and immersive experiences for museums and galleries. With a background in maritime archaeology, she is a pioneer in panoramic and stereoscopic display systems and content creation. Her current focus is on visual analytics for large-scale heterogeneous cultural datasets as well as new modalities for the interpretation of tangible and intangible heritage. Kenderdine is a Professor and Director of the Research Centre for Innovation in Galleries, Libraries, Archives and Museum (iGLAM) and Director of Research at the Applied Laboratory for Interactive Visualization and Embodiment (ALiVE), City University, Hong Kong.

Professor Jeffrey Shaw has been a leading figure in new media art since its emergence from the performance, expanded cinema and installation paradigms of the 1960s to its present day technologically-informed and virtualized forms. In a prolific career based on the widely exhibited and critically acclaimed work, he has pioneered the creative use of digital

media technologies in the fields of virtual and augmented reality, immersive visualization environments, navigable cinematic systems and interactive narrative.

From 1991 to 2003 he was director of the Institute for Visual Media at the ZKM Center for Art and Media Karlsruhe, Germany. Since 2003 he has been founding co-director of the Center of Interactive Cinema Research (iCinema) at the University of New South Wales, Sydney, Australia. In 2009 Shaw joined City University in Hong Kong as Professor of Media Art and Dean of the School of Creative Media (SCM).⁸

In the discussion that follows I explore how questions of embodiment, co-presence, performativity and cross-cultural interpretation informed the research approach and contributed to develop a new aesthetics integrating both theoretical and practical aspects of research in virtual heritage.

7.3.1 Embodiment

Embodiment, for Shaw and Kenderdine, is the foundation of interaction between the user and the system and ‘a participatory activity’⁹. Explaining his fascination with new media, Jeffrey Shaw discusses how the notions of embodiment and interactivity are fundamental to an understanding of the relationship between the participant and the authored art experience: “Embodiment, is a viewer’s full body experience offered by media art. Interactivity is the way in which the work itself is open for the viewer manipulation and exploration”.¹⁰

Embodiment and interactivity are foundations of the conceptual framework of *Place-Hampi* and constitute what Sarah Kenderdine argues are the necessary prerequisites for building ‘presence’ and ‘place’ in virtual heritage landscapes.

7.3.2 Interaction: immersion, engagement, co-presence and movement

The authors describe the installation as a “kinaesthetic embodied theatre of experience”¹¹ accommodating up to 25 people at a time, and who freely move across the space. They attribute its success to the use of stereoscopy and circular movement of the projected images which forces viewers to walk around in the installation space. In discussing the relationship between movement and perception of depth or three dimensionality, the authors refer to James Gibson’s studies examining the ‘optic flow patterns’ associated with movements in the world. As they explain, “the brain reads to give us a perception of three dimensions. If we move around, we see the objects of the world moving across our visual field relative to each other”.¹²

According to the authors, the base for viewers’ engagement with Hampi’s virtual world consists of a combination of the stereoscopic rendering of Hampi’s landscape with the movement of the viewer in the installation space, or ‘optic flow’. This dynamic interaction enables both perceptual and kinaesthetic realism.

The perceptual continuity between real and virtual spaces, which gives the audience the impression that they are physically present at Vijayanagara is achieved, according to Kenderdine, by co-joining ambisonic sound recordings on site with the exact location and time

of each stereoscopic panoramic photograph. The visual and aural landscape is then augmented by the animations of the Hindu Gods and music compositions from classical Carnatic repertoires.

Evaluation studies showed that immersion in *Place-Hampi* (henceforth PH) “draws participants into a somatic engagement with the virtual in a way that is largely unprecedented in museum-based multimedia”.¹³

The design of the immersive architecture demands that people move around in the space in a continuous process of re-orienting themselves in relation to their position and the changing augmented virtual landscapes:

As the user controls and navigates the space, the dynamic interactive rendering system delivers an immersive sonic experience that is intimately connected with the visually panoramic and augmented space.

The conjunction of these singular audiovisual and interactive strategies of representation articulates an unprecedented level of viewer co-presence in the narrative exploration of a virtual cultural landscape.¹⁴

From early initial experiments with *Corpocinema* in the late '60s and early '70s, Shaw has worked extensively with panoramic presentation in an unconventional manner showing the potential of a complete 360 degree image. The paradigm of works such as PH is a “mobile viewing window, a kind of porthole that only partially reveals the total image”.¹⁵ According to Shaw, this is a powerful strategy of embodiment enabling the viewer to interactively move the projection window around in the panoramic space, thus gradually “accumulating a visual memory of the entire field of representation”¹⁶. Embodiment develops through a “slowly accumulated internalized experience” of the work which is gradually revealed to the viewer. Moving on a platform and across the room, users and spectators embark on a journey whose space-time coordinates are re-constructed and re-negotiated each time .



The making of Place-Hampi. Ambisonic sound recording on site. Retrieved from <http://icinema.edu.au/projects/place-hampi/>

Typically, losing the awareness of one's own position in relation to the surroundings is considered a characteristic of successfully operating immersive environments. PH not only works as an immersive experience but also as a social one. In examining the social aspect of the interaction between visitors mediated by the work, evaluation studies reported that the majority of respondents agreed that interacting with PH was a social experience that they enjoyed sharing with other people. This social interaction led to a co-experience which developed as visitors collaborated and shared their knowledge on how to interact in the multimedia environment. According to the authors, the proximity of audience members within the room and "the continual movement of the audience in accordance with the rotation of the platform predicate an explicit awareness of dwelling together in the space"¹⁷ Co-experience and co-presence are found to be key components of the physical and social interaction with PH.: "This mutuality constituted an opportunity to collaboratively journeying in Place-Hampi and the cognitive challenges of inhabiting the virtual and real worlds simultaneously"¹⁸ .

7.3.3 Entanglement

The importance of sensory-based and phenomenological engagement with the world is seen by Kenderdine as a fundamental component of the experience of virtual heritage. Situating the body at the forefront of research in virtual heritage challenges dominant modes of representation and narrative construction, as Kenderdine argues:

If in fact embodiment is the experience of the world through all the senses of the body, then narrative strategies privileging one sense over the other, or emphasising certain aspects over others, prove to be unequal to the task of embodied representation. Embodiment explodes narrative and other traditional modes of representation.¹⁹

Renegotiating the dualistic opposition between subject and object, representation and the represented, Kenderdine suggests that in this approach to virtual heritage, people and things are entangled. Supporting this concept of entanglement between people / viewers, the materiality of the landscape and the machine agents interpreting the drama of Hindu mythology, PH draws on current research on the convergence between interpretive approaches in archaeology and contemporary performance theory. With a background in archaeology, Kenderdine clarifies this correlation and further explains post-processual archaeology as an alternative approach enabling the study of representation with a kinaesthetic-based enquiry:

In her *Handbook of Material Culture*, Linda Young argues that 'the somatic confronts textuality and visuality as our culture's dominant modes of understanding material culture, and suggest that the embodied subject and its multiple, concomitants ways of sensing, feeling, knowing, performing, experiencing, offer dynamic routes to different perceptions of the human relation to the material'. The potential of a kinaesthetic approach, for Christopher

Tilley, practitioner of archaeology, ‘stresses the role of the carnal human body’ enabling specific embodied perceptions and reactions.²⁰

PH offered a context in which to further explore a kinesthetic approach to archaeology. This, according to Kenderdine, afforded new opportunities for both landscape and archaeological studies to integrate the understanding of the dynamics of the body in motion in both real and digital spaces. Mediation is considered by Kenderdine and other scholars discussing archaeological engagement with place, as a modality conveying the multiplicity of material presence: “Critically, mediation calls attention to the co-action of what are conventionally split apart – subject and object – in accounts of representation”²¹. Mediation, in archaeology, occurs across a series of transformations between material presence and media. Mediation also allows one to contemplate ways of transforming aspects of the material past while at the same time bringing forth something of the locality, multiplicity and materiality left behind with conventional processes of documentation and inscription. As Christopher Witmore argues, that “Mediation is a process that allows us to attain richer and fuller translations of bodily experience and materiality that are located, multi-textured, reflexive, sensory, and polysemous”.²²

7.3.4 Performativity

Interaction with PH develops what the authors refer to as a ‘trichotomy’, that is a three-way relationship between system, user and spectator. Drawing on performative studies the authors describe the dynamics occurring in the interaction with PH as a dramaturgy, in which users are ‘inter-actors’ and their interaction with the system becomes a ‘performance’:

PH design relates not only to support the direct relationship between the user and system but also the resulting performance with its spectatorial scrutiny. This interchange, between all participants gives rise to meanings of the social for interaction design—as a defining attribute.²³

Acting in the virtual immersive theatre of PH is described by the authors as a participatory experience contrasting classic static cinematic experiences. Performance theorist Gay McAuley reflects on the complex synergy that is created in theatres between spectators and performers:

In the theatre, due to the live presence of both spectators and performers, the energy circulates from performer to spectator and back again, from spectator to performer and back again... the live presence of both performers and spectators creates complex flows of energy between both groups.²⁴

Peter Dalsgaard and Lone Koefoed-Hansen describe in more detail the dynamic between actors and spectators:

It is the ways in which the user perceives and experiences the act of interacting with the system under the potentially scrutiny of spectators that greatly influences the interaction as a whole... it is precisely this awareness of the (potentiality of a) spectator that transforms the user into a performer.²⁵

PH stages a complex, multi-participatory dynamic where the user is simultaneously “the operator of the system, the performer of the system and the spectator”²⁶. The fact that users are aware of this dynamic and of each other’s presence creates, according to the authors, a tension between performance and immersion:

The tension that occurs is between the spectators watching the user and the users’ awareness of being the centre of the spectators gaze. The user not only acts in relation to the system but also is propelled by the knowledge that her perception of the system is a performance for others.²⁷

An interplay between perceiving and performing constitutes the foundation of the form and expression of PH. In this interplay on the one hand users/actors perform in the interaction with the system and perceive themselves in relation to the system, their surroundings and other users. On the other hand, the spectator “invests in the user as a surrogate self, demanding a ‘correct’ performance of the system that brings forth the performance”²⁸. There is a constant interplay between watching and being watched, between performance and spectatorship, which the majority of respondents are aware of, but do not seem to be affected by their interaction with P.H., as reported by evaluation studies addressing this tension.

7.3.5 Co-evolutionary narrativity

“Presence is”, according to Kenderdine, an “established body of inquiry fundamental to the way in which PH is constructed”²⁹. Presence is enabled in immersive environments when the behaviours of participants and virtual characters can co-evolve by making reference to each others actions. PH endeavours to facilitate these dynamics between actors/viewers and virtual characters representing Hindu gods and animated mythological events. Kenderdine explains how this entanglement is a condition for creating a narrative that co-evolves as participants and the system’s intelligence make sense of each other’s actions:

In PH a translation of the spatial potential is enacted whereby participants are able to transform the myths of place into the drama of a co-evolving narrative by their actions within the virtual landscape. (...) The participants operate as protagonists as their presence allows events to unfold in ways that are sensitive to their actions, and their responses, in turn, influence the real-time action. (...) This conversation envisaged by pilgrims between mythological characters and devotional site is integrated into the system design.³⁰

In PH the heritage object is treated as “as an evolving experience in which the story told is not pre-rehearsed but emerging as an interactive dialogue between viewers and agents”³¹. Referring to Manuel De Landa and Gilles Deleuze’s speculations on cinematic narrativity, Kenderdine explains that narrative is “a process that interweaves viewers and cinematic images in the production of new multi-layered events that simultaneously incorporate the past and present”³².

PH enables encounters between viewers and virtual characters in an ‘equalising way’, wherein machine agents have autonomy. This, according to Kenderdine, transforms “the encounter in an exciting and unpredictable drama in which events are co-produced by machine and human”³³..

As an example of co-evolutionary narrative, Kenderdine describes how the encounter and interaction with a tribe of synthetic monkeys is staged and how agency is transferred to the monkey characters, whose actions are co-joined with the behaviour of the users.

In many interpretations of the Ramayana, Hampi is considered Kishkinda – the kingdom of the monkeys. The mythological inhabitants have counterparts in the real world and at Hampi today the monkeys are prevalent revered by the faithful, but often delinquent in their behaviour towards permanent inhabitants and tourists. In the research Place-Hampi Demonstrator Two incorporates a tribe of synthetic CG monkeys who operate as autonomous agents within one of the stereo panoramic scenes shot at Hampi (Hemakuta Hill). Their behaviour have a co-evolutionary relationship to that of the behaviours of the real visitors within AVIE. Machine agents act and observe the consequences of their actions in the real world and then formulate new actions according to certain goals that have been imprinted in their identities. (...) In Place-Hampi for example, a mother monkey may prioritise the protection of her young, and will take appropriate action to protect her territory from the proximity of humans. Others will be given various drives towards socialisation with the human visitors, e.g., hunger for food, interest in bodily antics, or merely curiosity.³⁴ .

According to Kenderdine, the concept of digital narratives applied in new media remain predominantly uni-modal, lacking the mediation of “the complex multi-dimensional quality of digital and cultural processes”³⁵. In PH the interchange between human and machine entities enables the generation of narratives that are multi-dimensional.

7.3.6 Aesthetic resonance

The way in which interpretive and design strategies renegotiate the engagement of viewers with virtual representations of Hindu mythology in PH finds a correlation within both the tradition of Hampi as an active pilgrim site – and the way interactions unfold between pilgrims

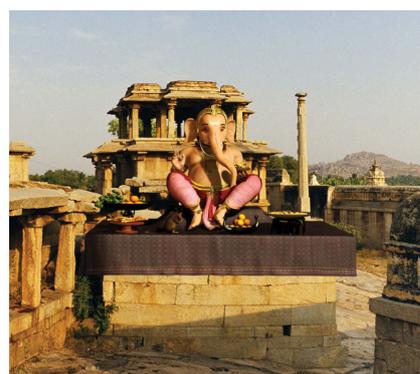
and site – as well as traditional Hindu concepts of ‘seeing and being seen’.

As Kenderdine explains Hampi is today an active pilgrimage site. Pilgrims believe that physical objects, as well as features of the landscape and the architecture are infused with the presence and power of particular deities. Furthermore, Hindu religious practices acknowledge the importance of the concept of *darshan*, that is the simultaneous act of ‘seeing and being seen’ by a deity, which is a transformative and powerful act. In sacred pilgrimage sites such as Hampi interchanges unfold seamlessly between mythological deities, pilgrims, sacred objects and the features of the landscape.

PH embeds and mediates a cultural knowledge that is consistent with the Hindu aesthetics and cultural tradition found in Hindu religious iconography, known as ‘magical realism’. The concept underpinning this aesthetics is the enabling of a somatic relationship with images in order to acquire specific related powers. In regards to the rendition of computer graphic characters enacting gods and goddesses from Hindu mythology in PH, Kenderdine reminds us that:

These animations were modeled in the popular aesthetic of magical realism that is specific to the region. (...) The panoramic cylinders are positioned in a terrain whose ground is marked with an iconic drawing of the simian god Hanuman. (...) The monitor screen that is part of the user interface shows an aerial view of this virtual environment centred on the viewer position in relation to the ‘ground plan’ of Hanuman’s body.³⁶ .

In the Indian magical realist aesthetics, images play a crucial role in the mediation of presence and engagement with the deities, as explained by the research of the anthropologists Roy Wagner and Marilyn Strathern Pinney. Referring to the concept of ‘corpothetics’ as opposed to a disembodied and de-contextualised representation of the Indian imagery, in



Place-Hampi, ‘Magical Realism’. Retrieved from <http://icinema.edu.au/projects/place-hampi/>

the making of PH Kenderdine explains how Wagner's and Pinney's work –

... supports the argument that certain (Hindu traditional) cultural practices treat images as compressed performances and that the culturally determined experience of an image affects both its power and meaning. Pinney extrapolates this cultural response to imagery to the Indian context using the concept of *darshan* and argues for the notion of 'corporethetics' – as embodied, corporeal aesthetics – as opposed to disassociated representation³⁷ T

Endowing images with a moral gravity is the basis, as Pinney explains, of the so-called Indian magical realism, a term coined by German art critic Franz Roh in 1920. Hindu worship, therefore, implies a bodily relationship with images of devotion:

In these images the beholder is a worshipper, drinking in the eyes of the deity that gazes directly back at him. (...) The relevant questions then becomes not how images 'look', but what they can do³⁸

Relating these reflections back to the aesthetics mediated by PH, Kenderdine argues that:

It is with these understanding that P.H. has been approached utilising technologies of immersion (the sensorium) to become an embodying mechanism, of cultural space. The promotion of dialogues of engagement in P.H. is significant. The dialogues embedded in the imagery of a cultural landscape activate the knowledge contained there. In addition, P.H. seeks to recognise the authority of both the origin and the representational scheme, and thereby to provide an environment where the sensorial is active to respond to the representational scheme the images emerge from.³⁹ .

7.3.7 Cross-cultural mediation

Reflections on cross-cultural mediation were at the core of the project's interpretation and design, as the authors point out:

... virtual heritage applications, if they are to be culturally relevant, must anticipate the impact, of the visual and immersive strategy employed in the system design, on diverse cultural audiences. PH investigates experiences of encounter – as tangible knowledge that has implications for immersive heritage visualisations for these diverse cultural audiences.⁴⁰

This cultural diversity was also reflected in the design team in which:

... a large interdisciplinary team of professionals including south Indian art historical and archaeological scholars, Indian classical Carnatic composers and Indian artists and animators, classical Indian dancers, computer engineers, and museum and media arts

specialists, contributed to PH. The diversity of the team ensured a sympathetic 'reading' of place in iconographic, historical and contemporary cultural terms.⁴¹

In addition the potential international and multicultural audience of PH has been, according to the authors, a design target from the project's early stage of conception. A task for the design team was to "find elements able to translate PH for visitors from different communities and international visitors"⁴². Strategies to integrate the installation within the different museum contexts were also considered as part of the user experience: "At the locations where PH was installed, the work became part of different narratives inside different museum spaces and exhibitions with different focus"⁴³.

At the *Museum of Immigration* in Melbourne, for instance, additional integrative material was made available for visitors, offering interactive maps and locations with descriptive text, conversations with archaeologists in the form of video and live presentation, fieldwork archival images from over 30 years of archaeological research in Hampi.

The evaluation study at the Museum of Immigration targeted a wide range of culturally diverse communities among the museum's different visitors. The study aimed to understand how different communities made sense and constructed the meaning of their experience of interacting with PH according to different historical and cultural experiences, specific knowledge, sexuality, disability, age, socio-economic factors and visiting practices:

'Making meaning, understanding (and more in general learning), inclusion' [**check quote marks**] are the three main steps of the visitors experience and form the base of the projects' research questions. Observing visitors and interviewing them after their visit, the authors examine the narratives produced pose questions on what visitors have learnt from the experience.⁴⁴

Findings reported that the experience of PH has resulted in the engagement and inclusion of visitors of different ages, literacy, abilities and belonging to different interpretive communities: "It was also a learning experience for the institution, dealing with this new technology"⁴⁵.

Examining the qualities of multicultural experiences in immersive environments, the study utilises key-concepts such as "enhancement of self-esteem, confidence, creativity, empowerment, social regeneration, tolerance, challenging of stereotypes, inclusivity"⁴⁶ as lenses to read the narratives produced by visitors' responses.

"*Can I stay all day*" and "*I'm proud of it*" are two stories from two visitors' experience showing different responses to interpretation, learning and inclusion. Visitor 1 found it to be an excellent learning tool for culture transmission:

The experience was inclusive for Visitor 2, an Indian Australian Hindu man, as he had the opportunity of seeing his knowledge recognised. This was a very positive experience. As an Indian, he found a tool for cultural transmission and he came several times with

children and other Indian friends. The engagement was profound, he said, it made him feel very proud⁴⁷.

Both visitors were willing to go back to India and visit Hampi after the exhibition. Issues related to 'inclusivity' were also examined in relation to computer literacy. In this regard, the authors noticed that ... "visitors often collaborated with each other and negotiated what panoramas to explore. This behaviour was observed in families and groups of friends but also visitors who met for the first time."⁴⁸

7.4 Reflections on digital aesthetics and virtual heritage practices

Invoking James Clifford's concept of the 'contact zone', Kenderdine and Schettino reflect on the challenges faced by contemporary museums in the exhibition of different cultural identities and which become places of multicultural education and dialogue. In a global context, curators, designers and museum makers are facing increasing demands to engage with growing numbers of international visitors as well as, at the same time, the need to re-contextualise temporary and travelling exhibitions for local audiences. Referring to Arjun Appadurai's investigations in transcultural studies, the authors suggest that the reciprocity between the global and the local can breed new directions in the "production of locality"⁴⁹ and detail effective examples of museums adopting approaches to inclusivity and intercultural mediation.

An example of this are the new interpretive trails exploring the museum's collection developed at the Victoria and Albert Museum during the *From the margins to the core* conference in 2010. Guided tours by local residents and artists were offered to visitors as alternative entry points to the museum's collection. Of particular significance was the trail of a Rwandan refugee who chose objects on display to tell stories about her own experience ranging from Rwanda to the UK. Other museums, as the authors remind us, chose to intervene on the redesign of an exhibition's space in order to enable more inclusive and intercultural encounters. The Ashmolean Museum in Oxford, for instance, recently engaged with a re-display of its collection emphasising existing connections between cultures.

In virtual heritage applications such as PH, co-presence is, according to the authors, a powerful means of keeping heritage alive. In this regard, researchers are developing new strategies for the

... rendering of cultural content and heritage landscapes, demonstrating the importance of presence and co-presence with the past, as theatres of embodied experience from a cultural imaginary located here and now.⁵⁰

These experiences support the notion of landscape as being 'alive', and constantly brought

back to life by new encounters and interchanges.

Referring to Homi Bhabha's reflections on location and culture, Kenderdine examines the role that 'newness' plays in renegotiating the encounter between present and past:

The borderline work of culture demands an encounter with 'newness' that is not part of the continuum of the past and person. It creates a sense of the new as an insurgent act of cultural translation. Such art does not merely recall the past as social cause or aesthetic precedent: it renews the past, refiguring it as a contingent 'in-between' space, that innovates and interrupts the performance of the present.⁵¹

Reflecting on the challenges and new perspectives opened up by works situated at the intersection between digital cultural heritage practice and interactive art, such as PH, Tim Barker argues that this media form is marked by process. According to Barker, the revolutionary aspects of the processual aesthetics of interactive media is to

... think in terms of aesthetic events rather than aesthetic objects and, in order to do this, we must move away from a tradition of aesthetics that positions the human subject and her conscious mind at the centre of experience. We instead need to move toward an aesthetic philosophy of the event.⁵² [ref]

In his examination of Shaw's works, a central part of Barker's argument is that user and machine initiate occasions through one another. Jeffrey Shaw refers to the aesthetics of new media as a 'recombinatory aesthetics' which renegotiates interrelationships between user/machine and the artist:

First one makes a choice by addressing the metadata; this choice then is interpreted by those algorithms that in turn generates various combinatory outputs. In the process there are many chance elements where the computer is a protagonist of the narrative of reconstruction of these materials.⁵³

I am fascinated by these interrelationships and unexpected outcomes that are both rewarding and aesthetically satisfying. I am reminded of Francis Bacon who threw paint at his canvases to get out of a procedural bind. When working with computing machines one has this happening all the time because the operations of the machine trigger new paths of thought, of action. The new media technologies, despite their virtuosity, do impose severe constraints, and the artistry is to take these constraints and convert them into an aesthetic advantage.⁵⁴

The 'recombinatory' and 'processual' aesthetics of interactive media poses new challenges and at the same time opens up new possibilities for the design of interfaces that enable the interpretation of tangible and intangible cultural knowledge through embodied experiences that are self-directed by users. Carrying out this approach based on user-driven navigation and interaction with virtual heritage, a series of interfaces have been developed at ALiVE

combining visual analytics, information aesthetics and HCI strategies to enable semantic navigation of large multimedia databases.

T-Visionarium and *E-CLOUD* offer an immersive interactive experience of, respectively, TV data of over 24,000 video clips segmented from 28 hours of broadcast television and of cultural data from the crowd sourced World War 1 archives of Europeana – a multilingual online collection of millions of digitised items from European museums, libraries, archives and multi-media collections.

These interfaces expand possibilities for viewers of dynamically selecting, re-arranging and linking video clips, images and texts, composing them into combinations based on relations provided by the metadata. Viewers perform as composers, editors and interpreters interacting with a new spatial connectivity that renegotiates aesthetics, physical and semantic dimensions. Other landscape-based interfaces such as *Pure Land*, immerses visitors in the heritage of grotto paintings of the *Caves of the Thousand Buddhas* in Dunhaung, a small town in northwest China in the Gobi desert. Signature features of these works are stereoscopic projection, panoramic visual and auditory immersion and user-driven interaction with one to one scale virtual facsimiles of cultural objects.

Reflecting on the quality and significance of the user experience with these interfaces, the authors propose that interactive immersion is not only a means of improving access to world heritage sites – as in the case of the Buddha Caves for instance – while heritage policies have significantly restricted and regulated visitors' access to the caves to ensure long-term preservation, but it is also a way to improve inclusivity for audiences drawn from diverse cultural backgrounds, expertise and knowledge. Borrowing the concept of 'open work' from Umberto Eco's essay 'Opera Aperta'⁵⁵, the authors suggest that such projects are both context-specific and 'open', as they distribute agency to audiences, opening up the work to multiple cultural interpretations.

Challenging common museum practices of utilising interactives for single users, the authors persuasively argue for museums to adopt such systems in their exhibitions in order to renegotiate performative, educational and social qualities of the visitors' experience:

The findings support the strategy that multimodal interactive worlds that focus on kinaesthetic and multisensory amplification can play a significant role in the interpretation of heritage landscapes from a phenomenological perspective.⁵⁶

They also encourage the rethinking of exhibitions as performative and social activities, where learning about and encountering other cultures develops through place-based and social interactions.

- 1 Kenderdine, S., 2007. Somatic solidarity, Magical Realism and Animating Popular Gods: Place-Hampi “where intensities are felt”. In *11th International Conference on Information Visualisation (IV'07)*. Zurich: IEEE Computer Society. Available at: www.place-hampi.museum/contents/research1.html.
- 2 Kenderdine, S. et al., iCinema Centre for interactive cinema research. Available at: <http://icinema.unsw.edu.au/projects/place-hampi/project-overview/> [Accessed July 2013].
- 3 Kenderdine, S. & Schettino, P., 2011. Place-Hampi: Narratives of Inclusive Cultural Experience. *The International Journal of the Inclusive Museum*, 3(3), pp.141–156, p.146.
- 4 Kenderdine, S., 2008. An entanglement of people-things: Place-Hampi. *International Journal of Digital Culture and Electronic Tourism*, 1(2/3), pp.139–156., p.148 Available at: <http://www.inderscience.com/link.php?id=21404>.
- 5 McGinity, M. et al., 2007. AVIE: A Versatile Multi-User Stereo 360° Interactive VR Theatre. In *Emerging Display Technologies, San Diego CA*. ACM.
- 6 Kenderdine, S., 2008. *Op.Cit*, p.149.
- 7 Kenderdine, S. & Schettino, P., 2011, *Op.Cit*, p.142.
- 8 Professor Jeffrey Shaw, City University of Hong Kong. Available at: www.scm.cityu.edu.hk/people/faculty/others-position/professor-shaw-jeffrey/ [Accessed July 7 2013]
- 9 Kenderdine, S., Shaw, J. & Kocsis, A., 2009. Dramaturgies of PLACE : Evaluation , Embodiment and Performance in PLACE- Hampi. In *Proceedings of the International Conference on Advances in Computer Entertainment Technology*. New York: ACM, pp. 249–256, p.253.
- 10 Hui, Y., 2011. Interview with Jeffrey Shaw on new media art. Available at: <http://theoryculturesociety.blogspot.co.uk/2011/04/interview-with-jeffrey-shaw-on-new.html> [Accessed July 1, 2013].
- 11 Kenderdine, S., Shaw, J. & Kocsis, A., 2009, *Op.Cit*, p.251.
- 12 Kenderdine, S., Shaw, J. & Kocsis, A., 2009, *Ibid*, p.251.
- 13 Kenderdine, S., Shaw, J. & Kocsis, A., 2009, *Ibid*, p.252.
- 14 Kenderdine, S., Shaw, J. & Kocsis, A., 2009, *Ibid*, p.250.
- 15 Hui, Y., 2011 *Op.cit*.
- 16 Hui, Y., 2011 *Ibid*.
- 17 Kenderdine, S., Shaw, J. & Kocsis, A., 2009, *Op.Cit*, p.253.
- 18 Kenderdine, S., Shaw, J. & Kocsis, A., 2009, *Op.Cit*, p.253.
- 19 Kenderdine, S., 2008. *Op.Cit*, p.142.
- 20 Kenderdine, S., 2010. Immersive visualization architectures and situated embodiments of culture and heritage. In *14th International Conference Information Visualisation*, London July 26-29. Washington: IEEE, pp. 408-414. p.410.
- 21 Kenderdine, S., 2008. *Op.Cit*, p.152.
- 22 Witmore, C.L., 2004. Four archaeological engagements with place: mediating bodily experience through peripatetic video. *Four archaeological engagements with place: mediating bodily experience through peripatetic video*, (2(2)), pp.57–72, p.51.
- 23 Kenderdine, S., Shaw, J. & Kocsis, A., 2009, *Op.Cit*, p.254.
- 24 McAuley, G., 2003 (1st Ed. 1999). *Space in Performance: Making Meaning in the Theatre*, Ann Harbor: The University of Michigan Press, Audience and Presence, Stanford University DOI= <http://presence.stanford.edu:3455/Collaboratory/643>.
- 25 Dalsgaard, P. & Koefoed-Hansen, L., 2008. Performing perception—staging aesthetics of interaction. *ACM Transactions on Computer-Human Interaction*, 15(3) Article No. 13, p.6.
- 26 Kenderdine, S., Shaw, J. & Kocsis, A., 2009, *Op.Cit*, p.254.
- 27 Kenderdine, S., Shaw, J. & Kocsis, A., 2009, *Ibid*, p.254.
- 28 Kenderdine, S., Shaw, J. & Kocsis, A., 2009, *Ibid*, p.254.
- 29 Kenderdine, S., 2007, *Op.cit*.
- 30 Kenderdine, S., 2008, *Op.cit*.p.144.
- 31 Kenderdine, S., 2008, *Ibid*. p.151.
- 32 Kenderdine, S., 2008, *Ibid*. p.151.
- 33 Kenderdine, S., 2008, *Ibid*. p.151.
- 34 Kenderdine, S., 2008, *Ibid*. p.150.
- 35 Kenderdine, S., 2008, *Ibid*. p.152.
- 36 Kenderdine, S. & Schettino, P., 2011, p.143
- 37 Pinney, C. & Wagner, R., 2004. *Photos of the Gods: The Printed Image and Political Struggle in India*, London: Reaktion Books, p.8. quoted in Kenderdine, S., 2008, *Op.cit*. p.144.
- 38 Pinney, C. & Wagner, R., 2004. *Ibid*, p.23, 18.
- 39 Kenderdine, S., 2008, *Op.cit*. p.144.
- 40 Kenderdine, S., 2008, *Op.cit*. p.146.
- 41 Kenderdine, S., 2008, *Op.cit*. p.147.
- 42 Kenderdine, S. & Schettino, P., 2011, *Op.cit.*, p.146-147.
- 43 Kenderdine, S. & Schettino, P., 2011, *Op.cit.*, p. 147.
- 44 Kenderdine, S. & Schettino, P., 2011, *Op.cit.*, p. 148.
- 45 Kenderdine, S. & Schettino, P., 2011, *Op.cit.*, p. 152.
- 46 Kenderdine, S. & Schettino, P., 2011, *Op.cit.*, p. 151.
- 47 Kenderdine, S. & Schettino, P., 2011, *Op.cit.*, p. 151.
- 48 Kenderdine, S. & Schettino, P., 2011, *Op.cit.*, p. 150.
- 49 Appadurai, A., 1996. *Modernity at Large: Cultural Dimension of Globalisation*, Minneapolis, MM: University of Minnesota Press, p.178-179. Quoted in Kenderdine, S. & Schettino, P., 2011, *Op.cit.*, p. 145.
- 50 Kenderdine, S., 2010, *Op.cit.*, p.413.
- 51 Bhabha, H.K., 1994. *The location of culture*, London: Routledge. Quoted in Kenderdine, S., 2010, *Op.cit*. p.413.
- 52 Barker, T., 2009. Toward a Process Philosophy for Digital Aesthetics. In *Proceedings of the International Symposium on Electronic Arts 09 (ISEA09)*. Belfast. Available at www.icinema.unsw.edu.au/assets/165/barker49.pdf.
- 53 Barker, T., 2009, *Ibid*.
- 54 Hui, Y., 2011 *Op.cit*.
- 55 Eco, U., 1962. *Opera Aperta* Bombiani., Milano.
- 56 Kenderdine, S., Shaw, J. & Kocsis, A., 2009, *Op.Cit*, p.254.



A Sensory Experience of Australia's Migration Heritage

Belongings: Post WW2 Migration Memories and Journeys, Graphic by the author, images courtesy of NSW Migration Heritage Centre.

8 BELONGINGS

This first practice developed by me as a curatorial designer was in collaboration with Bert Bongers and the curators at the *NSW Migration Heritage Centre*, utilised *Belongings: Post-WW2 Migration Memories and Journeys*, a community oral history project and online exhibition as a case study in order to explore interactions with cultural artifacts and their associated memories relating to migration heritage.

8.1 Introduction

An original concept conceived by John Petersen, manager of the Centre and curated by Andrea Fernandes, *Belongings* was developed by the Migration Heritage Centre through partnerships projects between 2005 and 2009. The project brings to life more than one hundred and fifty oral histories from former migrants who arrived in Australia after the Second World War. Personal stories are told through people's memorabilia and special belongings that accompanied migrants on their life-changing journey to Australia.

According to the project coordinators, "these belongings are mementos that tell stories about us and our families and friends. (...) Too often history is lost. *Belongings* helps to save some of this history"¹. Recorded in people's homes, which Fernandes refers to as "the nation's museums"², memories are disclosed through recollections that are deeply affective and poignant, as they tell of traumatic experiences of the war, family separation, cultural clashes, prejudices and the difficulties of settling in a foreign country. Yet some are also light-hearted and convey a sense of hope, as they portray peoples' capacity to adapt, change and start over again.

8.1.1 Motivation

I first came across the stories of *Belongings* as a viewer of the Centre's online exhibition. Reading about people's life memories and browsing through their cherished possessions was an intensely emotional and touching experience, and something to which I could relate.

I began thinking how these memories and objects could live outside the web page and become more tangible, how the voices of people telling about their life journey could be heard, conveying their frailness, hesitations, tones and different accents, how the objects could be held and their shapes and textures touched and felt. According to the project's curator, the importance of *Belongings* lies "in the powerful connection between oral history and objects. Physical objects trigger hidden memories with great depth. The oral history becomes richer"³. This relationship between the oral mode of communication – the first person memories of the migrants telling about their experiences – and the encounter with the materiality of their keepsakes, has become a foundation of the design. Utilising the *Museum of Resistance* as a reference point in the approach to interpretation and mediation of oral histories, *Belongings* provided an experimental ground wherein to explore engagement with the migrants' experience in ways that attempted to be both intimate and sensorial.

In the following paragraphs I discuss how this initial motivation developed into the making of a haptic interface for *Belongings*, which adapted the *Interactivated Reading Table*, a prototype tangible interface developed by Bert Bongers at UTS Interactivated Studio. The interface integrates RFID technology into physical objects to create a mixed media experience for users enabling access to multimedia content through haptic interaction with physical objects. We look at the potential of adapting the *Reading Table* to mediate interactions between personal belongings and the stories of *Belongings*. With this in mind we conceived of the user experience as a form of dialogue, in which users interacted with augmented objects, knowing them through touch.

Before moving further into the details of the practice, it is important to frame this case study within the discourse on migration heritage and materiality, to which many scholars and practitioners are contributing, not only theoretically, but principally through exhibition practices, posing questions on the exhibition of cultural records pertaining to the material and intangible heritage of migration.

In the next session I will briefly introduce current reflections underpinning the relationship between migration and materiality through relevant theoretical insights and significant exhibitions in Australia that have engaged with concepts of object-led knowledge and sense memory, which form the base of material cultural studies and provide perspectives on the interpretation and representation of migration heritage. I will then present current research on touch in museums and possibilities for handling objects, which will lead to an exploration of the implications of using affective touch and its interrelation with sound as a driver for designing interactions with augmented objects in *Belongings*.

8.2 Migration and Materiality: Sense Knowledge

Andrea Witcomb, a scholar in museology and heritage studies, notices how an increasing number of scholars in material culture, cultural and cognitive studies are now recognising the power of objects to act on an “embodied, visceral level” in order to trigger responses within us. As Witcomb argues these responses do not involve “a conscious level of articulated knowledge”⁴. Academics from a number of different fields, such as art, film and material culture studies “are theorising the existence of embodied forms of knowledge which cannot be articulated through language but which reside instead in sensorial experience”⁵. Approaches to sense knowing are informed by Deleuzian reflections, as well as Merleau Ponty’s phenomenological investigations of sense studies.

Witcomb explains that, rather than insisting on the divide between mind-body or subject-object, these studies focus on the space-in-between,

... the engagement between people and the material world which surrounds them and of which they too are part. (...)In this space, the senses rather than the word are privileged”. Through material and sensorial engagement, objects can act upon subjects and vice versa, and people “can change and act upon matters.”⁶

The two exhibitions outlined in the following paragraph explore those practices of exhibiting which enable a sensory-based experience with material records pertaining to Australia migration heritage and the strategies adopted in order to shift agency to objects. In discussing this approach to engagement with the cultural heritage of migration and the interrelationship between memory, the senses and experience, I am interested in exploring directions and possibilities for exhibition and participation that this approach can bring forth.

8.2.1 Object biographies and migration memories: two exhibitions

Australian Journeys is a permanent exhibition installed at the *National Museum of Australia* and which opened in 2009. Curated by Kirsten Wehner and Martha Sear, the exhibition explores place-making in Australia by tracking the movement of people to and from the country and the connections that migrants, tourists and travelers have developed and maintained with places in Australia and overseas through time. The curatorial approach sought a further understanding of –

... how objects participate in, shape and express transnational historic experience. In a sense how objects are connecting people, across time and space, to their historical selves, as well as to origin and destination communities.⁷

From this idea, a unique method – which the authors refer to as ‘object biographies’ – was applied in order to ‘interrogate’ the objects’ historical agency and communicate it through the

museum environment. The concept of object-led knowledge is a thread running throughout the exhibition, and embodied by the objects' biographies. These interpret and mediate the movements of migrations and the affective connections that migratory circulations open up between people and places. As the curators argue:

Object knowledge constitutes the mechanism through which objects exert agency. As people engage with objects, they understand through them the material conditions of existence, and as they act on that knowledge, objects have effect in reproducing and reshaping the world.⁸

This approach to curating object's biographies offers an alternative to common approaches creating singular historical contexts to objects. This enables, according to the curators, 'imaginative possibilities' for visitors to simultaneously attempt to empathise with people, and their experience of migration, and at the same time to "recognise the subjectivity of their own responses in the present".⁹

Migration Memories is a practice-led research project exploring the practical dimensions of museum practices and exhibition-making of Australian migration history from local and personal perspectives. Connecting with, and informed by, scholarly work on museum practice, the project aims to explore how theory works in the field by developing two experimental exhibitions, each set in a small regional Australian locality: Lightning Ridge, an opal mining town in central north NSW, and Robinvale, a horticultural town on the Murray River in North Western Victoria. The exhibitions, portraying the places' distinct migration histories, were then displayed together at the National Museum of Australia. The main investigators of the project, Professor Howard Morphy and Dr. Mary Hutchison from the School of Humanities at Australian National University, discuss their approach to the representation of memories of migration within the frame of a wider migration history, whose main concern was to mediate personal perspectives and experiences of migration across different times, places and cultural backgrounds and to connect them with the artefacts that were selected by participants to express that experience.

Of principle interest to this case study is the integrated approach to interpretation, development and exhibition design adopted by *Migration Memories* and its practical interest in developing imaginative and formal strategies of representation integrating visual and aural design. As the investigators continue:

[T]he methods used in making the exhibitions were based on the position that content, process and form are closely interrelated and that intentions for an exhibition must be followed through each. To achieve the intention of representing migration as a heterogeneous experience taking shape in the context of time, place and prevailing discourses, the

research took the position that formal strategies of exhibition design are as vital to fulfilling exhibition intentions as content and development process.¹⁰

The participation of the audience in the narrative space of the exhibition was adopted by the curators/researchers as a strategy to fulfill the exhibition's intention which was to enable the interaction between the different groups and communities who contributed across time to shape Australia's migration history:

Another important aspect of design was to invite an audience to step into the exhibition on their own terms (...) Such approachability was important in achieving connection between audience and material. Similarly, devices that invited audiences to feel as well as think about a situation were used. For instance the particular quirks of an individual's turn of phrase were retained in text, and items created by the storyteller, such as a sketch of a childhood place drawn from memory, were included. Working collaboratively with designers from an early stage in the exhibition making process was a critical part of exploring these strategies.¹¹

8.3 Making sense of touch

Common to both the exhibitions is the intention of creating empathic contact between objects and personal memories and experiences of migration in ways that are not representative, but rather performative and embodied. This returns us to the research questions and argument of the thesis, reframed here in the context of Australia's heritage of migration. If the body is a resonating vessel through which aesthetic and sensory knowing is attained, how can interface design and curatorial practices seize the opportunity opened up by tangible interfaces and networking environments to renegotiate interaction between museum visitors, cultural objects and the memories these objects hold? How can we renegotiate the distance and facilitate encounters and intimacy with, not only the objects, but also the memories and experiences they carry through interactions with tangible interfaces that stimulate our tactile perception?

The case study explores the opportunities and implications of utilising touch as a way of knowing and mediating difference, using our skin as a conductive vessel and objects as an interface to activate a skin-based response in participants. In creating an experimental ground wherein to explore object-led and tactile interactions, I'm interested in understanding the quality of the experience, whether mainly physical and sensorial, or affective, involving emotions, addressing culture and identity.

In the *Eyes of the Skin*, Juhani Pallasmaa argues about the primacy of the haptic realm among the other senses, by drawing on the work of the anthropologist Ashley Montagu:

All the senses, including vision, are extensions of the tactile sense; the senses are specialisation of skin tissue, and all sensory experiences are modes of touching and thus

related to tactility. Ashley Montagu's view, based on medical evidence, confirms the primacy of the tactile realm: [The skin] is the oldest and most sensitive of our organs, our first medium of communication, and our most efficient protector (...) Even the transparent cornea of the eye is overlain by a layer of modified skin.¹²

Jay Prosser defines skin as a vehicle of consciousness and argues for the skin's proprioceptive capacity to retrieve memory:

We become aware of skin as a visible surface through memory. If someone touching our skin brings us immediately into the present, the look of our skin – both to others and to ourselves – brings to its surface a remembered past. It is a phenomenological function of skin to record. Skin re-members, both literally in its material surface, not only race sex and age, but the quite detailed specificities of life histories. (...) Skin is the body's memory of our lives. But if skin constitutes a visual biographical record, by no means is this record historically accurate. Indeed the fact that we continue to invest the legibility of identity in the skin in spite of knowing its unreliability, suggests skin to be a fantasmatic surface, a canvas for what we wish were true – or for what we cannot acknowledge to be true. Skin's memory is burdened with the unconscious.¹³

Haptic comes from the Greek 'haptikos', be able to touch or grasp. The haptic is the preferred modality that we apply when actively gather information about objects outside of the body. The various interrelated channels through which the sense of touch gathers its information are called 'tactual perception'. In his doctoral thesis on '*Interactivation*', Bert Bongers discusses the systematic exploration of our sense of touch dating back to the 19th century and the experiments of Hermann von Helmholtz and later E. H. Weber, and down to the study of Katz in the early 20th century and J.J. Gibson in the 1960s. As Bongers explains, haptic perception involves both tactile and kinesthetic senses that are understood respectively as passive and active touch. Tactile perception works through the cutaneous sense to receive information from different mechanoreceptors in the skin, kinaesthetic sense, is a body sense sourcing its inputs from proprioceptors which are mechanoreceptors found in muscles, tendons and joints which give us awareness of movement.¹⁴ The mechanics of these two experiences, that of a stimulus being imposed or obtained, are quite different. They involve the different excitation of mechanoreceptors. While passive touch stimulates the skin and underlying tissues, "active touch involves the play of input coming from the whole skeleto-muscular system"¹⁵. Given the way tactual interaction works, when touching an object we are at the same time touched by it.

Francis McGlone explains further the distinction between modalities of active and passive touch. Active touch is "touch perceived as a consequence of movement"¹⁶. Passive touch is normally experienced when another person or object is touching you::

With object handling, for example, the touched, rather than the touching body part, may communicate more about the emotional attributes of the object rather than its purely physical attributes. [Operating as an interoceptive sensory modality, touch provides] information of the brain about the state of the body surface and that of the close encounters with the world around.¹⁷

In the book *The Senses of Touch*, Mark Paterson develops an historical overview of the phenomenology of touch, connecting Aristotle's aesthesis to Husserl's speculations on the 'aesthetic body' and Merleau-Ponty's investigations on touch. The study proposes a philosophical approach aimed at advancing what the author refers to as a 'haptic aesthetics', which is "concerned less with touching than with being touch"¹⁸. Starting from Walter Benjamin's observations on the 'tactile properties' of art, the author discusses the affective impact achievable through aesthetic experience, then discusses the relationships between touch and technology, touch play and performance.

Tracing back to Aristotle's works '*De Anima*' and '*De Sensu*', the first philosophical treatment of the human senses in Western philosophy, the author acknowledges the priority of touch over the other sensory modalities, as argued by the Greek philosopher –

... there is no obvious single organ to which [touch] corresponds, unlike sight (the eye) or hearing (the ear), touch is distinct since flesh is the medium, rather than the organ, of touch. Indeed if the sense of touch corresponds to any particular organ it would be the heart, as [Aristotle] claims in *De Sensu*; the sense-faculty of touch is within. (...) Crucially, in perceiving through our other senses we are conscious that the medium (light, sound) has an effect on us. Yet in the case of touch, our contact with things is erroneously perceived as unmediated. (...) With tactility we are not affected or altered by the sense-object itself, nor simply through the medium (flesh), but actually *in synchronicity with* the medium.¹⁹

8.3.1 Touching objects in museums

The history of object handling in museums has been demonstrated to be fundamental in contributing to shaping both visitors' subjective experiences with the collection as well as enabling expert knowledge and connoisseurship. Helen Chatterjee suggests that the model of connoisseurship involving "a tactile engagement with the materiality, weight, texture for and manufacture of the object"²⁰ is the only existing sustained model of object handling. However this can offer a starting point from which to rethink incorporating tactile experience in museums, and new possibilities have to be explored for object handling that enable more inclusive approaches and accessibility.

When touching or handling objects in a cultural heritage context it is important to understand that touch can serve different functions including discriminative – conveying information on the temperature, texture, softness or hardness – emotional or affective, to conveying sensation on the pleasant or unpleasantness of the experience of touching, as well as haptic – related to

the geometry of the objects and their shape. For curators, understanding the sensations and emotions associated with touching objects is paramount in selecting objects for touching and handling.

Studies on the emotional aspects of touch explore mood and feelings associated with touching objects as “embodied perceptions”²¹. Studies related to haptic exploration of physical objects in museums by the visually impaired have contributed to the understanding of touch beyond its discriminative functionality, as an embodied sense, which, as such, is a source of what Jospovici and Turner, quoted by McGlone, describe as “proximal knowledge”²². This kind of knowledge is often difficult to explain verbally as it depends “upon implicit and non-representational forms of understanding”²³. Kevin Hetherington describes it as a “performative approach to issues of understanding the meaning of objects blurring the boundaries between the body and the object being handled”²⁴. However, as Hetherington points out, this proximal knowledge in the museum context has always been a privilege of curators or experts and pose challenges to discover ways for curators to enhance visitors’ tactile experiences with artefacts in museums, which are still to be discovered and implemented.

This case study draws on current investigations and recent studies on object handling in museums, exploring its potential for challenging vision-oriented exhibiting practices. Investigating object handling and the relationships between touch, knowledge and learning in museums, Donald Preziosi draws on Foucault’s argumentations on collections and archives as the places where modern ocular-centric systems of knowledge were generated. Museums, according to Preziosi, can be looked at as optical instruments which have developed an exclusive association between vision, knowledge and modern subjectivity²⁵.

In the past there have been alternative paradigms challenging the vision-centred notions of museums, as discussed by Constance Classen and David Howes in a study on museums visitors’ experiences with handling objects on display in the eighteenth century. The authors noted that touch at that point in time was considered instrumental to provide a legitimate way of learning, contributing to museums’ visitors’ knowledge, imaginative experience and subjectivity. However, by mid-nineteenth century, tactile experiences in museums were no longer available to the general public. They were exclusive practices reserved for elite visitors only. This removal caused visual experiences to be prioritised over tactility, with the former rapidly becoming pivotal in structuring and mediating knowledge. This followed as a consequence of the democratisation of museum access, as the authors explain:

Once museums visitors came from across ‘all classes’, a corresponding shift occurred in the level of contact they were permitted to have with the collections. One of the costs of improved public access to museums was the loss of touch as a valid means of engaging with the collections.²⁶

Charles Spence and Alberto Gallace discuss the key findings that have emerged from the scientific studies on touch and its implications in enhancing both visually impaired, as well as sighted, visitors' experiences in museums²⁷. The researchers note a discrepancy between tactile perception and the physical appearance of an object, the difference between what an object *feels* like and what it actually *looks* like have been reported on in different contexts from scientific research with visually impaired subjects to archaeological studies on material culture and artistic practices.

The artist Miho Suganami plays on this incongruence between the senses of vision and touch in her artworks. Embedding a number of hidden light bulbs inside a stone, the artist challenges common expectations associated with the temperature of the material by making an object feel warm when it would normally be expected to feel cold.

Mark Ernst and Martin Banks quantify the relative contributions of each sense in the multisensory impression that people have of an object. They have noted that, under conditions where the visual input has been degraded or impaired, a person's perceptual experience will depend more upon touching. The authors address the lack of a lexicon of touch as a hindrance to advance research in the area. They point out the paucity of terms to describe common sensations related to tactile experience with objects as compared to visual or auditory ones.²⁸

8.3.2 Haptic interfaces

Current research in HCI is deploying digital technologies to improve the quality of haptic interaction with objects in museums. Research focuses on both conservation as well as access goals in order to enable visitors' multisensory experiences without risking precious and fragile objects. Inspired by the experience of eighteenth-century curiosity cabinets which allowed objects to be handled, smelled and even tasted as well as seen, current research is concerned with creating digital models of various aspects of the object, such as smell, sound, sight, taste and feel, thus allowing visitors' to experience digital simulacra of the objects on display. This is developed through a wide range of haptic interfaces and display.

Haptic interfaces

Haptic interfaces are not as common as visual ones. We are only used to touch things that are immediately near us. Haptic interfaces can challenge notions of distance and intimacy. They model the human haptic system, yet are not yet able to simultaneously reproduce the object's shape, texture and density.

Replicas

They are expensive and therefore not used very often. Museums are more inclined to make replicas that are clearly separable from the original.

Raised pictured

Raised pictures encoding digital information about the object provide a sense of the shape of the picture, boundaries, encoding information on colour, lighting etc.

Haptic display

Affords users the sensation of touching a distant or imaginary object with a pen-like tool or stylus.

8.4 The making of a haptic interface for *Belongings*

In describing the experience of reading Jack Lindsay's diary and William Morris's notebook, Anne Cranny Francis reflects on those tactile perceptions associated with handling archival objects:

The action of touch – my touching of the diary – generates an understanding of the man and his work that could not be acquired by reading alone. When the interoceptive touch that is reflexively engaged when I touch the object – the sense of balance and of positioning in space that enables me to hold the diary in such a way that I don't damage it and so that I can fully experience it, holding it so that I can read it, see the layering of papers etc – that bodily response is co-articulated with my emotional response (in this case my memories of Jack and interest in his life) to create a complex engagement with the object – which opens up its meaning potential, challenging me to experience the object in all of its nuance and complexity and to read it semiotically and sensorially, not just literally.²⁹

“Don't touch': how many time children hear this command? No one would say: 'don't look, don't listen', yet it seems that touch is different. Many think one can do without”³⁰. In contrast to this common misconception Bruno Munari, an artist and educator, experimented extensively in his tactile laboratories with the importance of touch as a way for children to make sense of the world. Drawing from Marinetti's earlier investigations on tactilism³¹, which highlighted the importance of developing an aesthetic tactile education through different textural stimulations and tactile tables, Munari sought out creative ways to engage toddlers and children to use touch as a conductor of meaning and vehicle of knowledge:

Knowing the world is, for a child, a multisensory experience. Among all senses, touch is the most utilized for this purpose, as touch complements auditory and visual sensations with other information concerning the world that surrounds us.³²

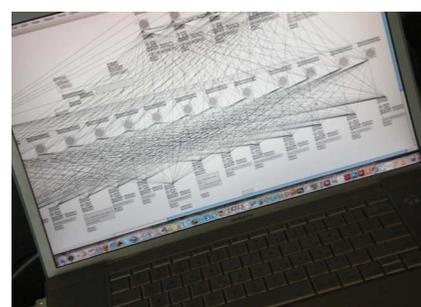
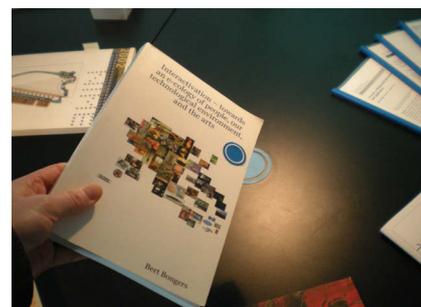
As previously introduced, Paterson's study examines touch as a primary embodied experience in its relation with affect. Discussing the importance of touch in producing meaningful experiences of the world, touch is investigated for its potential to enable us knowing and connecting to the things by which we are surrounded more intensely when compared with

other senses. The chapter “*How the world touches us*” is very relevant to this research as it interrelates with studies ranging from Merleau Ponty’s phenomenology, to Husserl, Benjamin, Riegl and Deleuze’s reflections on touch and tactility and exploring the emphatic quality of touch and its role in developing aesthetic experiences. Touch and being touched are here investigated for the affective qualities that tactile encounters with a work of art can open up, thus interrelating the haptic and the optic.

Drawing on these reflections, this study takes a similar perspective on the exploration of the affective qualities of touch. However, here the focus is shifted to the interrelation between the haptic and the aural, hence touch and sound are investigated in their inter-exchange for their potential to convey affective and empathic experiences.

Experimenting with the *Interactivated Reading Table* provided an opportunity to explore possibilities for designing touch-based interactions with objects that are augmented with media content, in such a way that by touching an object one can learn not only about its physical properties, but also about its history. In the paragraph that follows I describe in more detail the stages and technicalities of the design process.

The *Interactivated Reading Table* is a tangible interface developed by Bert Bongers in 2007 at the UTS Interactivation Lab. In the last few years it has been applied to a wide range of museum exhibits and public displays and constantly updated through feedback from audiences. The *Reading Table* provides a mixed media experience for users by merging traditional media, such as books and other printed material, with new media, such as audio, video and web sites. Integrating RFID (Radio Frequency Identification) technology into physical objects, the table enables access to multimedia content as well as its further manipulation. The resulting interaction between physical objects and new media content combines the tangibility of printed media with the flexibility of digital media in such a way that it appears as a seamless reading experience for



The Interactivated Reading Table, a series of photographs by Alejandra Mery, Interactivation Studio, UTS.

the user: a smooth transition between different media affording continuity of reading without disruption.

Conceived with the intention to enhance, rather than replace the strengths of traditional printed materials, the *Reading Table* extends the tactile experience of old media with the visual and auditory immersive components of digital media. Any object can be tagged and ‘read’ by the table. Each tag is identified by a unique number, which performs as a passive transponder when placed in close proximity with the RFID reader. Multiple readers are mounted under the table, in such a way as to de-emphasize the display to the user. The typical reading range of a tag varies between 4 and 8 cm, with a reading speed that can be set in the software (Max/MSP-Jitter). A typical interaction with the *Reading Table* develops as the user picks up an item on the table and places it within proximity of the reader.³³ This action enables a fluid moving back and forth between the physicality of the objects and the immateriality of their attached multimedia content. For its malleability, the interface enables artists and designers to manipulate and appropriate the technology for a variety of applications ranging from public presentations, to the demonstration of artistic research, to museum exhibits. Further developments of the interface include experimenting with gesture and detecting the direction of the movement of the object and its speed. The integration of motion sensors will extend the level of interaction by linking the orientation and movement of the object in finer detail to the capabilities to display media content.

8.4.1 Design strategies: Exploring connections between sound and touch

For its affordance of seamless transition between media and the possibility to integrate different modalities of communication such as visual, aural and gestural, the *Reading Table* offered an opportunity to conceive of adapting an interface for *Belongings* that could be object-led and engage physical touch in mediating an experience with real objects.

Those investigations which have steered the conceptual stage of this study explored the relationship between sound and touch as a vehicle of affective response and contributed to framing the associated practices within a broader discourse on sensory engagement and embodiment. The expression ‘being touched’ suggests both a physical sensation and an emotional response. According to Cranny-Francis, interrelations between sound and touch have a potential for triggering an embodied response and stimulate sensorial engagement in the creation of meaning. As Cranny-Francis observes, it is fundamental for designers to understand “the power of sensory engagement in the negotiation and production of embodied being”³⁴. The nature of this engagement is, according to Cranny-Francis, simultaneously individual, cultural, social and political. In particular the relationship between sound and touch is an intimate and visceral one. Unlike visual perception, which operates by distancing the subject from the object of perception, Cranny-Francis explains that –

... sound literally touches us. (...) the phenomenon we hear as sound is produced by the intimate touching of tiny bones in the ear in response to reverberations of the eardrum. In a sense we act as both receivers and instruments to create the sound we hear; are engaged in its production.³⁵

Yves Bonenfant adds to the understanding of this engagement the notion of the 'membrane', which correlates the way sound and touch are transmitted and interact physically with the human body:

Membranes are essential to both sound and touch: they are that which permits perception of contact. (...) Sound wave transmission is similar to manual touch in that are both gestures carrying physical energy through space to interact with.³⁶

Distanced from the interaction often afforded by didactic experiences with museum displays – which often results in pushing buttons or touching screens, as remarked on by Drago in the introduction to the research practices – I imagined interacting with *Belongings* as a participatory experience, engaging multiple senses simultaneously. I imagined voices from the past touching our skin, “the tapestry upon which all senses communicate”³⁷, as intimate experience, a touching resonance between vocalised memories and objects developed in the interplay of touching and being touched.

I imagined the hands engaged in the exploratory experience of knowing people’s belongings, while at the same time the ears and the skin were stimulated by the vibrations of people’s stories. I imagined this experience as suspended in a present time, where memories and objects met and reinforced one another.

8.4.2 Relating objects and stories

The online exhibition of *Belongings* included a series of images of the objects as well portraits of the participants in the oral history projects in their home and/or handling and using the objects that they chose to present. It also provided excerpts of the transcriptions from the original interviews conducted by Andrea Fernandes, highlighting the main passages of people’s recountings together with biographical details of each participant. The online exhibition, however, did not include an audio piece, therefore the voices of the participants remained unknown to me until I started listening to the audio files stored in the digital archive at the Migration Centre.

In selecting the stories to use in the adaptation of *Belongings* I was drawn to such aspects as the particular quality and rendition of the audio recordings. These had been made in the participants’ homes and were often affected by background noise or poor rendition. Also the timbre and pitch of people’s voices has been an important element in the selection process, some

were too feeble and therefore difficult to understand. I let myself be open and transported by this encounter with people's life stories, and based on this to make an initial selection among those recordings which resonated within myself, particularly those who were more engaging and playful in their delivery, more empathic in their account, capable of communicating a more vivid experience of the places and the people they told about.

A determining factor of the selection was also the possibility to edit the interviews in such a way as to make a micro story, which was autonomous and understandable when out of context. The story had to mention the object and be self-explicatory with no additional context. The duration of the audio clips was also considered in order to keep the length below two minutes. After the selection was made, an extensive process of editing was carried out, based on the selection of thirteen different objects from six participants.

Given the unavailability of the original objects, as they were not part of the Centre's archive but had only been lent by the participants to be photographed for the exhibition, the criteria for selecting the objects were based on the possibility to source or construct a suitable replica. Size was a significant factor influencing that choice. In order to create a visual commentary and background to the objects and stories I also selected other images related to the person's life, and aimed at sequencing and timing them with the audio clips. The image resolution was often very poor and the selection available was very limited. Listed below are three examples of connections between objects, stories and images creating the narrative context of the case study. Each object was then tagged with a unique RFID number and linked to its related media content. Implementation of media was developed by Max/MSP Jitter software, adapting an existing patch of Bert Bongers.

Chafic Ataya (object: binoculars)

The binoculars are very special. From grandfather to father, my uncle took possession because we were very little. Then before I left [Lebanon] I asked him for it and he gave them to me. What we used to do, while we were sitting at home we use them to look towards the vineyards if anyone trespassing or stealing grapes or figs, about 3km distance. They meant a lot to me. By bringing them over with me, I could explore the New World with them!³⁸

Ana Fox (object: wedding photo)

Well when Michael and I kind of started, I used to run functions back home, I was in all the religious organisations. (...) We used to run socials and dances with that and I was in other things, Legion of Mary and things like that and I was running this big function and invited him to it and it seems he had this notion of me for months and he's said to my uncle who told my mother, that the only one, like he said you're trying to match me up with everybody

but the only one I'm interested in is Katie's eldest daughter. Katie being my mother but of course she wouldn't look at me because she's far too young for me. In that type of way so he came to the social and he was just a gentleman I must admit. Back in the country there is a little bit rough and ignorant I suppose. Very nice people but just haven't got the cultures and the different. And he opened the car, he probably took me back, you know what I mean. Opened the car and then he asked me to go down to Shannon to meet his uncle who was coming from Shannon airport to visit them the next day and all that. So it just started from there really and truly, and we only knew each other for about three months and we got engaged and my mother was heartbroken, she never forgive me, because too, she said it was bad enough to get married to practically a stranger without going out to Australia, I might as well be dead she said. That's the words she said, I might as well be dead.³⁹



Chafic Ataya: Binoculars, Self portrait



Ana Fox: Wedding photo, Self portrait with hat

Jacqueline Giuntini (object: knife)

We've got this family knife, and it's quite an ugly knife and the story was always that dad took it off a German. I don't know whether the German was alive or dead at this time and it was a bayonet and he had it cut down and it became our family carving knife, which we still have. It looks incredibly dangerous, but it was very good for a number of years. It was used for everything. It's now very, very worn down because he used to sharpen it on the brick stairs out the back, so it's quite thin and quite worn down. Many times I've thought I should throw it away and then I think, oh no, dad was really proud of this particular knife, so that's why we've kept that.⁴⁰

Helen Sowada (object: koala bear)

This was a gift from Val. He gave me this because

he had to go back to the Snowy and I was so upset. My poor old koala bear that's lost all its hair. It sits on the dressing table and he's got all worn out with age, moth eaten. He's 50 years old, you know. He gave me that in '57.⁴¹

In the simultaneous interplay of the physical touching of the real objects – in this case the replicas resembling the original objects of the participants – and hearing people's stories, objects played a central role in leading the narrative. They triggered a first encounter with people's life histories, enabling immersion and participation in the experience of migration. Touching the objects was the only way of learning how people used them, the places they travelled to, and the reasons that brought them to carry the objects from their home country to Australia. Interacting with a hat triggered travel memories from Ireland to Australia and the experiences of family separation as well as a new beginning in a foreign country. A hat in this context becomes more than a hat. This interaction with objects renegotiates the perception of an object's affordance: handling the hat triggers a story about travels from Ireland to Australia, and the memories related to this experience. The aim behind this way of conceiving the interaction between objects and stories was to produce a sense of wonder. I imagined users relying more on their hands than their vision in order to sort the objects from the table, the movements of their fingers scanning the objects' textures, edges, shape, plasticity and softness by squeezing, rubbing and pinching. I expect them to be surprised when recognising a familiar voice when finding objects that belonged to the same owner. For children this could become a real treasure hunt.

8.5 Lost and Found: A first experiment

The NSW History Week *Faces in the Street* in 2010 provided a context in which to test the adaptation of *Belongings* in a physical space. A *Lost & Found Bureau* was set up in the Interactivation lab at UTS, which formed a specific event during the History Week, and was a pioneering experiment that used physical touch to access community history and



Jacqueline Giuntini: Family knife, Self Portrait



Helen Sowada: Koala bear, Self portrait with koala

to experience the migrants' personal life stories. The event was conceived as a first experiment in which to test the user experience with the tangible interface adapted from the *Reading Table* and which facilitated the exploration of a target audience's initial responses.

The table was utilised to display the objects as well it performed as an interface to experience the objects' stories. Replicas held over a sensor integrated within the table activated the associated multimedia content, thus eliciting an audiovisual audio narrative. The target audience of the event was the participants in the oral history project, the project's curators and other curators at the Powerhouse Museum, where the Migration Centre is based, and UTS students. However the exhibition display and set up were kept to a minimum, and the idea was to convey the atmosphere of a lost property office, where objects are displayed on a table and identified by customised lost property tags.

The main objective of the experiment was to gather inspirations and responses from the experiences of people who were already familiar with the content of *Belongings* and thus could provide insightful comments and feedback on how interaction worked and narrative was constructed. For some participants the experience of seeing themselves portrayed and their story staged in a public setting, as well as touching objects that resembled their own, was deeply emotional. Most participants, regardless of their advanced age, engaged very playfully with the objects, they were curious to hear which piece of the story was activated. They reported a mix of feelings – nostalgia, joy, sorrow – when listening to the recollections as told by their their own voices, perhaps noticing details they had forgotten or changes in their voices after many years had passed. The reading of their facial expressions provides an insight into the emotional state of the participants as they were interacting with the objects and stories of *Belongings*.

The curators Andrea Fernandez and John Petersen, who had encouraged this adaptation of their original concept and supported the project from its early planning, were



Lost & Found, Audience Experience at NSW Historic Week, September 2010, photographs of the author.

enthusiastic about the possibility of physically interacting with real objects, thus activating the stories. This experience opened up to them the potential of using physical interfaces to access multimedia content in ways that were spontaneous and engaging. I remember Andrea pointing at the knife on the table enthused: “Can you imagine touching a knife in a museum!!!” Other curators of the Powerhouse museum were interested in understanding how the same interaction could be applied to different content and how the interface could be integrated into a museum display.

In order to gather additional inspirational responses from the participants about their experience, I used a set of customized postcards portraying the objects on display. At the end of their experience I asked the participants to write their comments on the individual postcards. The idea of a postcard encouraged visitors to share their thoughts about their experience – as a postcard is normally associated with a souvenir, something memorable – we recall a trip or an experience that we would like to share with others.

I offer here quotes retrieved from the comments left on postcards:

Postcard showing a photograph of a Ship in Sydney Harbour

This was taken the day we left Holland. This new interaction program is fabulous to see and hold the memories and hear someone speak about them. I am really touched that these things will be kept for the future. Jacqueline, 11 September 2010.

Photograph in the Land of Miniskirted Girls

Dear Francesca, Andrea and John,
I am deeply impressed with the digital presentation.
Thank you very much for using my story.
Regards, Rose

Karin – Helen’s daughter, on Ataya’s Notebook

Wonderful stores of ‘hidden’ Australians.

We then asked participants to respond to a brief questionnaire, keeping the questions as open as possible to invite more spontaneous comments. Here I report some extracts drawing on participants’ responses.

How would you describe your experience with ‘Lost & Found’?

Listening to the persons involved in donating the various articles made it far more real to me, rather than just an exhibition of ‘things’.

Is there anything significant about the stories you listened to? Anything you would like to share with

others?

There were many stories that touched me. Even though people came from so many different countries, they all had very similar experiences.

Can you describe your feelings, emotions while doing the experience?

Nostalgic – since I too am a migrant arriving here in 1955. Your ‘birth country’ stays your ‘home country’.

Conversations with participants after the experience provided further insights into their interaction with objects and stories. All participants agreed on the novelty and significance of the experience. Many used the word ‘touching’ to describe what they had felt. At the end of the experiment there was a convivial atmosphere, similar to a community gathering. As happens when memory is stimulated, more memories began resurfacing, as in the dialogue between Jacqueline and her brother Nick remembering their trip to Australia by ship from Holland. At the time Nick was 14 and Jacqueline a few years younger: “Do you remember the sun rising from the ocean when the ship arrived to Sydney? That was the most amazing sunrise I’ve ever seen”. Vivid memories, you could tell, were reappearing in front of their eyes.

Watching one’s own life projected on a wall, hearing one’s own voice telling about lifelong memories, touching the keepsakes that have accompanied one’s own journey to a new home can be very emotional. It can happen that in these moments questions arise about other possibilities one could have had in life, the ‘what if’ kind of question. In one of these moments Nick confided his doubts: “I often wondered how growing up in Holland would have been. Back then, when we left Tilburg, Europe was devastated by the war, but after that time, people had a good life. I wondered how it would have been different for me, growing up there rather than here”.



Lost & Found, Audience Experience at NSW Historic Week, September 2010, photographs of the author.

8.6 Reflections and further development

Inherent to the migrant's condition is the ongoing, often unresolved, tension between 'here' and 'there'. Exploring the relationship between migration and material culture with *Belongings* as a case study, Ilaria Vanni explains the process that happens in the experience of migration by drawing on Ernesto De Martino's concept of "crisis of presence"⁴². Objects removed from their home become unfamiliar and uncanny, losing "their relations to the web of domestic uses, habits, sense of belonging, and cultural memories" through loss and displacement to another country. They then acquire new meanings and establish new 'life-worlds' and senses of belonging through re-grounding in a new home. De Martino, an Italian anthropologist, explains the crisis of presence as a potential life threatening condition in which individuals are confronted with an existential uncertainty due to the loss of all their familiar and domestic references, which functioned as 'sense makers', enabling the person to make sense not only of her surroundings, but also to situate herself historically and culturally in that place. In *The end of the world*, De Martino reports on a field trip to Calabria, a region in southern Italy. Looking for directions, the anthropologist and his colleagues invited an elderly shepherd whom they encountered on the road to show them the route, promising to bring him back as they reached the destination:

The man entered the car with the greatest diffidence, after which it turned into a real episode of 'territorial angst' as soon as he noticed the bell tower of Macellinara, his town, disappearing from the window screen. The tower represented the reference point of his circumscribed domestic space, without that he was lost.⁴³ ,

Analysing *Belongings'* first person memories in relation to objects, Vanni presents a twofold argument: on the one hand, objects in *Belongings* embody a continuum of affective experiences from the country of origin to the migrants' new home in Australia, enabling the telling of both this displacement and the subsequent re-grounding. On the other hand, the online exhibition space creates a "shared, multicultural relational idea of home"⁴⁴, rather than a physical space. Envisaging a future development of this case study into an exhibition of *Belongings* within a gallery and/or museum space, I take Vanni's reflections and devise three main themes upon which to develop a curatorial approach:

- the continuum of the affective experience
- the relational quality of the space
- the homing potential

In the following section, I will explore these themes for their potential in foregrounding a curatorial design of an exhibition of *Belongings* as well as reflecting on how interactions between memories, objects and the experience of migration can be mediated in a multimedia exhibition space.

8.6.1 Relational and social interactions: object tagging

Vanni's argument regarding *Belongings'* web based exhibition proposes that the online space, as opposed to a physical space, offers a shared, relational idea of home. In exploring the potential of *Belongings* to be exhibited in a physical space, I argue that the online and the physical experience are not oppositional, but rather complementary and that the online relational aspects can inform physical display and visitor's engagement. A symmetry can be envisaged between these two spaces, by taking two projects as a reference, *TOTeM* and *Your Paintings*, particularly given their reinvention of relations between people, physical objects and data.

TOTeM is a UKRC Digital Economy funded project exploring the social potential of the 'Internet of Things'. Drawing on user-generated content and tagging technology, the project explores the personal relationships between people and objects, and between people through objects. As the authors explain:

Part of the *TOTeM* project, the RememberMe artwork is a collaborative project with the Oxfam shop recording brief stories about donated items, the memories attached and any associated information on provenance. Audio clip are linked to an RFID tag and QR code. All tagged items join the shop's stock. Customers, are invited to use bespoke RFID readers, or their own smart phone to browse tagged items in the shop's stock, displayed amongst the many thousands of other objects. Once triggered, RememberMe labeled objects, replay the story through speakers located in the shop, evoking ghosts of the past.⁴⁵

*Your Paintings*⁴⁶ is a website which aims to show the entire UK collection of oil paintings. It comprises paintings from thousands of museums and other public collections around the country. Not only does it shows the paintings, but also the stories behind the paintings and the location where the works can be viewed. The website utilises *Tagger*, a crowdsourcing, multi-platform application that allows web users to classify paintings, finding and tagging details of paintings that would help other users to find art that is relevant to them.

With regards to this case study these projects offer perspectives that help renegotiate ways of emplacing the relational aspects of the web interface into a physical/networked space, in which users can browse through a collection of artworks or objects, leave their comments, creating connections between people, stories, objects and data. Tagging and crowdsourcing enable a two-fold relationship between people and objects: as objects talk to you, you can talk back to them and make them talk among each other.

Of significance to the wider context of museum studies and museum practices is that these crowdsourcing, multi-platform, tagging applications help foresee the implications of the next generation Internet for museums and heritage organisations. This shift has been anticipated by

David Bearman and Kati Geber in 2006 in their study outlining a future scenario for museums and cultural institutions developing in the rapidly networked environment. As the authors explain, it is crucial to their future planning that museums and other cultural institutions make available a new set of infrastructures that “assume smart objects, smart places, smart materials and socially connected users”. The authors address the three domains that are the main recipients of this change: objects, visitors and memory.

Objects (museum artifacts, buildings, public spaces, cell phones, etc.) can be communicating information carriers. This means we can give things knowledge that they can convey to our (physical and remote) visitors and that our visitors carry information they can convey to us.

People (visitors, staff, passers-by) will be in communication at all times that they wish with the museum, with each other, and with the objects we imbue with knowledge. This means that we can communicate with people whether they ‘come’ to us or not, and that they in turn can bring to our institutions a ‘social surround’ of their friends and family whom we will not see.

Memory (ours, the ‘museum’s’, object’s and space’s, other people’s, that of the ‘culture’) will be able to recall what we said about things, experiences, events we have encountered. This means that we can enable people to interact with us, objects, places, each other, and to retain the content of their interactions in order to enhance their own return experience or that of others. Memory will be cumulative, collective and cultural.⁴⁷

8.6.2 Evocative objects: the idea of home

In this rapidly changing, always connected, pervasive networked environment, the materiality of everyday objects that surround us, their emotional and intellectual value in anchoring memory and sustaining social relationships, is seen by many as both crucial and offering an alternative to disembodied and disengaged practices of social interaction. As a provisional conclusion to this chapter I will present two cases as a reference of how to convey an affective interaction with material objects.

The book *Evocative Objects: Things we think with* by Sherry Turkle is an appraisal of a restored importance of the concrete which many scholars are rediscovering through a renewed relationship with objects. Here the author explains the notion of evocative objects:

... objects carry both ideas and passions. In our relations to things, thought and feeling are inseparable. Whether it’s a student’s beloved 1964 Ford Falcon (left behind for a station wagon and motherhood), or a cello that inspires a meditation on fatherhood, the intimate objects in this collection are used to reflect on larger themes—the role of objects in design and play, discipline and desire, history and exchange, mourning and memory, transition and passage, meditation and new vision⁴⁸

Additionally, in the art domain more exhibitions are renegotiating the idea of home, one that transgresses boundaries between the private and public, individual and collective spaces, private objects and collections.

The exhibition *Home project* curated by Alison Munro adopted one of the Northbourne Housing Group apartments in ACT, Australia as a gallery space, transforming the empty rooms into a temporary gallery and challenging the boundaries between “domestic and public domains, gallery display and homely arrangements, spaces and places”⁴⁹. A number of artists and researchers were invited to reflect on the significance and complexity of everyday objects by addressing objects and architecture in reference to embellishment, decoration, and emotional and intellectual investment in spaces.

Object Stories, a temporary exhibition at Portland Art Museum, invited people and their objects into the museum to tell stories about things that matter to them – whether a postcard, military medal, childhood toy, or an iPhone. Objects and the stories associated with them are captured and published to an onsite – as well as an online – digital archive. According to the curators:

Object Stories ruminates on the ways objects make us as fully as we make objects, and the myriad ways objects speak to and shape who we are – our ideas, emotions, values, relationships, and aesthetics. Object Stories offers new possibilities to shift the relationship people make with museums, reshaping the institution as an organic, ever-growing repository made collectively by us of our stories and objects, mundane and exalted, personal and subjective.⁵⁰

8.6.3 What if objects cannot be touched?

As a parting thought to this chapter I would like to include Anne Cranny-Francis and Sandra Dudley’s experiences with artworks and museum objects which cannot be touched, as this represents the most common situation in museums and galleries. The experiences provide insights into the potential of the desire of touch as a medium of engagement with the artwork.

Cranny-Francis examines the work of Australian artists and sculptor Ron Mueck:

In her article about the rivalry between the art-forms Andrea Bolland quotes sixteenth-century sculptor, Nicolo Tribolo’s claim that a blind man would recognize a sculpture by its feel while a painting would simply seem to him a flat surface⁵¹. Mueck’s sculptures, however, cannot be touched because of the relative fragility of the material, and their verisimilitude lies not in their tactility but in their surface appearance – as it does for painting – though the scale of his works (not life-size) disrupts that surface realism. So Mueck’s work deconstructs that traditional distinction between painting and sculpture, while at the same time evoking in viewers a desire to touch the work that is related not to the tradition of sculpture but to Mueck’s manipulation of scale and the visual paradox/conundrum this creates.

With Mueck's work, the immediate challenge is the disparity between the hyperrealism of Mueck's surface detail and the size of the sculpture: the figures are either very large (as with *Wild man*) or very small, as in the new work, *Youth* (2009), or Mueck's first publicly acclaimed work, *Dead Dad* (1996-1997).

The contradiction between the hyperrealism of the sculpture's appearance and the non-realism of its size induces in many viewers a desire to touch the work – to verify that the work is not 'real' or to check whether the work feels as lifelike as it looks. Susanna Greeves has written of Mueck's work: "Touch, the sense which Mueck's rendering of warm, heavy, flesh or fine, downy hair most arouses, has been deemed unreliable, dangerous or even morally questionable"⁵². Greeves records not only the viewers' desire to touch, but also the cultural meanings associated with that desire and that sense. In western society, touch is traditionally considered a 'lower' or debased sense, ranked the lowest of the five senses identified by Aristotle (seeing, hearing, taste, smell, touch). Mueck's work directly challenges this Cartesian understanding of embodiment and being by demonstrating the intimate connection between touch and (therefore) the body with understanding and knowledge. As Greeves records, in order to understand the work the viewer involuntarily reaches for it – an action all the more palpable for being performed in an art museum context in which touching (unless invited) is forbidden. The censored (usually) reaching-out-to-touch encourages in viewers an awareness of both the context of the work and its demands and expectations (social, cultural) and of their own bodily response – the immediacy of the sensory engagement that is then subjected to social and cultural control.

As with other sculptures Mueck's work engages several other tactile senses, related to the body's positioning in space/time: proprioception, the body's internal sense of self (of muscular tension and blood warmth) and relation to the world (objects, people, etc.) and the vestibular sense, the sense of balance that enables us to move through that world. Negotiating the spatial relationship to Mueck's sculptures as they invite or evoke a tactile response requires from viewers an enhanced bodily self-awareness – not only to resist the urge to touch, but also to maintain a safe distance from the works (because of their material fragility) and to recalibrate spatial awareness by reference to the contradictory information given by the (size of the) works.

Mueck's sculptures make the viewer particularly aware of this connectedness because of the work needed in order to make sense of them – work that requires from the viewer a fully embodied (sensory, intellectual, emotional) engagement.⁵³

In *Materiality Matters: Experiencing the Displayed Object*, Dudley recounts her own experience of visiting the art gallery at Compton Verney in Warwickshire, England, which holds one of the largest collections of Chinese artworks in Europe:

The horse was over a metre high, and stood considerably higher still as a result of its plinth. I was utterly spellbound by its majestic form, its power, and, as I began to look at it closely, its material details: its greenish colour, its textured surface, the small areas of damage. I

wanted to touch it, though of course I could not—but that did not stop me imagining how it would feel to stroke it, or how it would sound if I could tap the metal, or how heavy it would be if I could try to pick it up. I was, in other words, sensorially exploring the object, even though I was having to intuit rather than directly experience some of the sensory experiences. There was no label at all adjacent to the object, only a tiny number which correlated to the interpretive text on the gallery hand guide which I had not yet picked up. I still knew nothing about this artefact, but its three-dimensionality, tactility and sheer power had literally moved me to tears.⁵⁴

Dudley describes her first response to the horse as “an emotional, sensory – and even visceral – one”⁵⁷. What is the value of this encounter, she asks. It has an impact on the learning experience about the object, it impacts on the “cognitive response to the artefact’s history”, it also enables a state of “emotional receptivity and emotional response as transformative phenomenon”⁵⁵ :

My view is that the opportunity to be moved to tears, tickled pink, shocked, or even disgusted to the point of nausea by a museum object is itself a powerful component of what a museum experience can offer – not just as a step on the journey to cognitive understanding of an object’s history or indeed of our own, but simply as a potent and sometimes transformative phenomenon in its own right.⁵⁵⁶

- 1 Fernandes, A., 2007. Belongings: post-WW2 migration memories & journeys. In *Proceedings of Moving Cultures, Shifting Identities: a conference about migration, connection, heritage and cultural memory*. Adelaide. Available at www.migrationheritage.nsw.gov.au/belongings/about-belongings/belongings-paper. [accessed February 18, 2010]
- 2 Fernandes, A., 2007. *Ibid.*
- 3 Fernandes, A., 2007. *Ibid.*
- 4 Witcomb, A., 2012. Using souvenirs to rethink how we tell histories of migration. Some Thoughts. In S. Dudley et al., eds. *Narrating Objects, Collecting Stories*. Abingdon: Routledge, pp. 36–55, p.44.
- 5 Witcomb, A., 2012, *Ibid*, p.44.
- 6 Witcomb, A., 2012, *Ibid*, p.44.
- 7 Wehner, K. & Sear, M., 2010. Engaging the material world: object knowledge and Australian Journeys. In S. Dudley, ed. *Museum Materialities: Objects, Engagements, Interpretations*. London: Routledge, pp. 143–161, p.143.
- 8 Wehner, K. & Sear, M., 2010, *Ibid*, p.160.
- 9 Wehner, K. & Sear, M., 2010, *Ibid*, p.159.
- 10 VVAA, 2009. Migration Memories. Available at: http://rsh.anu.edu.au/migrationmemories/html/project_research.htm [Accessed January 30, 2013].
- 11 VVAA, 2009. Migration Memories, *Ibid.*
- 12 Pallasmaa, J., 2005. *The eyes of the skin: architecture and the senses*, Chichester, England: John Wiley & Sons quoting Montagu, A., 1986 (1st Ed. 1971). *Touching: The Human Significance of the Skin*, New York: Harper & Row, p.3.
- 13 Prosser, J., 2001. Skin memories. In S. Ahmed & J. Stacey, eds. *Thinking through the skin*. London: Routledge, pp. 52–68, p.52.
- 14 Bongers, B., 2006. *Interactivation: Towards an E-cology of People, Our Technological Environment, and the Arts*, Lulu.com, p.118.
- 15 Gibson, J.J., 1962. Observation on Active Touch. *Psychological Review*, 69(6), pp.477–491, p.479.
- 16 McGlone, F., 2008. The Two Sides of Touch: Sensing and Feeling. In H. J. Chatterjee, ed. *Touch in Museums. Policy and Practice in Object Handling*. Oxford, UK: Berg Publications, pp. 41–60, p.43.
- 17 McGlone, F., 2008, *Ibid*, p.43.
- 18 Paterson, M., 2007. *The Senses of Touch. Haptics, Affect and Technologies*, Oxford, UK: Berg.
- 19 Paterson, M., 2007, *Ibid*, p.17 quoting Aristotle, 1984. *De Anima*, Lawson-Tancred, H. trans, London: Penguin, 423b.
- 20 Chatterjee, H.J., 2008. Introduction. In H. J. Chatterjee, ed. *Touch in Museums. Policy and Practice in Object Handling*. Oxford, UK: Berg, pp. 1–8, p.8.

- 21 McGlone, F., 2008, *Op.cit.*, p.56.
- 22 McGlone, F., 2008, *Ibid.*, p.56.
- 23 McGlone, F., 2008, *Ibid.*, p.56.
- 24 Hetherington, K., 2003. Accountability and disposal: Visual impairment and the Museum. *Museum and Society*, 1(2), pp.104–115, p.105.
- 25 Preziosi, D., 1996. Collecting/Museums. In R. Nelson & R. Schiff, eds. *Critical terms of Art History*. Chicago: Chicago Press, quoted in Candlin, F., 2008. Museums, Modernity and the Class Politics of Touching Objects. In H. J. Chatterjee, ed. *Touch in Museums. Policy and Practice in Object Handling*. Oxford, UK: Berg, pp. 9–20. p.10.
- 26 Classen, C. & Howes, D., 2008. The museum as sensescape: Western sensibility and indigenous artefacts. In C. Godsen & R. Phillips, eds. *Sensible Objects: Colonialism, Museums and Material Culture*. Oxford, UK: Berg/Godsen, C., pp. 192–222, quoted in Candlin, F., 2008, *Op.cit.*, p.15.
- 27 Spence, C. & Gallace, A., 2008. Making Sense of Touch. In H. J. Chatterjee, ed. *Touch in Museums. Policy and Practice in Object Handling*. Oxford, UK: Berg, pp. 21–40.
- 28 Ernst, M.O. & Banks, M.S., 2002. Humans integrate visual and haptic information in a statistically optimal fashion. *Nature*, 415, pp.429–433.
- 29 Cranny-Francis, A., 2010. *Object Workshop*, paper presented at Transforming Culture Research Centre, Faculty of Arts and Social Sciences UTS, Sydney, 24 March.
- 30 Munari, B., 2004. *I Laboratori Tattili*, Mantova: Corraini Editore, p.3 (my translation from Italian)\
- 31 Marinetti, F.T., 2005. Le tactilisme (manifeste futuriste), (1st Ed.1921) In S. Duplaix & M. Lista, eds. *Sons et lumières: Une histoire du son dans l'art du vingtième siècle*. Albany: State University of New York Press.
- 32 Munari, B., 2004, *Op.cit.*, p.3.
- 33 For further information on how the interface works see: Bongers, B. & Mery, A., 2008. Interactivated Reading table. In *OZCHI 2008*. Cairns, QLD, Australia.
- 34 Cranny-Francis, A., 2008. Biopolitics of the senses: touch, sound and embodied being. *SCAN | journal of media arts culture*, 5(3). Available at: http://scan.net.au/scan/journal/display_synopsis.php?j_id=15. [Accessed July 7, 2013].
- 35 Cranny-Francis, A., 2008. Sonic Assault to Massive Attack: touch, sound and embodiment. *SCAN | journal of media arts culture*, 5(3). Available at http://scan.net.au/scan/journal/display.php?journal_id=124 [Accessed July 7, 2013].
- 36 Bonenfant, Y., 2008. Sound, touch, the felt body and emotion: Toward a haptic art of voice. *SCAN | journal of media arts culture*, 5(3).
- 37 Bonenfant, Y., 2008, *Ibid.*
- 38 Fernandes & et al., 2005-2009, *Belongings: Post-WW2 Migration Memories and Journeys. Oral history interviews transcripts*, NSW Migration Heritage Centre, Sydney.
- 39 Fernandes & et al., 2005-2009, *Op.cit.*
- 40 Fernandes & et al., 2005-2009, *Op.cit.*
- 41 Fernandes & et al., 2005-2009, *Op.cit.*
- 42 Vanni, I., 2012. Objects and narratives of migration and place in *Belongings*, an Australian online material culture collection. In *Migration, Memory and Place*. University of Copenhagen and Arken Museum of Modern Art, Ishøj.
- 43 De Martino, E., 2002. (1st ed. 1977) *La fine del mondo. Contributo all'analisi delle apocalissi culturali* C. Gallini & M. Marcello, eds., Torino: Einaudi. (my translation from Italian)
- 44 Vanni, I., 2012, *Op.cit.*
- 45 Karpovich, A. et al., 2010. Tagging is Connecting : Shared Object Memories as Channels for Sociocultural Cohesion. *M/C Journal*, 3(1).
- 46 BBC Your Paintings. Uncovering the nation's art collection. Available at: www.bbc.co.uk/arts/yourpaintings/ [Accessed July 7, 2013].
- 47 Bearman, D., Geber & K., 2007. Enhancing the Role of Cultural Heritage Institutions through New Media: Transformational Agendas and Projects. In *ICHIM07*. Toronto, Canada. Available at: <http://www.archimuse.com/ichim07/papers/bearman/bearman.html>. [Accessed June 20/2013]
- 48 Turkle, S., 2007. *Evocative Objects: Things We Think With*, Cambridge, MA: MIT Press, p.4-5.
- 49 Munro, A., 2003. Content(s): Significance and complexity in everyday objects. Available at: www.craftact.org.au/projects/contents/ [Accessed July 8, 2013].
- 50 Object Stories, The Portland Art Museum, Available at: <http://objectstories.org/about/index.html> [Accessed July 8, 2013].
- 51 Bolland, A., 2000. Desiderio and Diletto: Vision, Touch, and the Poetics of Bernini's Apollo and Daphne. *The Art Bulletin*, 82(2), pp.309–330, p.321.
- 52 Greeves, S. & Wiggins, C., 2003. *Ron Mueck*, Canberra: National Gallery Publications, p.30.
- 53 Cranny-Francis, A., 2012. Sculpture as deconstruction: the aesthetic practice of Ron Mueck, University of Technology, Sydney, Working paper.
- 54 Dudley, S., 2012. Materiality Matters: Experiencing the Displayed Object. *UIM Working Papers in Museum Studies*, 8, pp.1–9. Available at: www.ummsp.lsa.umich.edu, p.6.
- 55 Dudley, S., 2012. *Ibid.*, p.6.
- 56 Dudley, S., 2012. *Ibid.*, p.6.
- 57 Dudley, S., 2012. *Ibid.*, p.6.



Mock-up image by the author, showing an Augmented Reality application of Liverpool's Weir. Source photographs from Liverpool Heritage Library, by the author.

9 LIVING STREAMS

Digital mediation and social engagement with place, communities and the the intangible heritage of the Georges River

This case study explores the relationship between place, technology and culture renegotiated by ubiquitous computing and mobile technologies in one of the richest and most complex cultural landscapes in Sydney: the Georges River flowing through the Local Government Area of Liverpool, a municipality within the Greater Sydney Metropolitan Area.

Funded by the Western Sydney Regional Organisation of Councils in 2011 under the 'Water in the Landscape' scheme for one year, and developed in collaboration with Liverpool City Council, the project aims to raise awareness about water as an environmental resource and living heritage.

As a case study to the research, the project explores and reflects on the new possibilities for participatory authoring of public space that are to made available by mobile and ambient computing. From a research perspective, the project offers a context in which to investigate practices of collaborative mapping and sharing of place-based knowledge that are intrinsic to mobile and wireless media. In doing so, it looks at new possibilities for Augmented Reality to interface geographical and data space, archived knowledge, personal stories and creative productions with new experiential approaches to negotiate the place-making of the river and its environment.

9.1 Introduction

The project develops a series of creative workshops run by artists and creative producers engaging with culturally diverse local communities in Liverpool in a participatory production of the Georges River Augmented Reality (henceforth AR). AR enables the display of real time digital information, such as audio, photographs, video and texts, in addition to real world objects. *Living Streams* focuses on the implications of using AR for community engagement and place-making, exploring how interactive mapping and AR can become tools for social

engagement, creative production and interpretation of history, place and local memory. Interaction with the *Living Streams*' interface enables a spontaneous retrieving of context-specific information in such a way that as people walk along the riverbanks or take a boat ride on the river with a smartphone, they can experience stories, music, sound and artworks coming alive in the flesh.

The name *Living Streams* alludes to both the streaming of the river's water in the environment in addition to illustrating information and data as vital resources linking place and communities with features of the natural and cultural landscape. The project aims to weave together the landscape, water and built environment as well as languages, cultures, customs, artistic practices and knowledge, thereby linking them with area's local creative capital.

9.1.1 Questions of locality

The project evolved from my previous research on mapping and locative media which reflected on the tensions that emerge between maps – with their reductionist approach to the representation of reality – and the ever-changing nature of contemporary geographies, renegotiating the way we make and use maps as ways of knowing, interpreting and connecting with places.¹ and

Engaging in a participatory mapping and co-authoring of the diversity and plurality of the river's geographies, the project delves into this interplay between the ubiquity of the digital world and the locality of the river's social and cultural environment. It looks at the inherent implications of using AR for community engagement and place-making and how these can become tools negotiating spatial practices with social agency.

9.1.2 The Georges River

Every place, landmark and geographical feature has a story to tell. The river flowing through the Liverpool Local Government Area is of great cultural and ecological significance. With over 150 languages spoken in the local area the themes of environment, settlement, dispossession, economics, industry and migration overlay and intertwine. The Aboriginal links to the river are of particular importance, as the river itself is a crucial social, cultural and economic resource. Also significant is the migration heritage, as is the concept of 'working water' together with its industrial heritage. The river has always been a precious resource in the economic, social, cultural and environmental history of the country.

Of specific interest to this case study is the dialectic that emerges between the non-locality and intangibility of the digital world and the site-specificity of the physical environment. I am interested in exploring how this dialectic can inform and shape the design of location-aware interfaces, by looking at new ways of addressing the 'site'. *Living Streams* explores the potential of participative and location-aware technologies to foster new social relationships, inspiring a community to recall a place's unique history, extending the idea of place-using technologies that renegotiate a new kind of 'locality' at the intersection between networked

space and place-bound identities.

Living Streams aims at inspiring local communities, artists, and interested members of Liverpool's organisations to reclaim the significance of the 'local' and at the same time as taking responsibility for their environment.

9.1.3 Locative media and beyond

The theoretical and artistic background of the project finds its milieu in the Situationist International spatial practices originating from the Dadaists and Surrealist movements that emerged in the late 1950s, as well as from the land-art experiments that followed in the 60s and 70s. These practices engaged with the social, physical and experiential qualities of specific locations - the Situationist International coined the term 'psychogeography' to define this new field of spatial inquiry- bringing art out of galleries and using the city or the landscape as a new territory for artistic exploration and civil action. Since then, the notion of 'site' has been redefined endlessly, moving from constituting a fixed concept, a place on a map, into something fluid and transient, something that can be reconfigured aesthetically as well as constructed socially and culturally.

In his book *Walkscapes* Francesco Careri traces the history of walking as a thread running throughout human civilisation². According to Careri, walking is an aesthetic, as well as interpretive spatial practice. Walking is a performative act of producing space, connecting Indigenous cultures to urban activist movements alike. Walking is a way of knowing, a temporary sign of one's passage, marking and making the territory alongside exploring it. From the same theoretical background stems the wave of artistic media practices that developed in the early 2000s under the common term 'Locative Media'. Locative media was welcomed by critical theorists, electronic artists and the media community as the 'next big thing', bringing to the realm of electronic art and digital media a new wave of artistic practices that engaged the creative, theoretical and aesthetic possibilities opened up by positioning, mapping and location-aware technologies. Taking advantage of the increasingly ubiquitous Global Positioning System, locative media deployed portable, location-aware applications that involved participants in mapping processes, social networking and/or artistic interventions. As critical locative media theorist Anthony Townsend explains, "here the real geography becomes a canvas to be inscribed with personal narratives, desires and memories, offering communities the opportunity to co-author their environment, map their own space and share subjective experiences and local information"³.

Current debate on locative media is now reflecting on the failure of this media as a form of expression 'per se' and as a social media. Critics of locative media have ascribed this failure to a simplistic approach and narrow understanding of location, together with a lack of engagement with lived spaces and the social context. In respect to recent worldwide protest and activist movements, such as the Arab Spring and Occupy Wall Street, Tristan Thielmann bluntly

criticises locative media for its social disengagement:

...locative media only is of use for those people who already are aware of their location, who know where they came from, and where they are going. It is the gadget nobody needs, as it only grants more privileges to privileged places, causing forgotten places to be rendered even more obsolete. No wonder that the Arabic Revolution does not need any locative media at all! (...) Locative media is (was) only of importance in an affluent society, in a society where the locations are subject to an attention economy. Should we forget about locative media? No: even though locative media failed as a social media, disguised as a new, hip, mobile must-have, it leads us to realize that it is a highly hegemonic instrument of power like any other cartographic medium.⁴

Looking beyond locative media, *Living Streams* investigates the possibilities that are intrinsic and unique to mobile and wireless media as a form of a community's expression, and as a creative capital of a locale. In asking what might be the next big thing for locative media and how we imagine the networked city beyond locative media, the project acknowledges what Mark Shepard refers to as "the need for new approaches to engage with broader and more subtle nuances of urban, exurban and rural environments"⁵.

Living Streams takes on this stance by proposing an approach to locative media that deploys digital environments, mapping and learning tools, as well as enables encounters and possibilities for communities to critically and actively engage with their locale and its material and intangible resources.

9.1.4 Creative applications of Augmented Reality

'Where are you?' – this is the most frequent questions people ask when using a mobile phone. This indicates that our location is important, mostly because it is no longer predictable. However, we can always share it in real time



Where are you?



You Are Here.

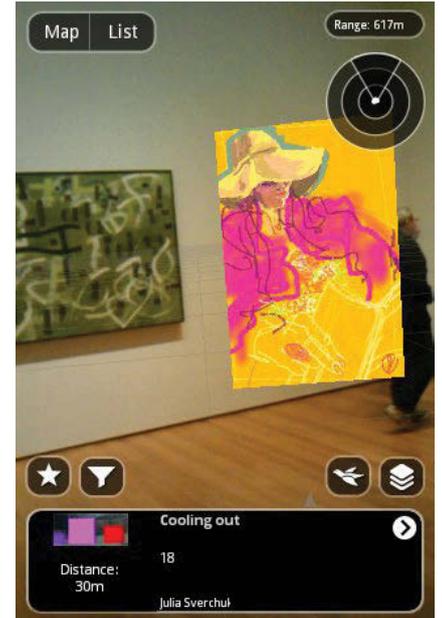


You Are Here Now.

as the devices we carry leave traces of our movements, disclosing data that is sensitive to both location and time. Inherent in this exposure to public surveillance and global tracking is, on the one hand, the trading of location-aware information with some degree of personal freedom. On the other hand, this affords the opportunity to customise services and content based on our location, and to retrieve information that has been specifically produced for that location and time only.

Several creative applications for AR were presented at ISEA in 2011. These often took the form of workshop-based projects engaging participants in collaborative place-based narratives. *'Untitled (Mechanics of Place)'*, by the artist and scholar Hana Iverson, created a mobile narrative and AR of a neighbourhood in Istanbul. The project drew from a database of video streams in multiple locations at different times, layering footage onto specific locations in the streets of Istanbul. When the camera recognized a predetermined location on the street, it played the corresponding video assigned to the geographical coordinate, layering it architecturally onto the site. The video poems reflected the city's issues of cultural disjunction together with its volatility and mix of religious and ethnic tensions. As the artist explains, "these small films draw upon the transitional urban context to fully achieve their meanings. The final walking route will follow an algorithmically designed path that has multiple hot spots where the videos will be seamlessly laid into the landscape"⁶.

In the project *'All'Aperto'*, based in the small town of Trivero in northern Italy, the artist Stefano Arienti transformed some large local river stones, moulded by time, into roughly hewed and painted heads. He called them the *'Telepathists'*, as they took on the role of what the artists envisaged as "tutelary deities," permanently establishing a visible and invisible presence in the landscape. The augmented sculptures became nodes of an extended free wireless network providing service and access from different locations across the municipality. As the artist explains:



MoMA Augmented Reality



Stefano Arienti, 'I Telepati'

I liked the idea of assembling a dull material like stone and the Internet, as if the sculptures may embody the concept of immaterial communication, a very ancient dream of humanity”, explains the artist. “I Telepati is a playful title, an invitation to fantasise on these thinking heads, a representation of an ancestral and crystallized energy freed by art”.⁷

Such projects are part of what Simona Caraceni defines as ‘Virtual Museums’, or museums without walls. Virtual Museums do not exist exclusively online, but rather can be understood as constituting the integration and informational support of 3D environments within physical spaces. Following Caraceni’s taxonomy of Virtual Museums based on the level of interaction and engagement of visitors with both the museum space and collection, *Living Streams* falls at the intersection between what Caraceni classifies as the ‘Fifth and Sixth Generation’ model for Virtual Museums⁸. The former involves the interactive engagement of the community participating in the politics of exhibitions and interpretation of the collection by focusing on common interests and values. In practical ways this model enables a participatory space to be authored by the community as well involving use of social media and an interactive Web 2.0 as community engagement platforms. As an exemplar of the sixth generation model for Virtual Museums Caraceni describes the *Museo Torino* as a new and ambitious concept of distributed museums aiming at hosting on a website location-based applications with all the historical information related to the city of Turin and its architectural heritage, dating from Roman times to the present day. This model turns the real city into a living collection that can be searched and navigated online and on site, one that is constantly evolving.

9.2 Places as networks: The Georges River

Heather Goodall and Alison Cadzow, in their extensive work on the Aboriginal history of the Georges River which has resulted in a book *Rivers of Resilience* and a series of photographic exhibitions, reflect on those everyday practices sustained by the river’s environment and suggest that while places are changing, a way for people to create connections and ‘make locality’ in these places is through everyday ways of living. Retracing the histories of Aboriginal communities that have formed along the river after the invasion, Goodhall and Cadzow look at the river as a continuous and “ordering link between the people and the places”⁹. Ascribing agency to the river and recognizing its role in maintaining cultures and history, the river is, according to Goodall and Cadzow, “an actor in the stories. (...) Each Aboriginal site has its place; every Aboriginal place has its story in the life of an Aboriginal family. Country is alive with stories”¹⁰.

Liverpool’s original inhabitants were the Cabrogal people who spoke the Darug language. The Georges River defined a natural boundary between the Darug and the Tharawal tribes. In traditional times, prior to the invasion, everyday practices of keeping knowledges and customs

operated through what the anthropologist Alan Rumsey refers to as ‘inscriptive practices’. In traditional cultures, such practices used features of the landscape to preserve myth and history in what can be understood as a continuing process of the “production and re-production of meaning”¹¹. According to Rumsey, inscriptive practices work to memorialise and objectify in natural landmarks – not only the myth stories of the Dreaming, the mythical path of the ancestor’s journey of creation through the land – but also history as the sum of “past actions of human beings”. Hence, the landscape becomes a medium to inscribe – and through which to retrieve – actions from both a mythical and a historical past. These inscriptive practices provide the means for orientation not only through space, but also through historical time. In such a context country and stories are intrinsically entwined and cannot exist one without the other.

9.2.1 ‘Country’ and knowledge

Living Streams draws on an understanding of ‘country’ from an indigenous perspective, enabling geo-location, access and sharing of knowledge that is local and site-specific. This knowledge is not fixed. Rather, it is dynamic, as it constantly evolves and transforms through the contribution of the community. Addressing attitudes of alienation and disengagement from the river that have developed within the last decades, the project aims at fostering a change away from the manner in which people have “turned their back from the river” in recent times, as Council officer Cinzia Guaraldi, partner to the project, remarks¹². Up until the early 1990s the river used to be a resource for agriculture and local manufacturing industries, as well as a fishing ground which offered clean waters for swimming and outdoor activities. Changes in the local economy, including in recent years the increase of water pollution and new development strategies, have radically changed the social and economic interaction of the river with the community.

The project aims at drawing attention back on the river as a natural and cultural resource for its locale. It conceives of the river itself as an interface for keeping, sharing and retrieving stories and culture as well as making new ones. In doing so I explore how a new way of mapping, collecting, producing and sharing local knowledge can transform the way people engage with the environment, how it can renegotiate meanings and perceptions of place.

Living Streams looks at the potential of AR to perform as an inscriptive and interpretive tool, merging storytelling with walking and moving through the landscape. Using the river-scape as an alternate media source for stories to be heard, and artworks and media to be retrieved, *Living Streams* aims at creating a unique experience of place, water, art and history by enabling a network of permanent, yet invisible traces. We envisaged the project as contributing to the enhancement of the place’s connectivity by interfacing old and young generations, the natural and the built environments, wifi networks, material objects, intangible heritage, media, digital and physical locations.

In the exhibition *Design and Country*, the artist Jacqueline Gothe discusses the social responsibility involved in Indigenous-led collaborative projects with regards to the land management project at the Mill Creek site, which negotiates indigenous knowledge systems and management practices in the complexity of a modern city. Gothe argues that

...working with these projects fosters insight and appreciation of the complexity of responsibility to Self, Other and Country. These encounters often demand an attitude of openness and determination by the designer to understand the dimensionality of respect, recognition, self-reflection and reciprocity.¹³

9.2.2 The project partners

Living Streams develops collaborations through partnerships with several organisations, cultural groups, communities, local artists and other professionals in Liverpool. These included the community garden program *Living Streets*; the Liverpool Heritage Library and its extensive collection of local historical photos and oral histories; *Curious Works*, a not for profit organization working at the intersection between art, community and new media training; and *Casula Powerhouse Art Centre*, a vibrant cultural hub involved with contemporary visual and performing art and community based practices. Collaborations have also been established with *Liverpool Migrant Resource Centre*, *Liverpool Historic Society*, as well as a number of local primary and secondary schools, youth organisations such as *Street University*, local Aboriginal elders groups, a number of local professionals (from historians to environmental scientists), and local sound and visual artists, creative producers and performing artists.

As the project media trainer, *Curious Works* brings to the project its long-term field experience in media training based on grassroots projects developed with communities in Western Sydney and in the Pilbara, located in remote Western Australia, focusing on capacity building, empowerment, professionalism and sustainability.

9.3 Curatorial design strategies: Inclusion and Participation

Living Streams conceived of places – such as Goodall and Cadzow – as networks of histories and cultures mobilised and activated by people’s everyday ways of living, and including their walking, searching, playing, traveling and storytelling. The design of a participatory, networked platform was instrumental for the local communities to turn a ‘silent’ geography into a ‘living stream’ of culture and creativity to which everyone could actively contribute.

Acknowledging Kwon’s definition of location as “relational and multi-sited”¹⁴, the river’s historic sites, heritage buildings, public spaces, parks and recreational areas all became part of a discursive narrative: a network. Following Bruno Latour we can examine these networks for their potential to renegotiate temporal and spatial distance and scale through the entanglement of the physical and the digital¹⁵.

Deploying landscape as an interface, *Living Streams* played with the ‘homing’ potential of

mobile phones in the river's re-wired environment. As a researcher and practitioner in the field of mobile computing Drew Hemment argues that

... we are increasingly able to digitally search and interrogate the space. Social tools can be layered over the city, giving us real time access to information about the things and people that surround us, helping us to connect in new ways, and giving rise to a data-driven society. (...) By social technologies I mean something a little broader than just a set of Web 2.0 applications such as Flickr and Facebook. I mean a broader set of technologies which create possibilities for social interaction, but then also in a broader sense you can look at technology as socially constructed.¹⁶

Aggregating content currently spread over a number of public and private archives as well as people's personal memories, *Living Streams* collected stories and resituated them spatially in the environment, posing questions on how this affected our perception of place. As a contemporary atlas *Living Streams* remapped new correspondences between things, places, and the meanings people project on them. However, unlike traditional atlases, these correspondences are provisional, based on criteria that include the dimension of time and the partial knowledge and subjectivity of the author who created them.

The way narratives are interlaced is based on people's subjective interests, background, choices, curiosity and experience. Choosing a theme, keyword, or selecting a character to guide them on their journey can open up multiple interpretations of the same location, alternative narratives, subjective appropriations and a new understanding of place and culture.

9.3.1 Walking as knowing: The landscape as an interface

Aboriginal people will tell you that you cannot know the country until you have walked over it. Studies on nomadic cultures reflect on this experiential, place-based knowledge as Francesco Careri discuss in his research on the history of walking practices:

The act of crossing space stems from the natural necessity to move in order to find the food and the information required for survival. But once the basic needs have been satisfied, walking takes on a symbolic form that has enabled man to dwell in the world. By modifying the sense of the space crossed, walking becomes man's first aesthetic act. (...) This simple action has given rise to the most important relationships man has established with the land, the territory.¹⁷

Walking becomes in this context a way of knowing, as participants encounter stories and narrators along with their exploratory movement in space. The river, therefore, is conceived as a medium for transferring memories of distant narrators, be it a migrant telling of her life journey to a new country or an Aboriginal elder remembering places and ways of living by river that no longer exist, to the experience of the listener/walker who situates the story in

place. Aggregating content now spread over a number of public and private archives as well as people's private memories, Living Streams aims at creating a site-specific living memorial of the river enabling not only new ways of knowing that are situated and experiential, but also new ways of making and 'inscribing' place, as Rumsey describes indigenous memorial practices¹⁸. Stories from indigenous elders and senior migrants about the role and significance of the river in the past, not only can be heard, but they can also be located spatially within the environment. As the river becomes a fluid media-scape renegotiating connections between the past, present and future, questions are posed regarding what was there before, what is here now, what will be next? How does this affect our perception of place?

9.4 The making of a participatory interface

From its initial conception, at the end of 2009, to its launch in October 2012, *Living Streams* developed, on and off, over a three year period. In this second part of the chapter I focus on the making of *Living Streams'* technical and engagement platform, the people involved, the kind of work that has been created and the different interpretations of place and history that came from different communities and cultural groups. I will then look at how these interpretations are situated in context and the experience they create. The final part of this chapter is a reflection on evaluating the strategies and future development of community driven projects.

Living Streams: An engagement platform

In November 2011 Curious Works completed the design of the online platform, integrating a series of online publishing, interactive mapping and AR applications. The platform allows the storage, editing and retrieval of location-based media content in different formats. The web site can be viewed at: www.livingstreams.net.au.

It includes the following:

- A web site with auto-posting functionality, meaning that all email media attachments as well as text messages or other messages that are sent using Twitter or Facebook are automatically published as posts on the project's web site. Online publishing is moderated by key contributors to the project to ensure that web content has appropriate approval before publication.
- Integration of an interactive Google map. The map which is featured on the Living Streams web site is automatically updated once content is added on Google Maps. It is possible to add text, images as well links to videos and placemarks on the map.
- AR platform using Wikitude, a free software allowing the display of digital information on real world objects. By using the camera, or simply holding up a smartphone, people are able to explore the digital content associated with their surroundings in specific areas along the river.
- A Web browser allows a search for specific points of interest based on the user's location and the viewing of relevant information on a map, list and on an AR camera.
- QR codes, which contain a small text and/or a URL linked to specific images or videos, tag points of interest within sites of significance and can be scanned using a smart phone.

The web site organises media content around five main themes: Art, Land, Water, History and Sound. Themes can be explored as blog entries, that is as messages combining text, video and images listed chronologically, through a map, which assigns a place-mark to each submission as well as in situ by use of a smart phone. All content published on the *Living Streams* web site is generated by users and created through a series of training and creative workshops, which are discussed in the next session. A boat tour and a heritage river walk provided the opportunity to experience stories, music and creative works allowing the results of workshops to come alive in their actual location.

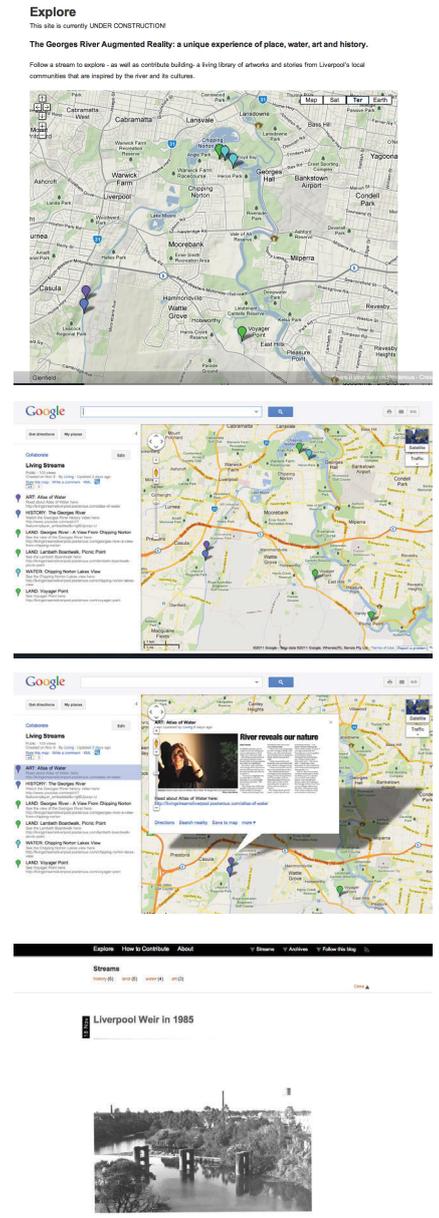
9.4.1 Knowledge transfer and strategies of engagement

Since its very beginning the goal of *Living Streams* was to transfer ownership of the project to the community through the establishment of a training program that was specifically designed for this purpose and which involved ‘cultural leaders’ – that is youth workers, local cultural development officers, primary and secondary school teachers, local artists, and representatives of local cultural organisations with different cultural backgrounds and expertise.

Curious Works brought to the project its long-term involvement in new media training, having worked extensively on the ground with communities in Western Sydney and in the Pilbara, located in remote Western Australia.

For instance, in Newman, remote Western Australia, Curious Works managed to transfer skills on film making to school teachers and youth workers in such a way that not only are students now capable of developing their own films, but also they can organise film festivals themselves, locating equipment and all the necessary resources to keep the project running. Curious Works’ training model has shown over the years that training is successful when it is embedded in strategic ways in the community.

Building on this model, *Living Streams*’ training program offered key producers a unique opportunity to learn how to create an AR experience and to pass on skills to their



A series of screenshots from *Living Streams* web site. Retrieved from www.livingstreamsliverpool.posterous.com, now available at <http://livingstreamsliverpool.wordpress.com>

groups through the *Living Streams* engagement platform. This involved online publishing and posting to the project's website and managing online submissions in different formats. It taught how to post various types of content to Google Maps and then to update and maintain journeys using AR

Living Streams' AR technical workshop was held at the Liverpool Central Library on 18 November, 2011. The workshop was advertised as an open call on Liverpool Council web site and directed to all interested members of the community, local artists, key producers, teachers and cultural workers and anyone who was interested in learning about A R .

Overall, nine people took part in the workshop. The training was practical and interactive with a hands-on approach, which enabled all participants – even the less experienced ones – to experiment with what they learnt on their computers and smart phones. Participants were quite diverse in terms of computer proficiency, age and background. All had a little understanding of AR before starting the workshop. By the end of the day-long training, however, they all seemed to be have gained sufficient knowledge to understand the potential of AR for future application in their work. The following are some of the participants' comments on their experience:

- I could use it to promote stories and art
- Great opportunity to create site-specific content to smart phones
- Fantastic for adding additional layers and meaning to site specific public artworks and CCD projects.¹⁹

Three participants admitted to have enough confidence and proficiency to be able to teach others what they had learnt in the workshop. Others required additional training and assistance.

In regards to their future involvement with *Living Streams*, three participants agreed to become key producers and to help involve artistic and cultural groups in creative workshops using AR technology. Other participants



Living Streams Technical Training Workshop with curious Works, 19 November 2011, Liverpool City Library, photographs of the author.

agreed to contribute to the project by sharing their stories, poems, family photographs and artworks related to the river. A participant who is an art curator at Casula Powerhouse Art Centre offered to moderate submissions on the web site's 'Art' theme.

Two members of Liverpool Art Society, were the most active and enthusiast participants. They were thrilled about the possibility to share their extensive family photo archive which dated back to early developments in the rural area of Chipping Norton, where their family has been established since WWII, before the lakes were excavated for sand extraction. Everyone agreed to share their contacts and spread the word about the project.

9.4.2 Participation in action

After the training program was completed, a number of workshops have been organised independently by *Living Streams*' trainees. The structure of the workshops followed closely the aims, which were to inspire a creative response in the participants, teach skills, create original works, publish the works and transfer those skills. The workshops' themes and methods were left open and flexible for the trainees to brainstorm ideas within their group as well as to choose a topic and approach that suited the participants' interests, experience and creative inputs. All workshops were structured around topics of specific interest for the groups which varied among places and sites of significance, cultural and artistic practices, languages of the Georges River, people's life stories, environmental themes such as water, flora and fauna, wildlife, bush medicine and the sounds of the river and music. The workshops engaged participants with a wide range of activities from landscape painting, photography, music production, bushwalking, clay making and storytelling. Outcomes of the workshops took various forms such as stories, maps, visual artworks, music, films and performances, as illustrated below.

Miller Technology High School students, aged from 13 to 16 and coordinated by their art teacher Sally Atkins and clay artists Selma and Natalie at the Clay House located on the river at Casula next to the Powerhouse Art Centre, made a clay tiled map of the river, based on a Google map. Each student choose to represent a favourite place with an illustration of a local animal, plant or memorable story. The map worked as an aggregator of the students' different historical, personal and environmental interpretations of the river and is now displayed at the school. The workshop involved field research of the river's history and environment, and practical learning of clay making, painting and firing.

Primary school students aged from 7 to 9 from Chipping Norton School, which is located on the lake near the Georges River's environmental education centre, also took part in the laboratories at the Clay House. After learning about the different kinds of local fish in the river, students had to choose their preference and model it in clay. A shoal of colourful local fish made of clay is now living at the school as well as on the *Living Streams* web site.

Susan Stewart, a local visual artist and member of the Liverpool Arts Society participating in the technical workshop, organised *en plein air* painting classes at Chipping Norton's lakes with

15 passionate art and river lovers.

Street University ran a five weeks music production program for six young hip-hop musicians. Workshops integrated field inspirational trips to the river, as well as music composition and production. 'Going down the River' and 'Flow like the Georges', are now published under the 'Sounds of the River' stream on the *Living Streams* web site and contribute to the river's augmented reality experience.

Sonya Smith engaged her group of 12 Aboriginal women, 'Little Sisters', who had been producing art, multimedia and craft wares in Liverpool and its surroundings for the previous 18 months. Here is her recount of the workshop:

Following our picnic along the Georges River at the Casula Powerhouse Arts Centre. We all met at the Liverpool Women's Resource Centre for a creative workshop. After much discussion on what the river meant to us as a group, it was agreed that the river was life and renewal. At our get-togethers the women always have a yarn, a laugh and a sensational lunch. We discuss our stories, current and past. Also we have been playing around with the idea of how we could promote community involvement in "cleaning up" our local river ways. We are all really looking forward to next week, as now that we have agreed on our layout, the real process will begin.²⁰

Members of Liverpool Historic Society shared their memories and recorded their stories which are now part of the project's collective memory archive. Vicki Andrews from the Liverpool Historic Society recorded her memories of the river as playground:

Imagine as it once was: the 'playground' of Liverpool. From Liverpool Bridge to Casula, most children learnt to swim here. Trainloads of families would arrive at Casula station and spend the day picnicking and swimming, before heading home in the afternoon. Local families either walked or made the perilous drive down to the river across the railway line at the gates. A kiosk and playground operated on the site. The local churches held Sunday School picnics here. Swimming, a picnic lunch and ice creams followed sack races, egg and spoon races, three-legged races and age races. 70 years ago, there were still small islands in the river and the good swimmers would island-hop from Liverpool to Casula. Platypuses were frequently seen in earlier days. Barefoot skiing and other boating activities also took place here.²¹

Other spontaneous contributions came from the local community as word began spreading. Songwriter Cecil Cross donated a river song:

The River Song by The Cecil Cross Band

I'm just an ancient river, rolling right along

I'm part of the dream time, I'm part of this song

I'll pass by your towns, as my body rolls on
 My tidal brother helps me, become river strong
 I'm Georges River, rolling along, roll, rolling along
 I water your fields, I bring life to your town
 I hope all the people, just understand
 So treat me nice, don't pass me by
 Love me Georges River, don't make me cry
 Love me Georges River, don't let me die
 Big trees love me, on my river bank
 And fish from my belly, all fisherman thank
 And birds in my tree tops, I feed all the time
 All Sharing their booty, from the belly of mine²¹.

Music, songs, poems, stories, photographs and artworks began populating the rivers' new living streams of 'History', 'Art', 'Land', 'Water' and 'Music' as they shaped a new visual, aural and cultural geography. What could have appeared as marginal stories, which often cannot find representation in mainstream history and media, become here torrents of meaning, interpretation and a living presence. They generate different 'worlds' for people to explore as they embark on a journey using their smart phone for guidance. To people walking in the environment, stories, artworks, photographs, music and all the digital objects superimposed on the physical landscape appear as icons on their screens. Icons are dynamic and adjust according to the walker's position in space. When an icon is selected, a short text appears linking a text or image, or triggering a video from YouTube. This is how the river's stories come alive.

9.4.3 Augmented Georges River experiences

A boat tour took place on Saturday, 6 October 2012, with 107 people attending the event. The tour started at the Jetty Davy Robinson Reserve and made its way north to the Chipping Norton Lakes. The launch was held at the Georges River Environmental Education Centre. Here, songwriters and music composers Cecil and Moe played their original "River Song". Elias Nohra from Curious Works gave a demonstration of how AR worked. A traditional smoking ceremony was held to commemorate the event and a large representation of the project's participants, partners, supporters and the local Aboriginal community were all fully engaged in the event. The project was launched by Liverpool City Council's new mayor, Ned Mannoun, along with three other councillors and federal members.

The boat tour experience consisted mostly of mobile phone AR and content from the website. QR codes were also available. A screening presentation displayed videos and photos while a surround sound system mounted on the boat played oral histories and music. An audio/visual which featured recorded commentary of the river's and lakes' history and environment was timed to coincide with the boat approaching significant points of interest.

Rather ironically after my three year engagement with the project, I could not attend the project launch. A series of circumstances meant that I needed to relocate to Europe in June 2012 after seven years in Australia. I report here the comments from Elias Nohra from Curious Works who participated in the event and worked at the multimedia production on boat.

Report from technical developer from Curious Works, Elias Nohra:

Interestingly, there was an older demographic than I expected, and a lot of them did not have smart phones, but they loved the boat trip itself, the wonderful Smoking Ceremony by Uncle Steve, and the presentations in the community centre. I think a lot of them wanted to contribute to the website which was great! There was some live music by Cec & Moe that was fun too. We made a number of QR code posters which weren't used much, but I did help a number of visitors access content on their phones.

Finally - the Augmented Reality worked well. Only a handful of people actually loaded it up, but lots of people checked it out being demonstrated on the boat, and I had a bunch of screenshots I demonstrated during my presentation. People were impressed, it was a new concept to most.

I spent a fair amount of time speaking to the funding bodies' representatives and they were very pleased with the outcomes and the potential of the technology. On the downside – the weather was slightly gloomy, but held out, and the boat was extremely late (beyond our control) so much of the day was rushed...²³

Heritage Walk

The Living Heritage Walk started at the Liverpool Weir and ended at the old Woollen Mills site. Along the way there are eight points of historical interest which are linked to the *Living Streams* website via QR codes with extensive information, oral stories and photos. People taking a



Boat Tour and Project's launch at the Georges River Environmental Education Centre, Chipping Norton Lakes, 6 October 2012. Photographs by Cinzia Guaraldi

walking tour in an independent way can access the tour using a smartphone. In absence of a smartphone to play the AR, people could find a hardcopy map from the Council's Customer Service and Liverpool Central Library, with the written history notes to assist in giving them a real live history talk and tour.

9.5 Researching into 'Mobilities': Evaluation strategies

Research into 'mobilities' combines a wide range of quantitative and qualitative methods to investigate the mobile, distributed, networked, multi-sited and pervasive interaction of people with the environment. *Living Streams* addresses and creatively implements current research on 'mobile methods' that are concerned with the understanding of how various kinds of 'moves' such as place-making and mapping can produce social and material realities. It actively and performatively engages the 'mobilities paradigm', whose range of specific methods and techniques has been analysed by John Urry and Monika Busher in their exhaustive overview of mobile research methods. The authors examine mobility-oriented methods and approaches of exploring, capturing, tracking, simulating "the kinds of moving systems and experiences that seem to characterise the contemporary world"²⁴. These methods involve participating in patterns of movement while simultaneously doing research, and thus are concerned with the understanding of "how worlds (and sense) are made in and through movement"²⁵. As Busher points out, the range of methods that have been explored and experimented on by designers, artists and researchers in the field, can involve playful appropriation of prototype technologies, location-based gaming and design interventions, as well ethnographically informed participatory design. Tracking the multi-sited, collective action of participants might involve a series of methods ranging from mobile and video ethnography, mobile positioning using GPS tracking or walk-along. 'Go-along as ethnographic research tool', for instance, utilises walking as method of inquiry and field-work that actively involves researchers in doing walk-along interviews with project participants.

This case study focuses primarily on the conceptual and production stage of the design process and the strategies implemented to foster participation and community engagement. This is due to timing and resource constraints as well as the nature of research questions, investigating more specifically the implications of adopting participation as a design principle rather than looking in-depth at evaluation strategies for users' interaction. Application of the aforementioned mobile methods, however, and their enabling of a situated tracking and go-along evaluation of the participants' interaction is envisaged for a possible second stage of the project.

An analysis of the project has been conducted in April 2013 by Natasha Lay, a master's student at the University of Western Sydney and published on the 'Natashalayonline' blog "*Exploring the magic of the online world*" (see the Appendix for the full paper). Lay develops a thorough analysis of the project's target audience, user interface and AR experience, also adding her comments as a local resident:

I did find Living Streams to be a wonderful project, especially as I do not live too far from the Georges River. I wish more people, especially locals, were made aware of it. Chipping Norton Lakes in particular is such an asset to the community and something like Living Streams really highlights its historical value and cultural significance today.²⁶

In regards to access and use of technology Lay points out the negotiations and limitations involved in AR applications:

Given the context of the project and uncomplicated content it would seem that Living Streams is targeted towards a broad audience, but with a particular focus on primary and secondary school students, young adults, and the general local community with a keen interest in their surrounding environment or local history. It should be noted that as the augmented reality app is only accessible via smartphone technology, it can be assumed that the full user experience is only directly targeted to interested audiences with access to smartphones. This is limiting to the extent that those without smartphones are unable to enjoy the experience of the app at all and are limited to only viewing the website component of the project, without being immersed in the project at the actual site. (...) The app may not be suited to younger students who require supervision and are not able to enjoy the full experience.²⁷

In regards to the issue of a more specific audience from the local community accessing the project, Lay argues that:

The Living Streams application would be well-suited to interested secondary school students as the platform is accessible and engaging to young adults who are more comfortable with online technology. (...) The median age of the population is 37, which is only marginally lower than the NSW state average of 38. Given the high market penetration of smartphones in the 35-44 age group in Australia as indicated below, it can be assumed that a similar high percentage of those in Chipping Norton also own and use smartphone technologies. For this reason, the platform choice of an augmented reality application is considered well-suited to the general local community of Chipping Norton.²⁸

As far as user interface and navigation are concerned, Lay, based on her direct experience with the Living Streams AR application, notes that:

The app is designed well and allows users to either view the points of interest in camera view (with enhanced reality via the video see-through), or map view via Google Maps. The map view is particularly impressive, with pin icons indicating the location of the project sites of interest and the distance from the user. There is also an option to retrieve directions and a route in which to follow to reach the site in question. (...) The content of the project

is categorised in to five streams, being sounds, art, history, land and water. Upon selecting which story to explore by tapping on the item, users are taken to the description screen, where background information and further options are provided. (...) This process is the same for each text, which provides consistency and allows the user to understand the layout and navigation of the project.

The audio content hosted by YouTube could potentially be difficult to hear if there are other external sounds in reality that are louder than being projected from the phone. Additionally, a lack of captions or text means that the audio is not accessible to the hearing-impaired.²⁹

Examining the overall quality and flow of the content, Lay comments:

As the project is organised geographically, there is not an obvious flow of content, meaning that users can get disoriented with the amount and type of information downloaded without the ability to file it in any order. Overall, the quality of the content is above satisfactory. The content is produced by members of the local community, adding a certain authenticity to the project. The experience of hearing local recollections of river histories allows users to be enveloped by their natural surroundings, whilst at the same time experiencing the past and appreciating times past. Overall, Living Streams is a unique project that is simple but effectively captures the histories of a place that had not been considered before. Through the use of cutting-edge technology, the target audience is able to embrace the culture of the Georges River and contribute to the memories created by the historic environment, and explore the digital and online capabilities of online multimedia.³⁰

Highlighting the project's 'Best Bits', Lay reports the following:

- Community engagement and ability to contribute new or live content to the app or website.
- The project is a unique presentation of information about cultural and environmental history, which is considerably more engaging than plain text on a page.
- By engaging with local communities and a broader audience with experiential learning of the river and its living heritage, the project effectively fostered an attitudinal change within the local community on the presence and importance of water in the environment.³¹

9.5.1 Mobility and resilience as ways of making and keeping place

Resilience is the capacity of a system or an organism to interact and adapt to the changing external conditions of the environment. According to Goodall and Cadzow there is a twofold interaction between the geographical features of the Georges River and the resilience of its cultural environment. It was the mobility of the river which allowed Aboriginal communities to stay in contact with each other as well as to share knowledge and resources:

The river offered ways to 'make locality': to allow creative interactions which were shared

among Aboriginal people –both traditional owners and newcomers – to make the available spaces into places which carried meaning, identity and connections (...) The river also offered cultural resources because it had places which had not been conquered or taken over by completely by settlers. With its gullies and swamps it allowed continuation of traditional stories together with intertwining of new comers who were starting off a new life. (...) The geographical spaces and the qualities of the river would not have allowed such resilience if it had not been for the flexibility of Aboriginal cultures.³²

As Goodall and Cadzow explain, knowledge survival and cultural preservation were strictly dependent on the capacity to embrace and incorporate Aboriginal people from different areas and diverse local traditions within the river's geography:

The river – and the mobility it has sustained – has been an important contributor in both the links with the past and the capacity to look at the future. (...) To acknowledge the importance of mobility calls for a new way to understand recognition of Aboriginal heritage interests as well as ownership in public places. Rather than bounded to 'sites of significance' being mapped and protected by the National Parks and Wildlife Services, for example, it is the whole river here. Along with the capacity to move along it, which needs to be recognized.³³

Extending this notion of dynamic preservation to the river's contemporary multicultural heritage, *Living Streams* supported resilience and mobility through a participatory platform that encouraged dialogue and collaboration and at the same time cultivated the imagination to dwell on the possibilities opened up by digital technologies. Re-focusing on the river as a vehicle of knowledge and catalyst for change, *Living Streams* explored how mobility and resilience can sustain a place's diverse and unique heritage through the appropriation of new media tools for creative expression and by giving voice to the communities' multiple interpretations of the river's history and culture.

A series of qualitative and quantitative methods have been applied to explore new ways of inscribing, connecting with, and imagining, new river-scapes.

Quantitative methods were employed to gauge the impact and scope of the project across the broader community such as website and audience statistics and monitoring of media coverage. A combination of monitoring and evaluation methods have been applied to explore the qualitative and affective component of the audience experience with *Living Streams AR*, as well as to gather inspirational response and feedback from the audience regarding their interaction.

9.6 Sustainability and future directions

Sustainability can often be an issue for projects requiring constant technological updating, including the necessity to maintain a participatory platform with educational and cultural programs. Quite often the role of the local council is limited to initiating and launching the

project. However, its sustainability is key to producing significant effects and social changes. After the project's funding has ceased, who will take responsibility for the project, or build on it in order to keep it alive? There is often a clash between collective and individual responsibility involved in these projects. On the one hand local councils cannot be responsible for the project's maintenance and on the other hand communities might not feel obligated to further sustain the project, as in the case of *Living Streams* where the program lacks a specific connection to a cultural or linguistic group, or a community.

How do we negotiate the sense of belonging to a 'community' in the dispersed, migrational nature of our contemporary multicultural society?

Irit Rogoff argues that the curatorial, participatory, self-organised and the communal, have become increasingly important to contemporary arts and culture³⁴. What is the role of projects such as *Living Streams* in breeding a sustainable, creative and digital economy in Liverpool, by fuelling the creative capital and enhancing social participation? How can these projects keep their momentum and develop further? There is no direct answer to these questions, but rather a need to reflect on the social responsibility that these projects entail, as responsibility and sustainability are mutually entwined and supportive of one another. In participatory projects, who is responsible for curating content and fostering participation? What will happen to the 'streams of Georges', how will they be kept alive?

We can foresee possible future developments of *Living Streams* by examining current transformations in cultural institutions, such as museums and libraries. Reflecting on creative uses and the importance of technology in keeping and disseminating heritage, digital curator Susan Hazan explains the term 'crowd sourcing' as a description of a whole range of online activities in "which the public – that is you and I – are harnessed by others to do their work for them"³⁵. Hazan examines participatory practices within cultural industries, such as museums, libraries and public archives' harvesting of content that has been contributed by the public, declaring that "through their actions that they have the ability, motivation and time available to contribute, create and curate"³⁶. Addressing critics that consider the crowd source scenario a superficial example of our culture, Hazan argues that, in fact, crowd sourcing as a mass media phenomena can deliver quality outcomes and provide ways of expressing individual creativity as part of a collective intelligence.

Crowdsourcing can show a possible direction for *Living Streams* to head in over the future. Local institutions such as Liverpool Regional Museum and Central Library and the PowerHouse Art Centre should take the opportunity developed by *Living Streams* to engage and take advantage of the wealth of local skills, knowledge, talent, intelligence and availability to develop new opportunities of contributing, creating, curating and making culture.

How I personally envisage the project to evolve and transform is for *Living Streams* to become a permanent public interactive installation, a tangible sign physically marking the river and its landscape as a gateway to another space, the digital archive where memories are held. The forge I imagine for the installation is inspired by the work of the electronic artist Matthias Gommel *12 Films* (2002). This is an interactive artwork consisting of a series of hamper chairs with an

embedded audio system that works through bone conduction. The simple gesture of sitting on the chair and placing the arms on its armrests while cupping the ears with the hands activates the audio stream. Augmented by digital technology, the hamper chairs become ‘talking chairs’, objects that talk back to you. Sitting on a chair can imply different dispositions resulting in different activities such as that of being open and receptive to listen, start a conversation, waiting, resting, watching, being absorbed in contemplation and thoughts.

I imagine a series of ‘talking chairs’ of different heights – the little ones for children painted in bright colours - arranged on the river banks at the Light Horse Park, near Casula Powerhouse and Chipping Norton Lakes. I envisage the impact of an artwork of this kind to invite viewers and listeners to regard the world around them in a different way. Contemplating the water and landscape and at the same time hearing the stories that belong to that place can intensify the effect of being there and negotiate history and geography in new spatial, sensory and narrative forms.

- 1 Veronesi, F. & Gemeinboeck, P., 2009. Mapping Footprints. A Sonic Walkthrough of Landscapes and Cultures. *Convergence: The International Journal of Research into New Media Technologies*, 15(3), pp.359–369 and Veronesi, F. & Gemeinboeck, P., 2009. Disembodied Landscapes. *Performance Research*, 14(4), pp.74–80.
- 2 Careri, F., 2002. *Walkscapes* G. Gili, ed., Barcelona.
- 3 Townsend, A., 2006. Locative-Media Artists in the Contested-Aware City. *Leonardo*, 39(4), pp.345–347, p.347.
- 4 Thielmann, T., 2011. The place is the map: because of locative media an a-social map. In *ISEA- Beyond Locative: Media Arts after the Spatial Turn*, Istanbul. Available at: <http://isea2011.sabanciuniv.edu/panel/beyond-locative-media-arts-after-spatial-turn>. [Accessed July 10, 2013]
- 5 Shepard, M., 2011. Forget Locative Media. In *ISEA - Beyond Locative: Media Arts after the Spatial Turn*. Istanbul. Available at: <http://isea2011.sabanciuniv.edu/panel/beyond-locative-media-arts-after-spatial-turn>. [Accessed July 10, 2013].
- 6 Iverson, H. & Drury, S., 2011. Untitled (Mechanics of Place). *ISEA*. Available at: <http://isea2011.sabanciuniv.edu/workshop/untitled-mechanics-of-place> [Accessed July 10, 2013].
- 7 Arienti, S., 2011. *I Telepati*, Fondazione Zegna, All'Aperto. Available at: www.fondazionezegna.org/all-aperto/ [Accessed July 10, 2013].
- 8 Caraceni, S., 2012. From the musas to the giant squid. *Technoetic Arts: A Journal of Speculative Research*, 10(1), pp.11–16.
- 9 Goodall, H. & Cadzow, A., 2009. *Rivers and resilience: Aboriginal people on Sydney's Georges River*, Sydney: UNSW Press, p.25.
- 10 Goodall, H. & Cadzow, A., 2009, *Ibid*, p.25.
- 11 Rumsey, A., 1994. The dreaming, human agency and inscriptive practice. *Oceania*, 62(2), pp.116–130, p.116.
- 12 Conversation with Cinzia Guaraldi, from my notes, January 2010.
- 13 Gothe, J., 2012. Exhibition: Collaboration, Design and Country. Available at: <http://cfsites1.uts.edu.au/dab/news-events/eventarchive-detail.cfm?ItemId=29983> [Accessed July 9, 2013].
- 14 Kwon, M., 2002. *One place after another: site-specific art and locational identity*, Cambridge, Mass.: MIT Press, p.165.
- 15 Latour, B., 1998. On actor-network theory: A few clarifications plus more than a few complications. *www.nettime.org*, pp.1–14 Available at <http://www.nettime.org/Lists-Archives/nettime-1-9801/msg00019.html> [Accessed 10 July 2013]
- 16 Hemment, D., 2008. Dislocate – Art, Technology, Locality. *Paper presented at the ZAIM Symposium*. Available at: <http://dislocations.wordpress.com/symposium/drew-hement/> [Accessed March 20, 2013].
- 17 Careri, F., 2002. *Walkscapes* G. Gili, ed., Barcelona, p.20.
- 18 Rumsey, A., 1994, *Op.cit*.
- 19 Written comments from participants in the training workshop held at Liverpool Central Library, 18 November 2011. Retrieved from the audience questionnaire.
- 20 Sister for Sister Workshop, 30 May 2012, Casula. Posted by Sonya Smith on Living Streams web site Available at <http://livingstreamsliverpool.wordpress.com/category/land-2/>. [Accessed July 11, 2013].
- 21 Posted by Vicky Andrews, from Liverpool Historic Society on 30 September 2012. Available at <http://livingstreamsliverpool.wordpress.com/> [Accessed July 11, 2013].
- 22 Correspondence between Cecil Cross and Cinzia Guaraldi, 10 December 2011. The song was performed at the project's opening ceremony on 6 October 2012.
- 23 Correspondence with Elias Nohra, 10 December 2012.
- 24 Büscher, M., Urry, J. & Witchger, K., 2010. Introduction, mobile methods. In M. Büscher, J. Urry, & K. Witchger, eds. *Mobile methods*. New York: Routledge, pp. 1–19, p.4.
- 25 Büscher, M., Urry, J. & Witchger, K., 2010, *Ibid*, p.13.
- 26 Lay, N., 2013. An Analysis of the Living Streams Augmented Reality Project. *Natashalayonline' blog*. Posted on April 5. Available at: <http://natashalayonline.wordpress.com/about/>. [Accessed July 11, 2013].
- 27 Lay, N., 2013, *Ibid*.
- 28 Lay, N., 2013, *Ibid*.

- 29 Lay, N., 2013, *Ibid.*
- 30 Lay, N., 2013, *Ibid.*
- 31 Lay, N., 2013, *Ibid.*
- 32 Goodall, H. & Cadzow, A., 2009, *Op.cit.*, p.281.
- 33 Goodall, H. & Cadzow, A., 2009, *Op.cit.*, p.285-286.
- 34 Rogoff, I., 2013. Goldsmith College, Department of Visual Culture. Available at: <http://www.gold.ac.uk/visual-cultures/i-roff/>. [Accessed July 11, 2013]
- 35 Hazan, S., 2011. Cultural quality and crowd control. *InformatieProfessional*, 10, pp.28–35, p.28.
- 36 Hazan, S., 2011, *Ibid.*, p.29.

10 RESONANCES: PEOPLE, OBJECTS AND STORIES OF LIVERPOOL

The case study utilises an exhibition making practice to explore an integrative curatorial design approach to collecting, sharing, producing and representing local cultural heritage. Through aesthetic immersion and active participation, the exhibition engages visitors of Liverpool museum to generate their own interpretive paths across the collection and thus opening up new connections between objects, the people who donated them, the community and the place. The research investigates the implications of a participatory and fluid approach to sense-making in museums, which can negotiate the notion of heritage itself. This poses questions on how a local museum can address the quest for identity within a multicultural rapidly growing society, in which the divide between the older and younger generation is increasingly widening. I address in this chapter these questions as challenges informing my curatorial approach and expose and reflect on the strategies adopted and the obstacles and limitations I encountered.

10.1 Introduction

The case study develops a new permanent exhibition at Liverpool (NSW) Regional Museum. The museum was established in 1989 with the aim of preserving and promoting Liverpool's history and cultural heritage through historical collections, exhibitions and public programs. It comprises a variety of sub-collections reflecting the various military, social, industrial and commercial histories of the greater Liverpool district. The collections mainly consist of photographs, oral histories and artefacts from working, domestic and everyday life, industrial and military heritage, family history, migration heritage and personal memorabilia. Most of the items have been acquired through donations from local citizens and families. The collection is typical of a regional museum's historical collection, with a broad selection of social, commercial and industrial objects. When the project first started only a small part of the collection was on display in the exhibition *Stories of Liverpool 1788 to 1900*, which had been on show at the

museum since 1997.

Availability of funding from Liverpool Council in 2011 enabled the rethinking and refurbishment of the museum and exhibition gallery. The museum managers and heritage service coordinators, Paul Scully and Jo Morris, envisage that the new museum will be a place in which to explore a sense of belonging and community identity, celebrating Liverpool's Cultural Heritage and community pride. They were also concerned about inclusion and the representation of cultural diversity. Other requirements concerned more specific considerations about the exhibition space, in particular its flexibility in facilitating temporary exhibitions and social events, given that the museum is a venue utilised by many local organisations which hold seminars, workshops and re-creative activities.

Considerations regarding the exhibition design demanded a state of the art design which was aesthetically pleasing, with a versatility of furnishings and fittings in colours and materials suitable for future exhibition use and possible relocation to other venues and the integration of multimedia.

With this brief in mind, I began familiarising myself with the museum's collection. A significance assessment conducted in 2010 by Karen Coote and Jessica Marshall from Antiquities Conservation developed an inventory breaking down the museum's collection in terms of 'national', 'state' and 'local' significance. The study reported 39 items to be of national significance. Among these are historical records from a WWI concentration camp in Holsworthy, which complement the collection held at the Australian National War Museum. In addition, 45 items were considered of state significance and 28,661 of local significance. Most of the locally significant items required further research. They appear to be very diverse and heterogeneous, mostly comprising everyday objects, which are ordinary and of little significance when de-contextualised and separated from the story of the family or the donor. While embarking on a journey of discovery devoted to Liverpool's past and led by the objects donated by local citizens and families, I found a passage from Les Murray which steered my thinking and approach to the curatorial design:

10.1.1 'Strine Shintos'

Most people would agree, perhaps after some dispute about terminology, that something like a religious dimension exists in every human being. Some might want to call it a dimension of wonder, of quest, of value, of ultimate significance or the like. (...) Since the spiritual dimension universally exists in human beings, it has to be dealt with by them in some way or other. (...) I want to talk about some ways, 'natural ways' if you like in which Australians attempt to feed it, apart from the means of mediation offered by the churches. In the native region of Japan, deity (kami), sometimes individualised into deities of a polytheistic sort, is held to be present in all sorts of existing objects, in certain mirrors,

wells, rocks, swords, mountains, in special shrines and the like. These bearers of immanent divinity are called *shintai* (godbodies) or *miramashiro* (divine-soul-objects) and can be even living beings, such as the Emperor, and reverence is due to them.

(...) Speaking metaphorically, but not perhaps entirely so, it is possible to say that every people has its own peculiar form of Shinto, not perhaps as developed as the Japanese form, but consisting in all those intimately familiar, common properties and distinctive features in which what is felt to be the spirit or soul of that people somehow resides. Australia is no exception here; we have our familiar landmarks, such as Ayers Rock, the Murray River, the Barrier Reef, Sydney's Bridge and Opera House, our distinctive animals (...), gum trees, sheep stations, even such products of man's genius such as pavlova, distinctive idioms and Australian Rules Football.

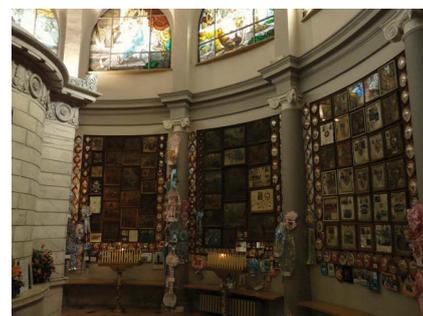
Some of our venerated sites and objects have the National Trust as their priesthood, others have conservationists and park wardens to be their guardians and supervise their rites. In many country towns, as well as the war memorial, there will be a special shrine, often tended by old people and open at erratic times, called the Folk Museum. This will contain the memorabilia of the community, mingling documents, portraits and objects of real historical interest with quaint stuff which the museum has had to accept and display on what I call the O'Hennessy Principle: refuse some prize piece of junk offered by one of the O'Hennessys, or any other long-established local family, and the whole clan will become the enemy of your enterprise.

The ability to laugh at venerated things, and at awesome deadly things -(...) may in time prove to be one of Australia's great gifts to mankind. It is, at bottom, a spiritual laughter, a mirth that puts tragedy, futility and vanity alike in their place.

It is probable that many Australians now spend



Ex Voto Chapel, Altötting, Germany,



Photograph by Davide Papalini, Ex voto chapel at Santuario della Creta, Castellazzo Bormida.



Photograph by Benjamin Mercer, Paper prayers tied on string at a Japanese Shinto Shrine in Kyoto, 2006.

more of their spiritual energy on the quest for national and communal identity that on any other theme. This is not surprising, in a country just far enough in time from its initial settlement for the themes its people brought from their original homes to have faded and become unreal in the minds of their descendants.¹

10.2 Rethinking agency and interaction: Heritage, community, objects and space

I began reflecting on what Les Murray refers to as the ‘spiritual dimension’, something common to all human beings, and the role of local museums in maintaining heritage alongside the challenges of making that heritage significant, not only to the local community, but somehow addressing the quest for identity within a society in rapid transformation and with an increasing cultural divide between older and younger generations. All this needed to be borne in mind alongside maintaining a playful attitude towards history and heritage which, as Les Murray points out, constitutes the ‘essence’ of Australianness.

I began thinking of the museum as a contemporary, secular ‘shrine’ and donations from citizens of Liverpool as offerings, *ex-votos*. The common aim of the donors to leave a memory and a trace of their time to the future generations of Liverpool unified this heterogeneous mix of objects with different provenances and derived from different eras. From this perspective the museum can be looked at as a contemporary reliquary. Using the metaphor of the *ex-voto*, I began exploring how this concept could transfer agency to people’s donations, giving objects a voice. I envisaged the power of the objects, displaced from their everyday and familiar context, as reaching a larger world, evoking in the viewer memories, imagination and perhaps triggering questions as to how these objects were acquired, how they were originally used, and why people held on to them and cherished them.

Ex-votos are votive offerings placed in a church or chapel



Photographs from the exhibition ‘Plural Stories’, at the Guatelli Museum, Reggio Emilia, Italy.

where the worshipper seeks grace or wishes to give thanks. Beyond religious and cultural differences, the most popular requests or wishes that people commonly ask to saints, gods, supreme beings, to others and to themselves concern the safety of their loved ones, their home, prosperity, health, help in overcoming difficult times, thankfulness for happiness and wealth, and support from the community. From this I began devising themes such as Home, Good Times, Children, Work, Difficult Times and Community as lenses through which to look at Liverpool's past, and how that past could come alive in the present. These themes perform here as hyperlinks opening up to visitors a series of different narrative paths which to explore.

Further reflections on the current discourse of material culture theory and object-led knowledge in artistic and design practices also contributed to shaping the curatorial strategies engaging objects as agents in the discovery of Liverpool's history. Material culture scholars are investigating interactions between objects and humans in ways that move beyond clear distinctions and fixed boundaries between the two, emphasising how objects have agency and how, in turn, humans are material. As Bill Brown argues in *The Sense of Things*: "Where other critics had faith in 'discourse' or in the 'social text' as the analytical grid on to which to reconfigure our knowledge about the present and the past, I wanted to turn attention to things – the objects that are materialised from and in the physical world"².

During the conceptual design stage, two exhibitions offered a perspective from which to look at the 'transgressive' potential of objects in challenging common notions of things as passive 'stuff' that need human imprinting.

Animism, exhibition and conference held in Berlin in 2012 explored the autonomous being of inert things, proposing the idea of an animated world of things as a provocation to the Western worldview. The exhibition posed questions on how to think of animism today, "in a time when the categorical distinctions between nature and culture, psyche



Muttering Hat by Kate Hartman, exhibited at Talk To Me, MoMA. The two "muttering" balls can be placed over your ears to 'extract' the noise of your thought process and translate it into physical world.

and material world are increasingly put into question”³. Asking ‘how do we distinguish things from beings?’, artists in the exhibition examined the line between life and non-life, the juncture and separation of nature and culture, of subjective and objective worlds.

The exhibition *Talk to me: Design and Communication between People and Objects*, an held at MOMA in 2011, examines the new terrain opened up by communicative possibilities within emerging practices in design by renegotiating relationships between technology, objects, people, emotions and embodiment. As the curator Paola Antonelli explains:

... whether openly and actively or in subtle, subliminal ways, things talk to us. Tangible and intangible, and at all scales—from the spoon to the city, the government, and the Web, and from buildings to communities, social networks, systems, and artificial worlds – things communicate. They do not all speak up: some use text, diagrams, visual interfaces, or even scent and temperature: others just keep us company in eloquent silence. A shift is occurring in the way we conceive, design and interact with objects in everyday life.⁴

The interaction between objects and collectors and the nature of their relationship – which is both material and affective – is described by Italo Calvino in the short story ‘The redeeming of objects’:

The collector is able to recognise even from the other side of the road in the window of the antique shop those pieces which are authentic from the rest of things with no value. Those pieces call him. What a reward redeeming a valuable object in whole its purity from the contamination of a degradable company! I often envisaged that if those things could talk, one would hear them expressing their gratitude. The bookcase would open its glass doors eager to receive books on its shelves, the armchair would hold you closely embracing you, the desk would stretch out offering fresh inspiration to your pen.⁵

According to Calvino, “human essence is the trace man leaves in things, being these a masterpiece or the anonymous product of its time”⁶. A civilisation, he argues, is made up of the continuous circulation and dissemination of objects and things, creating a sphere of signs surrounding us. Man is somehow defined by the man-object relationship and can also be understood as ‘man-plus-things’: the human identifying with things, and being infused by their matter. Calvino goes on to examine the logic behind collecting as a way of bringing unity and homogeneity back to the dispersal of things:

This triggers the mechanism of possession (or the desire of it), always latent in the relationship man-object. Such relationship, however, doesn’t end with acquiring the object, with its possession. Rather, its goal is found in identification, recognising oneself in the object. And possession plays an important part in fulfilling this goal, as it enables a

prolonged observation, contemplation and symbiosis.⁷

Delving into this relationship with museum objects, I allowed them to guide my discovery of Liverpool's history through the relations objects opened up with people's life stories and with other places and cultures entwined with their biographies. I began conceiving of objects as animated, possessing agency, a vibrating matter resonating from their time into the present. From these preoccupations the title of the exhibition emerged and aimed at exemplifying the power of vibration, moving simultaneously from subjects to objects, resonating between internal and external worlds, private and public spheres.

10.3 Inspiration from the community

Prior to developing a proposal for the exhibition, I was involved in a consultation study engaging communities with heritage and exhibition practices in Liverpool. The study aimed at gaining an understanding of what people considered as 'heritage', the kind of expectations and vision they had for a local museum, the things that motivate them to visit an exhibition, their experience of museum visits and any other inspirational response that could be useful in this conceptual stage of the design process.

A number of associations ranging from youth to artists' groups, senior members of the local historical society, to culturally and linguistically diverse organisations have been engaged in order to gauge the most diverse possible response in terms of knowledge of Liverpool's heritage, background, age and interests.

The majority of respondents cared about what they recognized as their heritage. Heritage itself is a rather elastic notion, extending to both the heritage and the culture of provenance for the respondents who immigrated to Liverpool from a foreign country, as well as the local heritage of Liverpool and its industrial, military and rural past, together with the interests of other cultures and communities populating Liverpool's multicultural milieu. When asked to suggest topics for future exhibitions in Liverpool, respondents recommended themes related to religion, racial issues, war and current affairs. Many valued the importance of heritage practices for the preservation of sites of significance, heritage buildings, parks, woodlands, the landscape and the river. The need to increase recognition of Aboriginal culture and its connection with Liverpool's heritage was remarked on by many respondents. Overall, people were concerned about the quality of exhibition space, the way the sound and light create ambience as well as the level of information delivered. A carefully designed, pleasant exhibition space appeared to be a significant factor affecting the museum visiting experience. A quiet and soothing atmosphere appeared to play a significant role in the experience. Sound was also revealed to be an important component, as well as lighting and spatial arrangement with appropriate seats to enable spending more time in the exhibition space. For the majority of respondents visiting an exhibition is a social activity. Most of them emphasised the importance of events as catalysts of engagement, acknowledging the importance of launches, tours, lectures and other special events in motivating them to visit an exhibition. When asked if they found it

appropriate to touch objects in exhibitions, the majority of respondents were concerned about objects deteriorating and suggested more traditional ways of display.

Drawing on people's responses, the following recommendations have been teased out in order to inform future exhibiting practices and improve engagement with Liverpool communities and museum audiences.

Among the issues raised were that the exhibition should –

- have an event-based component: public launch, public talks, link to a festival, celebration, community, music, art event.

- offer guided tours with local experts to deepen the knowledge on a topic as well as delivering the exhibition content in a more interactive and personal way.

- provide tours in different languages to improve accessibility and engage a culturally and linguistically diverse audience.

- improve exhibition communication via a multiplatform including web, social media.

- include an 'experiential' component for young people to be engaged and motivated to visit the museum as suggested by the respondents: use of 3D experience, interactives, sound and/or music.

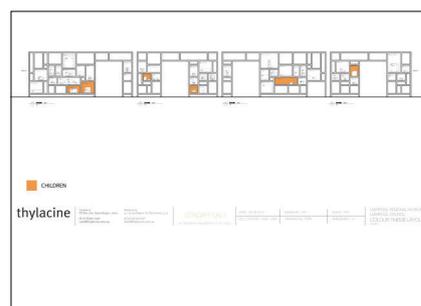
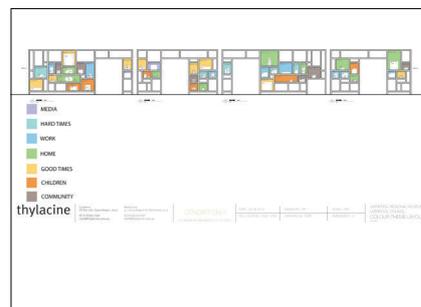
10.4 Curatorial design strategies: Interaction and Engagement

In the following paragraphs I quote the exhibition text to introduce the strategies developed in the curatorial design.

Resonances: objects, lives and stories of Liverpool

Resonances takes you on a journey to discover Liverpool's rich heritage through the objects that citizens and families donated to the museum over the years.

Objects shape who we are, the people we engage with, our attachment to places, our values and ideas. We can only speculate about the meanings and significance that an object held for a person or a family. The common intention of the donors to leave



Exhibition display with all themes and children's path. Courtesy of Thylacine Design



Objects on display at *Resonances: Objects, Lives and Stories of Liverpool*, Liverpool Regional Museum. Photographs courtesy of Liverpool Museum and Heritage Library

a trace of their time to the future generations is a running thread, unifying the variety and diversity of what can appear as an eclectic mix of artefacts, photographs and oral histories.

Resonances explores over two centuries of Liverpool's history through the connections that objects open up between the people who donated them, the community and the places they lived in at a point in time. These connections are for you to search for, and engaged with, as you interact with the extensive collection of more than a hundred objects on display. Your interest and curiosity about how the objects were originally used, why people held them and cherished them, are that which makes the objects resonate, giving them a voice.

An environment that is responsive to your movement and choices enables you to find a path through six different journeys. These represent the most common requests people ask when donating an ex-voto, that is, an offering given in fulfillment of a vow or in gratitude for a benevolent action. The museum is furnished with the offerings that people donated through time, their private keepsakes and memories are now part of a collective heritage.

Resonances organises people's donations around six themes: Home, Community, Children, Work, Good Times and Difficult Times. Choosing a theme you embark on a journey to explore Liverpool's past, through the events, people and places that shaped Liverpool's history, culture, social and economic life. Each journey is a unique experience and discovery. Let the objects tell you their stories.⁸

10.4.1 Resonances: objects, lives and stories of Liverpool

The exhibition proposal was centred on the experience of history and engagement with objects. It was conceived as an aesthetic immersion and active participation of visitors in a narrative space, generated by their interactive paths exploring objects and the connections they opened up with



Objects on display at Resonances: Objects, Lives and Stories of Liverpool, Liverpool Regional Museum. Photographs courtesy of Liverpool Museum and Heritage Library

people's life stories, heritage sites, significant events in Liverpool history, celebrations and everyday ways of living.

The curatorial design focused from a very early stage on the inclusion of interactives which could enable the creation of personal journeys and discoveries through interaction with physical objects.

From a spatial point of view, the exhibition space was conceived of as flexible and adaptable as possible in order to accommodate a growing collection by inviting additional donations to the museum through the exhibition.

Interaction between visitors, objects and the responsive exhibition space was conceived of as spontaneous and intuitive as the everyday activities involved with handling objects, flipping through the pages of a book, opening a drawer, touching a surface. The idea behind a natural and spontaneous interaction was to serve both elderly and young audiences, the main target of the exhibition, and in ways that were both intellectually stimulating and playful, suggesting that if they interrogated the objects these would somehow talk back to them.

The idea of using everyday objects to mediate personal stories was also intended to enable the encounter between the private and public spheres, with memories and keepsakes moving from a private, homely setting into a public display, and hence mediating a similar degree of intimacy and familiarity.

The image of a cabinet linked the sense of a domestic interior to the possibility of displaying a rather eclectic assemblage of things, which was meant to comprise both digital and material records, such as oral histories, videos and photos interspersed in the collection items on display. For instance, kerosene lamps displayed in conjunction with oral histories from Hammondville residents – a Pioneer Homes settlement near Liverpool established to help families during the Great Depression – were meant to speak beyond the objects' evidential value as items from a time when households didn't have electricity, thus mediating the private stories and memories of the Hammondville community, together with their values and sense of belonging.

The exhibition experience for children was conceived of as a sensory-based, playful activity, located in the lower sections of the cabinet, at children's height. Objects pertaining to the thematic paths and with a playful or educational component were displayed within children's reach, and these comprised of objects that might have been found odd or of little historical significance, but which could enable a sensorial experience of touching and smelling through operable boxes and frames including, for instance, the soap bar donated by the Trimarchi, one of the first Italian immigrant families that settled in Leppington in the 1930s. I imagined children touching the soap by opening the display case and experiencing its smell and texture. With regards to the clothes and fabrics on display, when possible I suggested making 3D textile prints of the fabric to allow interaction through touch. Old radios, which are a consistent element of the museum collection, were proposed to be used to interactively tune into a story or music. Most of the operable and physical interactives conceived at this stage could not be deployed in the exhibition final stage due to compromises that had to be made to keep within budget.

The importance of oral history was very significant in creating a 'context' to the objects, helping to construct meaning and transfer the mood of the time. Among the extensive oral history collection archived by the museum and library are several community oral history projects such as the Moorebank Women Oral History Project involving a group of local residents of Moorebank telling about their lives between 1920 and 1960. These are firsthand accounts of domestic, working and social life in Liverpool, encompassing memories about the wars, the Great Depression, the floods affecting the area, as well as the sense of community and social activities. The following are a recounting from a participant in the oral history project:

I used to go down the creek to wash with the children, I used to call them the 'army' I'd say: 'rightho the army stand up now, we've go to march down the creek'. I'd carry the copper because we'd have to boil the things, it was all done in the creek water because I only had the tank for house drinking water. So along come the troops, one, two, one, two. They'd all be carrying something. One would have a bag of pegs, we'd go there and take a cut lunch. Sandwiches for them and we'd have that and boil a billy and it was like a day out, a picnic.⁹

The curatorial approach weaved oral history together with the experience of physical objects in order for visitors to make their own sense and meaning. Participation was adopted as an integral part of the visitor experience and encouraged by open questions directed to the audience within the exhibition text and objects labels. Visitors were invited to share their comments and thoughts on a topic or simply to reflect on how the topics presented resonated within them, as illustrated by the text introducing the theme 'Home':

Home is an idea, a concept, a place where we feel



Concept Design, 3D model. Courtesy of Thylacine Design.

safe, a place to which we belong. Our everyday objects, often overlooked as trivial, help exploring the ties between people and places and how these changed over time. Objects tell about our space, ourselves and our stories. And you? Where and what is 'home' for you?¹⁰

10.4.2 Approach to exhibition design: Wayfinding – sorting themes and stories

From a very early stage the curatorial design was developed in a collaborative manner with the exhibition designers Caolan Mitchell and Penny Hardy of Thylacine Design. This is how they describe their approach to the exhibition design and visitor's experience:

We approached the design of the exhibition by initially thinking about the 'ordinariness' of the collection and the idea of sorting the objects into themes. Regional museum collections are often dense, varied and disparate. They are generally charming and nostalgic, but they can also be overwhelming and confusing in their density and mass. We wanted to develop an exhibition approach that displayed the broadness and ordinariness of the objects, while also creating a layer of sorting by which the exhibition and its stories could be interpreted.

We aimed to design a space that would increase interest in the collection, highlight the themes and stories underlying the objects, and encourage the visitor to explore the collection and interact with it. We felt that it was also important that the objects remained within the context of the Liverpool community, keeping a sense of connection to their original use.

We started looking at domestic joinery from the 1960s and 70s, with the idea that we could use forms such as shelving and bookcases to house the collection, and reference the 'everyday'. We decided to create a 'room within a room', that would sit inside the main footprint of the space, allowing visitors to walk both through it and around it to view objects placed in forty double-sided showcases.

Our approach from there was to design in interactive key, where visitors could select one of the themes by touching an image of the palm of a hand next to the area text for each of the six themes on the outer wall. This activated a touch switch, which sorted the collection using light to highlight the objects connected with that theme, while all the others dimmed down into the background. The visitor could then view all the objects within that theme and gain an understanding of the connections between them. After a period of time the display resets to illuminate the mass collection in perpetration for a new selection. The visitor could sort the collection as many times as they wished.¹¹

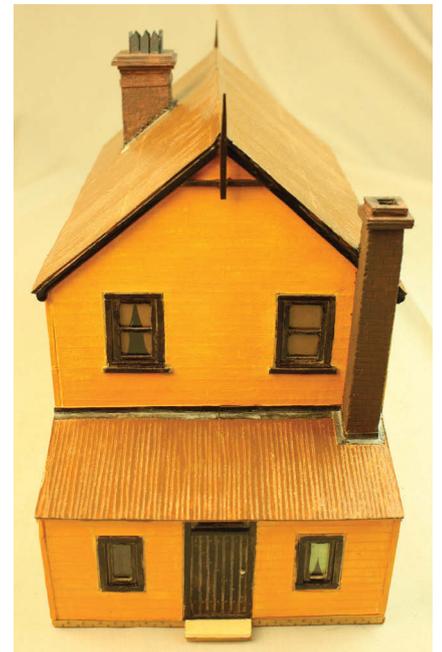
10.4.3 Imagining the visitors' experience

Compromises had to be made to this very ambitious curatorial and design proposal. However the production stage involved negotiations to determine the leading strategies and driving concepts, such as the interaction mediated by touch, the interweaving of physical objects,

digital media and oral histories, as well as the engagement of visitors as agents of the experience, have been maintained close to the original idea.

When developing the design and working on the selection process, this is how I imagined the visitor experience:

I enter the gallery. The room is dimly lit, my attention immediately attracted by another room, its walls, like cabinet walls, are made of stacks of glass cases, all illuminated. In the cases are objects, of every kind, running throughout the room. Objects are an eclectic mix of disparate things, from jockey boots, to kitchen utensils, old photographs, hand written notebooks. There is a baby bonnet, a black cape, on the upper cases there is a back and gold dress, high heeled shoes, a maquette of a house. I first walk around the room from the outside, then enter inside trying to make sense of this colourful assemblage of things. There are many objects one would not expect to see in a museum: a box of baking powder, a knife, a sewing set... They are all different in size as are the cases to fit the objects, some of which are empty. I imagine children crawling through them, going in and out of the room. Not today, though, I am the only visitor. I have the whole space to myself. I have a strange feeling as this colourful mixed of things clashes somehow with the silence enveloping the room. One object attracts my attention. I take a closer look. The label reads: 'Ammunition pieces'. Description: Eleven small ammunition pieces of various sizes from Holsworthy. The pieces arrived in an envelope with a text: "Holsworthy, Ask Colin Macauley 'Friend' on the front. Part of the Hammondville collection". I don't know much about Liverpool, I don't live here. I'm a first timer to the museum and only passed by on my way to the South Coast. Therefore names like 'Holsworthy' and 'Hammondville' are rather obscure to me. I imagined those bullets to be related to war time, so I turn around and read on the text on the gallery wall:



House models from the Hammondville collection now on display at LRM. Courtesy of Liverpool Museum and Heritage Library

Difficult times: Liverpool paid a high tribute to the wars sending its young men to serve in the Army abroad as well as hosting military camps in the region since the early 1900s. (...) Selective internment was organised, with the largest camp for German internees at Holsworthy in 1914. With approximately 5000 inmates at its maximum capacity, the camp became a small German village with a local bakery and theatre. Prisoners were released in 1919. (...) George Cantello, pilot of the United States Army Air Forces, died in a plane crash in Hammondville on the 8th of June 1942 while fighting in the defence of Sydney.

As I touch a switch on the wall something happens, the room becomes darker, only a few cases are now illuminated. I have to walk around the room to search for them. There, I find the ammunition pieces, and next to them a keystone of Holsworthy camp – I didn't know it was one of the largest camps in Australia – in the corner over there is a book of handwritten verses, I imagine it belonged to a camp internee. I learn about George Cantello, the American pilot who died in a plane crash in Hammondville in 1942 while fighting in defence of Sydney. In the corner of the cabinet is an ottoman and head set. While contemplating the light patterns that the objects make on the walls I sit and prepare to listen. A voice of a woman, quite elderly, begins to recount: "That night we knew something was wrong. A plane came and made a full circle, then hit a tree. That was the



Exhibition opening, 28 March 2013. Photographs by Thylacine Design.

night the Japanese came to Sydney Harbour". A man, on the same night: "I remember, the noise, the smoke and soot". Other stories tell of children memories finding bullets in the fields around Hammondville, and hiding them from their parents as a form of special treasure.

These stories help making sense of the objects, but they are also very powerful in their own right. I wonder if each object could speak, what it would say... After a while all cases become illuminated again, the trace of my story disappears. I'm intrigued by ordinary objects like cake tins, biscuit canister, a floor polish wax, an apron. They all come from Hammondville, so I decide to know more about this place. "Hammondville", I read in the text on the wall behind, "was a new settlement initiated by a visionary man Reverend Hammond. Hammondville Housing Scheme provided the opportunity to purchase a home offering a new start to hundreds of families between and after the wars". I search for more objects belonging to Hammondville's homes, I have to look up, down, all around, inside and outside the room. There is another chair and hear set to immerse in the stories. I laugh at the story of a woman telling the recipe of her 'depression cake': "I used to make it with whatever I had. Sometime there was an egg and sometimes there wasn't. I called it the 'depression cake'. They used to ask me for recipes. But there was no recipe, you put in whatever you had". I lingered over stories of picnics, fishing trips and swimming in the Georges river, "There were sharks there" some recalled, "We all learnt to swim at Casula, the river was our backyard". A slideshow on the screen above told similar stories, blending together aerial views of the river, photographs of natural reserves, family photos of kids swimming in the river, diving from barges and boats. There are also images of the floods. I read they were recurring in the area. Photographs show volunteers helping people out of their homes. Images of the floods are dramatic, water is everywhere, the land completely drowned. I felt pride listening to a story of a woman telling of her experience when the flood came in 1956: 'I never thought of flood in my life. It was the 1956 flood. It was a disaster. The Progress Association collected a lot of money to help. I felt I could do something. I was in the Union of Australian Women. With the help of some of the ladies I organized a few washing machines and we went around collecting washing from about 20 families. We borrowed the neighbours' clothing lines for drying. We ironed them all and brought them back'¹².

Walking, searching, listening, sitting in silence, sorting themes and exploring where the light patterns took me next, that was my experience at Liverpool Museum. I wonder if next time I come here there will be new things to see...

The exhibition opening on 28 March 2013 created many expectations both on the side of us as curator, designers and museum managers regarding how the audience might have received the new display, as well as on the general public who were eager to visit the museum months after the last exhibition was dismantled. Overall 200 people attended the event. It was the first

time that the display and interaction design had been tested with a real public audience. The most elderly in the audience required assistance and close guidance in order to understand how touching the sensitive surfaces on the walls would illuminate the objects in the cases. Adjustments to the way the lighting system illuminated a specific active theme, consequently illustrating the corresponding objects was found to be crucial in order to facilitate the interaction. The need for a display inside the cabinet, showing the activated theme, thus avoiding people looking back at the walls, was also found to be important to make the experience flow in a more natural way. The following are some comments captured on the flow at the opening:

... I feel very proud

... This object belonged to my family

... I'm glad to see the collection living in the museum, not a temporary exhibition with objects belonging elsewhere¹³

The photos on the side show the exhibition displays and visitors' interaction during the opening. In-depth evaluation studies intended to gauge a comprehensive response and insights of the audience experience are scheduled in the next months. These will take the form of exit questionnaires at the museum, 'have your say' stations integrated within the exhibition cabinet, as well as online surveys and posts on the museum's website.

10.5 Reflections on interactivity, narrativity and spatiality

Compromises had to be made regarding the way interaction was developed, thereby limiting the number of themes used as the key-topics to navigate the collection. This was due to restrictions on the funds available as well as a lack of technical expertise on interactivity in the design team. Design solutions therefore were more focused on physical features of exhibition display, such as props, lighting and spatial arrangements.

The concept behind this very simple way of searching and retrieving data from the collection was to think of the objects arranged in a spatial 3D database where a simple keyword search enabled the filtering of records and retrieving the associated data.

I envisaged the idea of the spatial database to be taken further, allowing more participatory interaction between visitors and the collection both in the gallery space and online. This is dependent on ways of indexing the collection. Given a database of spatial objects, each entry can be associated with descriptive information represented in the form of keywords, such as the object's title, the owners' name, provenance, date of manufacture, material, related themes/topics and events, and links to other records in the database.

Tagging objects and allowing for multiple searches can generate a potential endless generating of narratives using the spatial database as their source. Database searching can be performed in the exhibition space, as well as online, in a number of different ways, from the most obvious typing in of a keyword on a keyboard, or using sorting cards with RFID which would represent

significant people, places, topics, and events in Liverpool's history in order to use them as 'entries' to the collection.

Taking interaction further we can imagine visitors leaving tracks of their performative searches of the collection for others to explore. In this way visitors can chose to browse the collection using a character, a key word, a theme or timeline or following someone else's route, and at the same time tagging objects and leaving their comments.

10.5.1 Sensorial explorations: Oral histories as objects

Andrea Witcomb's recommendations also concern reflections on the relationship between visitors' sensorial experience and its effects on subjectivity: "the body of the visitor and by extension their consciousness is thus inside the scene becoming part of it rather than the traditional perspective of viewing the scene from the outside as if through a frame"¹⁴. This triggered a reflection on alternative approaches to the integration of media and oral histories in a second stage of *Resonances 2.0*.

Multimedia stations, now interspersed among the cabinet display cases were meant to be integrated within each case, thus enabling a more spontaneous way of retrieving oral histories triggered by sorting action, proximity sensors and/or touch. In the current display, oral histories create a contextual background to the objects, but they are not fully integrated in the visitor experience, somehow failing to create immersion as access is via head sets and a listening station.

In thinking of a second staging of the exhibition I imagine oral histories to be treated *as* objects, material things to be searched for, explored in their materiality, the texture of people's voices, the height of their pitch, the weight of their tone and mood, the length of the story.

This approach draws on the lesson learnt from the experiments on the physical and affective components of *Belongings* as performed and the digital overlay and augmentation of real objects in *Living Streams*. I imagine *Resonances 2.0* performing ways of interacting with objects that renegotiate a narrative approach of visitors as interpreters, enabling a more spontaneous retrieval of information and sensorial engagement with both physical and digital objects.

Discussing the twofold nature of objects, their materiality and informational component, Sandra Dudley suggests that the potential of the object itself to "produce powerful emotional and other personal responses in individual visitors as a result of physical, real-time, sensory engagements" challenges dominant views in both the academy and practice, in that "museums are about information and that the physical object is just a part – and indeed, not always even an essential part – of that information"¹⁵.

As Dudley points out, these views tend to see the object as "useless and redundant" or at least only "a part of the information-object package"¹⁶. Ross Parry's research into digital heritage shares this view, conceiving of the physical thing as one element, "a molecule of interconnecting [equally important] pieces of information, only one of which is the material object"¹⁷. Dudley's argument challenges the idea of seeing "physical objects as 'nothing' without the information

attached to it, and is properly defined in the combination with the information that somehow completes it"¹⁸. Supporting Dudley's argument I outline in the next section other curatorial design strategies that share the same concept of *Resonances* in the way narratives and mutual interactions between people and objects are conceived and developed.

10.5.2 Engaging the material world

The concept of 'object knowledge' and the mechanisms through which objects exert agency underpin the approach to curatorial design of Kirsten Wehner and Martha Sear curators of the exhibition *Australian Journeys*. Contrasting authoritative paradigms of exhibitions as educational and informative, Wehner and Sear propose a way of thinking about exhibitions as an "open, performative environment in which meaning, or rather multiple meanings, are created as visitors observe and interrogate displayed objects and recognised and construct relationships between object elements, drawing upon both new and known knowledge"¹⁹. This, according to the curators, relates to what Paul Carter refers to as 'material thinking', that is "the work of producing meaning through bringing objects into relationship with each other"²⁰. Negotiating an object-centred approach to exhibition making in relation to the heritage of migration facilitates, according to the curators, "connect[s] visitors through object knowledge to an imaginative engagement with the transnational experience of historical and cultural others. (...) As people engage with objects, they understand through them the material conditions of existence, and as they act on that knowledge, objects have effect in reproducing and reshaping the world"²¹.

- 1 Murray, L.A., 1982. Some Religious Stuff I Know About Australia. In D. Harris, D. Hynd, & D. Millikan, eds. *The Shape of Belief: Christianity in Australia Today*. Sydney: Lancer Books, pp. 13–27, pp.13,14,15,16,17, 18.
- 2 Brown, B., 2003. *A Sense of Things: The Object Matter of American Literature*, Chicago: University of Chicago Press, p.3.
- 3 Albers, I. & Franke, A., 2012. Animism, exhibition and conference. Available at: www.hkw.de/en/programm/2012/animismus/animismus_68723.phpveranstaltungen_68723/veranstaltungsdetail_71987.php. [Accessed July 11, 2013].
- 4 Antonelli, P., 2011. Talk to Me: A Symposium. *Inside/Out A MoMA/MoMA PS1 BLOG*. Posted on October 12. Available at: www.moma.org/explore/inside_out/author/pantonelli [Accessed July, 10 2013]
- 5 Calvino, I., 1984. La redenzione degli oggetti. In *Collezione di Sabbia*. Milano: Garzanti, p.122.
- 6 Calvino, I., 1984, *Ibid*, p.121.
- 7 Calvino, I., 1984, *Ibid*, p.121.
- 8 Veronesi, F. 2012, *Resonances: People, Objects and Stories of Liverpool*, Liverpool Regional Museum. For the full exhibition text and objects selection see the Appendices.
- 9 Interview transcript from the Oral History Project of Women in Moorebank, Liverpool Heritage Library. Excerpts of interview are included in Burke, C. & Brooks, B. eds., 1991. *Oral History Project of Women of the Moorebank, Chipping Norton and Hammondville Area*, Liverpool NSW: Liverpool City Council.
- 10 Veronesi, F. 2012, Exhibition text. See Appendices.
- 11 Correspondence with Caolan Mitchell and Penny Hardy of Thylacine Design, February 28, 2013.
- 12 Interview transcript from the Oral History Project of Women in Moorebank, *Op.cit*.
- 13 Conversations with audience members at the exhibition's opening, Liverpool Regional Museum, 28 March 2013.
- 14 Witcomb, A., 2007. An Architecture of Rewards: A New Poetics to Exhibition Design ? *Museology e-journal*, (4), pp.19–33, p.20.

- 15 Dudley, S., 2012. Materiality Matters: Experiencing the Displayed Object. *UM Working Papers in Museum Studies*, 8, pp.1–9. Available at: www.ummsp.lsa.umich.edu, p.4-5.
- 16 Dudley, S., 2012, *Ibid.* p.5.
- 17 Parry, R., 2007. *Recoding the Museum: Digital Heritage and the Technologies of Change*, London: Routledge.
- 18 Dudley, S., 2012, *Op.cit.* p.5.
- 19 Wehner, K. & Sear, M., 2010. Engaging the material world: object knowledge and Australian Journeys. In S. Dudley, ed. *Museum Materialities: Objects, Engagements, Interpretations*. London: Routledge, pp. 143–161, p.151
- 20 Wehner, K. & Sear, M., 2010, *Ibid.*, p.154.
- 21 Wehner, K. & Sear, M., 2010, *Ibid.*, p.155-160.

11 REFLECTIONS

Practice as a medium of study has been investigated by Ranulph Glanville and Leon van Schaik in the introduction to the RMIT doctoral programme. Inquisition and introspection into one's own work are seen as a means for reflective research. The relationship between theory and practice is ongoing and the two constantly inform one another. As van Schaik puts it, "the process involves abstraction of themes, testing and re-abstracting – a distillation"¹.

My method of inquiry through practice closely followed this process whereby theory performed as a lens directing a specific 'light' onto the practice and reflections from practice instilled by new insights on theory. This moving back and forth between theory and practice resulted in an interplay that shares similarities with dance, as theory and practice are both involved in a co-creative research movement.

In this chapter I will attempt to shift and reframe the performative, embodied knowledge that has been produced in the case studies, by systematically breaking down the 'movements' flowing in the practices – which are both conceptual and practical – and reflect on their transformative potential for the theories of museology, curation and design, focusing on the formation and articulation of 'zones of contact' that curatorial design practices in the multimedia museum can enable.

11.1 Moving between theory and practice

Mark Bradford and Aukje Thomassen have explored the martial art of Aikido and the conceptual possibilities of combining theory related to it with specify design knowledge, suggesting that the creative movement enacted by Aikido can inform the enabling of knowledge exchange in creative research². In a similar fashion to the way in which Aikido is centred on relationships, responsiveness to others and the environment, problem solving and capacity to adapt, so the process of creative research generates actions and strategies that are integrated with understanding and broader theoretical questions.

My research started from an initial interest that arose from practice, that of engaging with memories and experience of migration in ways that were embodied and performative. This opened up a broader set of questions regarding ways of knowing the world and the other, the kind of knowledge that bodies, senses and the material world can enable. The theoretical framework formed the interpretive context of the research, charging the practices and somehow creating an 'electric field' inside the practices. This chapter aims to reflectively and systematically open up the connections and flows within this field by focusing on the role of design, the strategies adopted and their testing in practice, as well as in mediating difference and enabling contact between cultures, identities, past and present and facilitating participation and embodiment.

11.2 Designing – and performing in – the contact zone

Reflecting on the research practices and their findings helps to understand from a situated perspective the concept of the 'contact zone', in both its conceptual as well as material dimension, the forms and shape it can take, and the interactions it enables. Reflecting on practice aims to explore in more depth the strategies adopted in order to extend the zone of contact between participants and the histories and subjects represented in the museum, and amplifying this zone by integrating participation within the design process as well as reflecting on its transformative potential, on both a subjective level as well as a social and cultural basis. Understanding the exhibition space as a zone of contact and exchange between subjects, objects and space contributes to shed some light on the complexity of an integrative approach to curatorial and design processes.

Museum spaces are, according to Stephen Greenberg, designer and practitioner in the field of interpretive and exhibition design, becoming more dynamic and experiential due to the 'explosion of new technologies' and the changes of audiences expectations and increased media literacy³. In order to design these spaces, which are moving away from being static and monumental to being theatrical and performative, there is a need to change the way designers work. Based on his practice and experience in the field, Greenberg outlines how contemporary theatre practice can inform the discourse in space-making in the museum, by acknowledging that creative space and cultural environments in museums are essentially audiences' spaces, where learning, imagination, inspiration, contemplation and physical exploration can take place.

Both the concept and practice of 'experience-making' in museums are a relatively recent phenomenon, which started in the 1970s with the inclusion of display and installation art in gallery spaces. In this sense museum spaces have been radically transformed by technology from being "static architectural spaces toward dynamic mediated experiences"⁴. This does not apply only to museums but to all environments that can be transformed by media. This poses expectations regarding the quality and level of experiences that the media-literate audience expected to have when coming to a museum. The audience expectations relate to the kind of connections that audiences expect to be able to make between artefacts and their stories, "just

as documentaries do"⁵, as Greenberg puts it. Moreover, this results in a transformation of curation, architecture and practices towards more "holistic experience, where artefacts and architecture are suffused as part of that"⁶.

Questions are posed regarding how museum practitioners – including designers, architects and curators – can learn to make these experiences: "Who are these experiences for and how do we judge their success or failure?"⁷. This entails, according to Greenberg, a change in our thought patterns: "We need to think of spaces in a different way, leaving behind our old habits of monumentalism and permanence, in both buildings and their content, and think instead of dynamic performance spaces"⁸. As an audience space, the museum requires the same kind of thought as theatre space, a notion inspired by how Peter Brook's spaces enable the removal of barriers between audiences and performers. In museums this translates into removing the distance between the viewer and the artefact. The environment is only one part of the theatre's experience, the other is the performance itself. Greenberg borrows Brook's definition of 'vital theatre' and applies it to the museum. The vital museum combines an "imaginative interpretation and display with a resonant architecture setting"⁹.

11.3. The Holocaust exhibition

Discussing his experience as a designer with Bob Baxter for the Holocaust Exhibition at the Imperial War Museum in London, Greenberg describes the project as a

... completely integrated experience in space using every available medium; in atypical space you can find a seamless fusion of artefact display, home movie, testimony, newsreel, audio, cartography and biography and interior architecture. In devising this exhibition we used the techniques of film-making and storytelling¹⁰.

The exhibition was structured according to the Aristotelian



The Holocaust Gallery, Imperial War Museum, London. A series of chairs with integrated audio-speakers. Photographs by the author.

classic three-part drama shape. This, according to the author, was something the audience could recognise, consciously or unconsciously, and somehow resonated with the power inherent in that structure. The exhibition is conceived as a 'film in space', "low on iconic artefacts but high on impact"¹¹. It was conceived as a series of layers for the audience to explore and edit at their own pace. A strong visual language – predominantly black and white – was utilised in both spatial arrangement and display, alluding to the experience of the victim and perpetrator. The audience was also pulled into this interaction by seeing their own reflection mirrored in the black perpetrator space as they stood on the white floor. My own experience of visiting the Holocaust exhibition, besides being deeply emotional and moving, was revelatory in terms of a new mode and theatrical way of interpreting and designing an exhibition space. The object that I found better exemplified, from an aesthetic point of view, this approach to experience-making in audience-driven spaces is a series of chairs with integrated audio speakers arranged alongside a wall. This exemplification, in my opinion, included the consistency and integration that this approach demands between space, objects and media. However chairs are of different facets and shapes, they all look the same as they are painted in a dark grey colour, which resembles that of the wall. In the semidarkness of the room, the wall, floor and chairs are perceived as a seamless, continuous object. I felt that the aesthetic of this installation, the choice of colour, spatial arrangement of the chairs, as well as media integration contributed to transferring in an embodied way the poignancy and diversity of the experiences of the survivors of the Holocaust. To those who pass by, the array of chairs triggers a soundscape that is as diverse in terms of accents and voices as well as powerful in terms of inducing curiosity and the desire to sit down and listen to the stories. When sitting on the chair the background murmur instantly dissolves and from the silence and the new perspective immersion in the survivors' personal and unique stories can unfold.

I envisaged the chairs, all different yet all painted grey, incarnating the idea that was central to the strategies of mass destruction embedded within the racial policies of the Nazi regime. This idea, and the lucid atrocities it perpetrated, whose recollection I have attempted to grasp through the reflections of Hannah Arendt, Primo Levi and Giorgio Agamben, has performed the intentional eradication and systematic annihilation of the 'other' as a human being. The chairs embody in a very powerful way this de-humanisation of the individual as perpetrated by the Nazi regime. At the same time, the transformative experience that the interaction with the chair and memory-scape elicited, was that sitting on the chair, being immersed in the stories and listening to people's memories, provided a way for the testimonies to engage in a dialogue with a listener.

11.4 Creating a space of encounter

The chair is also functional in terms of exemplifying the contact surface or interface that mediates the two worlds: the world of the self-viewer, listener – and that of the 'other' – the testimony, the survivor. In linking back to Irigaray's reflections on difference and the 'other', we

have now a better understanding, illuminated by the practices, on how, as designers, we can create and mould this space of encounter between subjectivities, self and other, distant spaces and times. For the other to find a place of representation and encounter we have to first be able to recognise the other in terms of his/her difference from ourselves, as Irigaray puts it:

the other ... Have you already encountered the other? What does this other look like? Godot? A barbarian? God? Perhaps a terrorist? Or a poor person dying of hunger in a country very far from mine? How can we recognize the other? People talk a great deal about the other today. But do they have any idea of what or who the other is? What is the content of the word when you say: the other? What place might this other have for you?¹².

For this encounter to occur, Irigaray suggests that the first art that is needed is 'spatial architecture'.

It is true that meeting with the other is not an easy task. Leaving one's own world in order to go towards the other, first amounts to meeting with the infinite, an infinite in which both I and the other risk losing ourselves. A threshold is lacking which marks the limits of the world of each one. And also the difference between us, which allows opening a threshold, is lacking. Each one has, or ought to have, limits which set the borders between one's self and the beyond. Such a self involves all that belongs to one's own world: the way in which the subject relates to itself, to the other, to the world, but also to a cultural environment where this subject lives, an environment which takes part in our subjectivity, and is often confused with identity itself. To recognize the existence of another subjectivity implies recognizing that it belongs to, and constitutes, a proper world, which cannot be substituted for mine, that the subjectivity of the other is irreducible to my subjectivity.¹³

The encounter with the other cannot be reduced to the sharing of the same world, as this would entail that there is no space and no threshold to trespass, or to move towards. The concepts of space and threshold are necessary conditions enabling the gesture and movement towards knowing the other's world. Enabling each of the parts to cultivate their own differences and, at the same time, the desire of knowing each other is, according to Irigaray, a way to recognise the other as a part of ourselves. Importance is given to the role that space plays in this encounter, not only for providing the interface where self and other can meet, but also for allowing difference to be cultivated and acknowledged.

Exploring how space can enable this encounter and the cultivation of each other's differences, Irigaray argues that a space for the other, be this a guest or a visitor, has been already constructed for us by our society and often translates into a space for hospitality which is neutral and indifferent with respect to who the visitor is:

In this case one can only maintain the other outside the horizon of one's own desire. (...)

There is not yet a sharing of being, which presupposes a becoming with the other to which we agree to open ourselves, to listen to. Not only an individual becoming in a horizon already defined by a culture, a language, a people. But a human becoming which puts into question what has already happened for humanity, and which allows and clears up new perspectives on being¹⁴..

Can the museum become the space where moving towards, and meeting, the other is possible, away from consumption and spectacle, away from undifferentiated hospitality, creating a space in which desire and difference can be cultivated? Irigaray suggests that this space is sensorial and shaped by the experience of opening ourselves, not only our perspectives, beliefs, customs and habits, but most significantly our bodies and senses:

We have to open our ears to other meanings, other sounds, other accents and rhythms in speaking, other tones and pronunciations. We also have to open our eyes on other gestures, behaviours, but also other clothes and ways of investing the body. We have to accustom ourselves to other tastes, other fragrances or flavours, and even to other manners of meeting with: touching or not the other, greeting with a sound, a word or a gesture¹⁵ ..

Creating a space which enables proximity and closeness with the other does not entail the destruction of the world that is proper to each other. Authors such as Beckett and Coetzee have assimilated this space with that of the waiting room:

Beckett or Coetzee are waiting for something or someone who could arrive in their world in order to accomplish or to destroy it. They wait for an outside, a beyond, as for a something or a someone who could bring that which they are unable to realize by themselves: the salvation or the damnation and destruction of their own world, of themselves. This waiting in fact corresponds to the underside of the integration of the other in our country, our home¹⁶.

Recognising each other's difference is the first gesture of moving towards the space of encounter:

The search for a link between us requires respecting and maintaining the strangeness of the one to the other, the recognition that a nothing exists in common, which calls into question what is proper to each one (...) What we have to speak, to tell each other, is not yet determined by a discourse existing outside of us. Then the first word we have to speak to each other is our capacity or acceptance of being silent. It would be the first wave of recognition addressed to the other as such. In this silence, the other may come towards me, and I may move towards him or her¹⁷.

On our side, this gesture of moving towards the other requires an attitude that is twofold: on the one hand this movement requires an active undertaking, on the other hand it demands a receptive attitude of letting the other be. Remarkable on the importance of the senses as portals to this encounter, Irigaray explains:

We generally forget or underestimate this way of moving closer. Thus approaching the other requires sensory perceptions and ways to express them that our culture has neglected. Perceiving through our eyes, through our ears, does not obey the same temporal rhythms as perceiving through the mind. It is the same for other senses, including touch itself¹⁸.

In this interplay between openness, exposure of our own world and a receptive attitude of welcoming the other in silence, knowing and encountering each other is possible:

Meeting with the other demands memory and surprise, fidelity to a past and openness to a future, but also a participation of the body, of feelings, and of mind. Everything that we are is invited to the meeting, and this could not happen without this total involvement. It is also everything that we are that is implicated in the memory and the preparation of an encounter. Cooperation between the body, heart and mind is needed, and it requires an artistic process¹⁹.

11.5 Encounters in practice

In the light of this understanding let us now examine how occasions for meeting with the other, for intimacy, listening and encountering have been created in the practices and knowledge that has been produced in the process.

The Museum of Resistance offered an opportunity of coming in direct contact with personal memories of War and Resistance. The 'other' in this context is embodied by all those partisans, women, local farmers, deportees and survivors who were involved in the collective remembering and recounting of their histories that the museum encouraged via community participation.

Structuring the representation and mediation of the 'other' in the museum around an oral medium enabled spontaneous interactions with people's stories. The table was the interface enabling this encounter and engaged viewers and testimonies in a dialogue. The silence preceding the action of touching the book on the table and starting the conversation, created a space for contact and encounter. Then, the dialogue began from the conscious act of wanting to know the other, giving memories a voice, bringing them alive in the present moment.

As the conversation unfolded between myself, as the viewer, and the 'other', through eye contact and immersion in the story, a mixed feeling of estrangement and closeness began to arise. As the connection deepened I felt a sense of moving toward my interlocutor, a sense of physical closeness and emotional resonance, as his/her world was manifested in front of my eyes, as well as its multiple dimensions including the affective, cultural, historical and social

dimensions. Intimacy was created as an interpersonal dialogue developed and supported by the way content and medium acted in synergy and with consistency in transferring presence into the museum.

The process of collecting, editing and re-performing private memories into collective histories in the museum led to new interpretations of history and levels of truth which, according to the historian Pezzino, has the potential to develop a more democratic historical method structured around participation and difference.

New knowledge is produced when the 'other' opens our world to us, something that was unknown to us before, together with their most cherished memories, the burden of their past which still affects their life and present, and the recounting of the most significant moments in their lives, which had a deep transformative impact on their future. It feels as if connection with another human being can happen in a more direct, spontaneous yet profound way.

11.5.1 Sensorial encounters

In '*A New Poetics to exhibition design?*' Andrea Witcomb reflects on the affective power of objects and spaces in exhibitions and on the possibilities of producing 'interactive' experiences for visitors without the "aide of either mechanical or multimedia interacts to exhibitions". Witcomb argues that –

... multimedia components are not necessary in order to make the exhibition an interactive experience. Making the interactive characteristics of multimedia more explicit may help curators and exhibition designers to have a wider understanding of the ways in which exhibitions can be interactive experiential spaces²⁰.

Witcomb conceives of the gaps and cues as triggers of an interactive experience for visitors, as well as 'teleidoscoping' a way to design for cumulative, non-linear interpretations, thereby enabling more exploratory and discovery experiences. Moreover, Witcomb suggests that 'absence' and void can be used as tools to enhance the level of interactivity as they allow the opportunity to leave "space for the imagination to reconstruct the past and hypothesize on former functions or processes"²¹.

However basic, the interaction enabled at Liverpool Museum reveals in its simplicity some sense of magic and wonder: touching a wall illuminates a path engaging visitors with a treasure hunt. This will build up to become a plot that unfolds as more narrative paths and objects are discovered.

Exploratory, self-initiated paths generate non-linear narratives according to visitors' choices and interests, their subjective wayfinding routes through the collection engaging with the bodily experience of walking around and through the room. The idea of the cabinet was also conceived as a space for contemplation and silence, the intimacy of a room within a room. The integration of spatial design, interface and digital mediation all formed the exhibition's interpretive framework, thereby connecting Liverpool's past and present through encountering

objects, places, people, and stories of over two centuries of Liverpool's history down to the present time of the museum.

In the conceptualisation of *Resonances*, oral histories were conceived as media objects, and as such they were thought of as fully integrated into the exhibition display rather than treated as 'content' as in the displayed objects.

Borrowing the term from Kenderdine's reflections on *Place-Hampi* we can understand how content and medium work in synergy through 'aesthetic resonance'. We can speak of this aesthetic resonance in terms of the relationship between the content and the medium with the two working in synergy to transfer presence and evoke an aesthetic experience, engaging multiple senses simultaneously – including touch, hearing and sight – enveloping the viewers in a suspended time away from historical time, which reinstates the past into the present moment.

In the conceptualisation of *Resonances* at Liverpool Museum, oral histories were conceived as media objects, and as such, were thought of as fully integrated into the exhibition display rather than treated as 'content' as in the displayed objects. Borrowing the term from Kenderdine's reflections on *Place-Hampi* we can understand how content and medium work in synergy through 'aesthetic resonance'. We can speak of this aesthetic resonance in terms of the relationship between the content and the medium with the two working in synergy to transfer presence and evoke an aesthetic experience, engaging multiple senses simultaneously – including touch, hearing and sight – enveloping the viewers in a suspended time away from historical time, which returns the past into the present moment.

11.6 Improvised choreographies of place

Presence is conveyed in *Place-Hampi* by the co-evolution of virtual characters and participants as a performative exploration of the virtual landscapes, thereby enabling the encounter between viewers/explorers of Virtual Hampi's world and the characters populating and animating the landscape. Through a kinaesthetic approach to archaeology and place-making the world of the 'other' can be manifested, be this a tutelary deity of Hampi's sacred sites or mythological characters populating the devotional landscape. This manifestation or emergence of the world of the 'other' occurs through exploration, conscious movement, it is gradual and cumulative, evolving at the pace of our gait as we move physically on the virtual landscape and make sense of our, the system and others' actions.

The same exploratory approach to embodied participation in the natural and cultural landscape also informed the design of *Living Streams*. Transferring agency to the landscape as a 'resonant' medium of presence entailed enabling encounters and curating experiences with storytellers, musicians, artists, local communities, their creative works, and place-based knowledges. This approach strived to mediate experience of the multiple layers and dimensions embedded in the natural, cultural and social environments of the practices. Integrating participation and difference in the design of location-based interfaces entails rethinking at the same time the multidimensionality of contemporary space, shaped by articulations between electronic

and placed-based presence, the simultaneous and multiple inhabitation of identities and differences. This complex space is the ground onto which we can explore by means of practice questions of knowing place in a contemporary landscape which are marked by cultural loss, erasure of difference, transience and continuous movements in space and time. Irit Rogoff argues that the concept of 'multi-inhabitation' of different, co-existing spaces can also apply to subjects, incarnating a convergence of histories, cultures and languages.

Central to both *Place-Hampi* and *Living Streams* is the idea of space as a medium of encounter of other, marginal voices, memories and cultures which cannot otherwise be seen or heard. The knowledge that is produced in the physical exploration and social and cultural engagement with place shares many analogies with choreography, particularly with the work of Australian based choreographer Tess de Quincey. Examining the site-specific approach of De Quincey's choreographies, Gay McAuley notices that by rejecting traditional theatre space, site-specific performances can forge new relationships with places by disrupting old habits and ways of seeing:

... performance engages deeply with its chosen site, it brings up ideas of place, history and memory, and it has the potential to disrupt, disturb, and even to change the way people see the familiar surroundings of their daily lives²².

As an example of how site-specific performance can produce enabling and transformative effects thereby opening up new relationships between body, space and place, the author describes the *BodyWeather* Laboratory conducted by Tess de Quincey in the Central Desert near Alice Springs, Australia in 1999. Here it is important to clarify the difference between space and place, as proposed by McAuley, as this is essential in order to understand the dynamics and poetics of engagement that De Quincey's choreographies open up, as well as developing analogies to the research case studies using place and space as keys to the further understanding of concepts such as 'embodiment' and 'participation':

I use the term 'space', in the context of theatre and performance, to refer to the physical arrangement of the performance venue, the nature of the presentational space, the relationship that this creates between performers and spectators, set design, blocking, etc., while 'place' refers to the location of the performance venue within the social space of the community and the historical and cultural resonance of this locale for the community in question. The two concepts are, thus, closely interrelated, the one frequently underpinning or embedded in the other, but it is through place that we are led insistently to consider the social inscription of the performance work²³.

The Laboratory enacted ways of knowing about the desert space and place of Alice Springs, together with the cultural connotations and charges its colonial past brought forth, in ways that were situated and embodied. This was enabled by means of blindfolding, concentrated

and prolonged attention on an element of the natural environment, as well as slowing down the normal motion in order to break down and open up the instant moment. In this experience there was no room for the spectator, only for a co-choreographed improvisation:

What was produced was not a body of work, but a body of experience, an exploration of that place through the performers' bodies, through the performative means offered by BodyWeather. This means that the exploration took place in ways that only the performers themselves could experience and the further corollary is that their activity did not provide a comfortable position of spectatorship, indeed the spectators' presence was somewhat contested and felt as an intrusion²⁴.

The encounter between space, place and dancers develops through improvisation and choreographed action. Under this perspective both *Living Streams* and *Place-Hampi* are constructed around the audiences' spontaneous and choreographed movements: those initiated by participants in their self-guided explorations, and those enabled by the interaction with the digital media. As audiences move around the digital and physical space they encounter a place made of stories, personal memories, virtual characters, gods and goddesses, traces and presences animating the landscape. Agency is shared between the audience and the environment, meeting one another in a participatory choreography of place.

11.6.1 Reflections on a cultural interface (*Living Streams*)

In the last part of this chapter I draw on digital humanist Anne Balsamo's reflections on the architecture of public intimacy to critically examine the impact of *Living Streams* as a participatory and cultural interface for its role in keeping place and culture, sustaining innovation, cultivating technological imagination and fostering creative collaboration among and beyond its locale. I will finally elaborate on the project's sustainability and possible future directions.

In her book *The Technological Imagination at Work*, Balsamo explains that the "book calls for taking culture seriously in the design and development of innovation technologies"³⁴. Balsamo's 15 year long design-led research and practice focused on distributed museum and public interactives, an emergent – and increasingly widespread – form of public communication and engagement which stages new and active experiences in public settings. Presenting the findings and reflections of her research's social and cultural engagement with public archives, Balsamo argues that by "evoking new experiments with scale, built space, mobility, responsive environments, digital memorials, and cultural heritage sites" these projects manifest the "artistry of interactive experience design" that develops through collaborations between humanists and technologists. The *Aids Memorial Quilt*, one of her latest projects, is a powerful visual reminder of the AIDS pandemic comprising more than 48,000 memorial panels commemorating the life of the victims of AIDS. The panels have been sewn together

by friends, lovers and family members and are now virtually stitched together on the *Aids Memorial Quilt* web archive to enable collaborative browsing of the extensive database of the Memorial's panels. In discussing her involvement in the project, Balsamo notices that "to participate in the creation of applications that touch the hearts and souls of viewers / visitors / users has been a profound experience for me, not simply as a designer and digital humanist, but as a member of a generation who came of age as the AIDS pandemic spread throughout the globe". And asks: "How can the digital contribute to the preservation and resurrection of the quilt archive?"²⁵

A similar question can be posed about the heritage of the Georges River, as *Living Streams* strived to engage with the preservation and dissemination of the river's histories and cultures through creative collaborations made available by distributed, networked environments and pervasive digital applications.

In reflecting further on *Living Streams*' engagement capacity and impact on its locale and beyond, I use Balsamo's 'lessons' about the nature of innovation in contemporary culture which I summarise here from Balsamo's blog *Designing :: techno | culture*

The wellspring of technological innovation is the technological imagination. (...) Designing is a key site for the exercise of the technological imagination. The future begins in the imagination; designers hack the present to create our futures.

Innovation is a multidisciplinary endeavor. (...) Collaboration across differences is the key to techno-cultural innovation. The creation of new technologies always involves the design of new cultural possibilities.²⁶

I suggest that *Living Streams* has opened up technological imagination in Liverpool for people to encounter new possibilities of engagement and self-expression in networked environments. Most of participants on the boat tour admitted to having gained new information about the river, its history, and technology. The digital experience provided Liverpool's residents with knowledge they did not have before. This is quite significant as the majority of participants on the tour were local residents over 50 years old, with 20% over 75. For many of them the most innovative component of the experience was social, as many highlighted the importance of meeting new people and sharing a common interest in caring for the river as a main outcome of the experience. The following are comments from the participants on the boat tour:

- ... a great concept, worth exploring further
- ... very informative and entailed source of collecting, acquiring and provide information
- ... interested in practicing and using first hand
- ... found relevant to knowledge transmission
- ... understood as audio-visual layered on real time images
- ... application to pin points facts on site²⁷

Many participants discovered the potential to extend learning opportunities and environmental education for both children and seniors:

We can all try to teach the children how not to use the river as a dumping ground
Anything that will make people appreciate and want to care for our river must be good²⁸

In regards to collaboration and its importance in creating new cultural possibilities, more than 50% of the participants on the boat tour expressed their intention to become involved in *Living Streams* and its future activities and workshops.

The role of rivers has always been instrumental in the industrial and economic development of their catchment area. Since pre-colonial times and after the colonisation the Georges River has contributed to the flourishing and development of the local economy in many ways, from the first mills sustaining early rural processing industries in the mid-1800s, to modern industrial enterprises established along the river that have contributed to Liverpool's expansion and economic growth. In more recent times, however, the river has become a silent, almost invisible presence, not only irrelevant to the local economy and transportation industry but also estranged from people's everyday lives. *Living Streams* took on the challenge to put the river back into the equation by stimulating a sprawl of technological imagination that can foster innovation and improve collaboration across generations, communities and multiple cultural domains.

After its launch in October 2012 the project has generated attention from the media and other cultural institutions. Local councils, cultural organizations, universities and creative industries are now examining *Living Streams* as a model to deploy similar engagement platforms in other river catchment areas, such as those of the Hawksbury and Parramatta rivers in the Sydney Metropolitan area. The ripple effect has begun! In considering the project as a first step leading towards a networked, creative and collaborative future, we pose questions regarding what will the role of technological innovation be in the transition from an industrial to a post-industrial economy and concerning the maintenance of Liverpool's entrepreneurial past. How can the cultivation of the technological imagination feed the development of creative industries, local skills and cultural resources in such a way that not only can creative and cultural enterprises become self-sustaining, but can also lead the local economy in this transition?

11.7 The enabling of touch

If in *Living Streams* and *Place-Hampi* the landscape acted as an interface and enabled access to, and connection with, a realm of multiple-presences inhabiting the landscape, in *Resonances* and *Belongings* augmented objects were utilised as portals to access other realities, that of the migrant's journey of re-homing to Australia and of a local past resurfacing in Liverpool's museum from the memories and donations of the community.

Interaction with augmented objects engaged primarily the sense of touch, in its two-fold active and passive modalities: that of touching and being touched. However by different interactions, both case studies utilised the skin and its conductivity and response as a resonating vessel and organ of knowledge. It is through touch that a first contact can be established, touch is the necessary condition of moving into the world of the objects and making sense of them.

As mentioned in the case studies the relationship between affective and physical touch has been understood since early Western philosophy, and can be traced back to Aristotle's investigations of the heart as the location and corresponding organ of this sense. This correspondence was also known in Vedic philosophy and Tantra phenomenology in the Hindu tradition. Investigating the significance of body and touch in the embodied phenomenology of the Hindu tantric philosopher Abhinavagupta (c. 975-1025 c.e.), scholar of Hindu studies Kerry Martin Skora retrieves the intimate connection at the base of Abhinavagupta's philosophy between touch and awareness. Abhinavagupta acknowledges the sense of touch as the highest of all perceptions and as the primordial sense enabling the highest process of awareness. This awareness arises in the act of external, active forms of touching, but also it refers to internal tactile sensations of 'inner touching', which Skora explains as the "bodily felt sense of Being"²⁹. As discussed in the case studies, the link between touch and awareness is a continuous thread running through contemporary phenomenology, including Merleau-Ponty and Levin's inquiries and most recently Jean Loius Chretien, whose studies provide insights into the phenomenological reading of Aristotle's speculations on touch, arguing that both vision and hearing are grounded in the human capacity to touch. As Chretien observes it is through touch that the body listens and is able to listen: "no phenomenology of life, of body and the flesh, can be constituted without basing itself on a phenomenology of touch"³⁰.

11.7.1 Touch and Profanation

Understanding the role touch can play in enabling and amplifying our connection with the world is fundamental for designers whose work addresses the senses as vehicles of engagement and embodied experience. Touch, from this perspective, can be looked at for its 'transgressive' potential of perforating the threshold and divide between the worlds of self and other, thus enabling contact.

Touch as an organ of profanation has also been discussed by Agamben when he recalls procedures through which religions remove things, places, animals or people from common use and transfers them to the separate sphere of the sacred. Rituals involving touch played a crucial role in both creating separation and, conversely, returning that which has been separated through profanation:

That which has been ritually separated can be returned from the rite to the profane sphere.

Thus one of the simplest forms of profanation occurs through contact (contagion) during the same sacrifice that effects and regulates the passage of the victim from the human to the divine sphere. One part of the victim is reserved for the gods, while the rest can be consumed by men. The participants in the rite need only touch these organs for them to become profane, edible. There is a profane contagion, a touch that returns to use what the sacred what the sacred has separated and petrified.³¹

In the extreme phase of capitalism in which we live, which Agamben explains as a new, mainstream religion, everything is separated from itself and placed into separate spheres, that of consumption and of spectacular exhibition:

We could say that capitalism, in pushing to the extreme a tendency already present in Christianity, generalises in every domain the structure of separation that defines religion. Where sacrifice once marked the passage from the profane to the sacred and from the sacred to the profane, there is now a single, multiform, ceaseless process of separation that assails everything, every place, every human activity in order to divide it from itself. This process is entirely indifferent to the caesura between sacred and profane, between divine and human. In its extreme form, the capitalist religion realises the pure form of separation, to the point that there is nothing left to separate. An absolute profanation without remainder now coincides with an equally vacuous consecration. In the commodity, separation inheres in the very form of the object, which splits into use-value and exchange value and is transformed into an ungraspable fetish. The same is true for everything that is done, produced or experienced - even the human body, even sexuality, even language.³²

Reflecting on the approach to curation and the strategies developed in *Belongings*, objects handling plays a fundamental role for its capacity to initiate a dialogue between visitors on a personal, subjective level. I have argued that touching peoples' personal belongings and, at the same time, being touched by the memories they carry, can be a deeply moving, unsettling, affective and at times disturbing experience, which can trigger a reflexive response of communicating back to ourselves. This inter-subjective dialogue with the past, the other, the distant migrant, the neighbour, can only develop through the recognition of 'difference'. The mediation of difference and consequent dialogue that unfolds between visitors and memories has the potential for being transformative on many levels. It transforms the archive, where oral histories are held and de-contextualised for the purposes of heritage preservation, into what Pierre Nora refers to as a 'lieu de mémoire'. According to Nora, history and memory are oppositional, the former being a representation of the past, the latter a dynamic and dialectic phenomenon, which necessitates that it be perpetually activated by collective, performative recollections. For contemporary museums and archives to become 'lieux de mémoire' there "must be a will to remember"³³. Fernandes explains how important this desire for knowing the past is in the process of preserving cultural heritage. It happened that participants involved in

the oral history project disclosed their personal recollections for the first time to the interviewers. "Sometime it's simply because no one had ever asked"⁵⁸. We imagined the act of searching, selecting, browsing through the different objects on the *Reading Table* as simulating asking a question. This gesture performs the interest and curiosity of knowing about a place, a person or an object, it equates posing a question and thus starting a conversation. In this simulated narrative environment audiences are performers who actively initiate and participate in the dialogue. Their movements and choices create associations, make new sense and renegotiate meanings between the present and the past.

11.7.1 Affect and engagement through touch (*Belongings*)

In this case study I have tackled questions of affect and engagement in the development of digital interactions with material objects. The idea was to extend presence and mediate the experience of loss and re-grounding using augmented objects as actuators of memory. In this interaction, the continuum of migrants' affective experience, which develops through displacement and re-homing, is renegotiated and can be re-embodied through the interplay of sense-memory triggered by physical touch and the immersive narrative environment it activates. In a transposition to an exhibition space, further considerations need to be regarding the aesthetics of the objects, the materiality of the replica and the display, and visitors' interactions in the space. Would it be more important, for instance, that a replica conveyed properties related to shape, texture, or material? I imagined a scenario in which replicas were all made of the same material, ceramics, and in the same colour. This invites the audience to search for and to discover the differences of the various objects – thus conveying the difference of each personal experience attached to them – by touching them. I imagined the objects populating a gallery space, each defining its own audio region or 'story zone' in which audience can immerse themselves without distraction. The zones would negotiate different experiences and life memories associated with the objects using directional speakers to facilitate a more spontaneous listening experience without interference.

Acknowledging the Fernandez and Petersen intention of making "history and heritage more accessible"³⁵, the idea behind this interaction works at the convergence between different modalities of communication: orality, gesture, touch and vision. It also combines the explorative, proprioceptive experience of active touch with the interceptive one of being touched by the sound³⁶. Moreover, it affords visitors a performative way to experience narratives driven by their own exploratory interest, guided by a curiosity to handle an object and knowing it sensorially.

In this regard it is important to consider the current debate within material culture discussions of approaches to the representation and embodiment of cultural memories that privilege sensory versus narrative forms, seeing narrativity and sensoriality as oppositional. Reflecting on this tension, Andrea Witcomb argues that –

... arguments for sensorial, embodied form of knowledge help understanding the role of objects in the creation of sensory as opposed to narrative forms of memory. (...) In narrative forms of memory, stories are told about particular people, places and experiences of the past. Memories and objects are thus placed within a temporal framework in which the past is clearly differentiated from the present.³⁷

Such temporal demarcation seems to fade when sense memory is involved. As Jill Bennett points out in her investigation of sense memory and trauma, for a survivor of Auschwitz

... a sense memory is the physical imprint of a traumatic experience, casting aside any temporal division between past and present. (...) Such memories become a form of matter, they form an 'impervious skin of memory, which can return the victim to relive the physical sensation related to the traumatic experience.'³⁸

Witcomb goes on by explaining the impact of sense-memory on time "... in material culture studies, sensorial experiences are increasingly associated with a form of memory which also collapses time and which cannot be easily narrated"³⁹.

Rather than proposing a 'solution' to this tension between the different embodiments and temporal effects of narrative and sensory based forms of memory, I leave this open to the different interpretations and experiences that new approaches of curatorial design with responsive environments and sensitive objects might develop for audiences. As the curators of Australian Journey notice:

If the objects' significance – especially those pertaining to migration heritage - lies in the realm of affect and sense memories that they produced for their owners/collectors, traditional forms of display in which objects are used as illustration of historical themes will fail to bring this out. Therefore new strategies of interpretation which enable new forms of engagement with the object are needed.⁴⁰

11.8 Enchanted objects

Resonances and *Belongings* have challenged the potential of touch to transgress the separation between the sphere of spectacle and everyday life by engaging physical bodies in the act of knowing about the other and opening up an encounter for the other to manifest in the space of the museum. Tested in and through practice, the experience around touch-based interactions has proved to be a valuable means to access interiority and facilitate a more introspective relationship with the represented other. The role that everyday objects can play in this interaction is significant, as current trends in curating cultural heritage indicate. The exhibition *The Universal Addressability of Dumb Things* held at the Southbank Centre, London, in 2013 and

curated by artist Mark Leckey advocates precisely this new understanding of common objects as more than just things we are surrounded by and own. It explored how relationships with ordinary things are transformed by information technology and how this augmentation and entanglement between digital and physical world produce a kind of “techno animism where the inanimate comes to life, returning us to an archaic state of being, to aboriginal landscapes of fabulous hybrid creatures, where images are endowed with divine powers, and even rocks and trees have names”⁴¹. Is technology leading us to a more subtle understanding of the world we live in, enabling us to establish correspondences, opening up new relationships between the digital, the natural, the real and the artificial world? As anticipated in the research title, technology can cast a spell over us, producing wonder and enchantment. Both this mental state of being enchanted, as well as interaction with objects that are intelligent and possess agency seem to lead to a new, integrated, form of animism, or object-centred knowledge, which reveres everything as animated and possessing agency. This has a significant transformative potential on curatorial design practices, as Leckey explains:

Modern technology becomes ever more pervasive and sophisticated, objects begin to communicate with us. While this takes us into the realms of science fiction, it also boomerangs us back into the past and a more animistic relationship to the things around us. The status of objects is changing, and we are once again in thrall to an enchanted world full of transformations and correspondences, a wonderful instability between things animate and inanimate, animal and human, mental and material.⁴²

11.9 Aesthetic experience and how to evaluate it

Adopting an object-centred approach to curatorial design entails releasing the curatorial power back to the objects, therefore allowing a sufficient degree of openness and ambiguity to encourage interaction and participation. I have argued that the integration of multimodal interfaces in the exhibition environment can facilitate participation and engagement as interactive media require a response and input on the side of the user/participant. In what ways is this responsive state on the side of the visitor encouraged or provoked by the exhibition-scape, and how can we design and induce an aesthetic experience for museum audiences?

Mihaly Csikszentmihalyi investigated the aesthetic experience of museum visitors encountering a work of art. According to the studies he conducted with his team at the J. Paul Getty Museum, aesthetic experience encompasses four major components including: knowledge, which appeals to the cognitive dimension and to the prior knowledge on the subject/work; Emotion, which pertains to the affective and emotional sphere, encompassing feeling and emotions which are difficult to be communicate in rational terms; and a third dimension concerning the impact that the art object has on our perception, the visual impact or, in the case of music, the aural; the last category “includes the way in which works of art help us understand ourselves and other people by making us reflect on what transpired in the

encounter with the work of art"⁴³. The fourth dimension therefore appeals to self-discovery, introspection, personal connectedness with objects as well as to our "universal concerns across cultures and times"⁴⁴. Csikszentmihalyi describes this experience as a 'state of flow' which "carries you along in time and place"⁴⁵. In order to understand the dimension of knowledge, emotion, perception and empathy as united in the wholeness of the aesthetic or flow experience, the author draws a comparison with highly experienced professionals when they are engaged with a given activity such as rock climbers, ballet dancers, chess masters and surgeons.

In both cases, i.e. an audience experiencing a work of art and a professional engaged with an activity, the experience is made possible by active exercise exerting cognitive, perceptual, emotional and communicative skills. This engagement, as the author notices, requires full concentration and undisturbed attention. This results in focusing on the present moment, the exclusion of past and future concerns and other extraneous mental content to establish space for the "fully satisfying world created by the interaction"⁴⁶.

According to Csikszentmihalyi, the criteria defining an aesthetic experience demand an object focus, which requires attention centred on an activity or an object. Immersion in the present – with no distraction about past and future concerns, the loss of ego – that is an awareness of transcendence involves the boundaries of the ego, control of actions or necessary skills to perform an active

discovery, a sense of wholeness and integration resulting in a sense of self expansion and satisfaction.

In our goal as designers and curators in order to convey an aesthetic flow experience there is a need to create a sense of immersion in the work, and this is facilitated by media that stimulate multiple senses simultaneously, as well as engaging us in a state of sustained attention in the present moment, thereby involving active discovery. All these components contribute, according to Csikszentmihalyi, to producing a greater sense of integration and stronger sense of self when we return to normal life after experiencing this time of suspension and immersion

in the present moment. Another important aspect defining the aesthetic experience, which can help understanding about how to evaluate, from an aesthetic point of view, the kind of practices that we have engaged with in this research involves the ability to “decode and recreate – through historical knowledge, emotional responsiveness, visual sophistication and communicative empathy – some aspects of the process by which the work of art was created. It is through this meshing of challenges and skills that the aesthetic flow experience comes about, and the potential magic of art becomes actualized”⁴⁷. Csikszentmihalyi describes the aesthetic encounters with the work of art as a resonance between the visitors and the work encompassing all four dimensions of the aesthetic experience, including sensing, feeling, thinking and communicating:

The aesthetic experience occurs when information coming from the artwork interacts with information already stored in the viewer’s mind. The result of this conjunction might be a sudden expansion, recombination, or ordering of previously accumulated information, which in turn produces a variety of emotions such as delight, joy or awe.⁴⁸

Discussing the evaluation of aesthetic aspects and qualities of design and how this has been a rather neglected area of research, Mads Nygaard Folkmann explores the communication encoded in design objects in terms of their added value enabling an object to be regarded as aesthetic. As Folkmann explains, design objects are a physical manifestation of an idea which is incarnated in the object. Moving the focus from the perceiving subject to the sensuous object, Folkmann argues that questions regarding aesthetic qualities of an object should investigate the object itself in its capacity to

... point to a level of idea content or meaning, which, in a complex process of displacement, it simultaneously contains and conceals. (...) This aspect under the heading of aesthetic coding [which] examines how an object can not only attract attention and appeal to the senses (as in the sensual relation) but also be constituted in a way where it, in establishing a specific relation of physical manifestation/idea, demands or even commands a specific order of alignment or mode of understanding.⁴⁹

Questions of aesthetics in design should concern, according to Folkmann, “how [designed objects] define a relation to reality in the relation of physical manifestation/idea, and how they can be seen as mediums for meeting the world in new and/or reflective ways where new kinds of experience and experiencing are evoked”⁵⁰.

This is very relevant to the way in which we can evaluate curatorial design practices from an aesthetic point of view by looking at the how ideas are physically manifested in the design. Ideas, such as the use of landscape as an interface in the *Living Streams* case study which drew on the notion of immersion in a multidimensional landscape, had to be somehow compromised within the design process, as digital technology, rather than facilitating a spontaneous flow of

retrieving and participating in the layers of landscapes, was an hindrance to the experience, which resulted in breaking the flow as in the case of using a smartphone to access the embedded content, or creating a distance, through a remote online experience disconnected from the landscape itself.

Folkmann goes on to explore aesthetics in design, arguing that this is “a matter of how design relates to meaning”⁵¹. Not only does this relationship need to be explored in the way it is reflected in terms of the physical manifestation of a design object, but also at how it involves, a self-reflective process on the side of the designer.

The integration of idea and physical manifestation constitutes, according to Folkmann, the hallmark of aesthetics in design and creates a surplus of meaning that can be used as a tool of reflection on the design process.

Challenges in design are found in the ongoing dialogue that design can enable between the outer appearance and the meaning it attempts to simultaneously reveal and conceal. Including aesthetic matters in the process of design, as well as evaluation and reflection on design, entails considering the two main aspects of design put forward by Folkmann, including design “as a structure of sensual appearance, and design as an act of communication that lets an idea or content of meaning be physically manifested and reflected in different ways”⁵².

The first aspects entail strategically considering the sensuous impact of the design object within the design process in terms of its capacity to enhance aesthetic perception and produce ambience. This can be included in a design methods toolbox, which can help to explore how “the power and importance of a sensual relation are achieved through designerly means”⁵³.

The second aspect raises questions on the level of ‘communicative self-reflection’ in design and the way design communicates encoded meanings and values in aesthetic forms. These instruments can be used as both means of challenging conventional ways of conceiving design as well as practical methods to address aesthetics in design.

11.10 Our being in the world

Since the very early phases of new media art and artistic research in immersive virtual spaces, artists and designers have posed questions on the potential of the medium to enable new understanding and experiences of our place in the world and the role of the body in this domain. *Osmose* created by Char Davies in 1995 is an example of a pioneering interactive virtual environment utilising 3D computer graphics and spatialised sound. The work created an audience immersive experience via a stereoscopic head mounted display and a motion capture vest with breathing and balance sensors. The installation consisted of a dark and quiet space and two large-scale light openings facing each other, a stereoscopic projection of a shadow silhouette of the audience. The silhouette represented and communicated the gestures of the ‘immersant’ drawing attention on the body as a medium of that experience. Without going into the technicalities and details of the work, my interest here is to tease out the motivations that drove the creative process as well as the concerns of the artist related to her work by drawing on her own words:

Osmose is about being the world in the most profound sense, i.e. our subjective experience as sentient, embodied, incarnate, living beings embedded in a spatially-enveloping living world (...) Osmosis as a metaphor: transcendence of difference through mutual absorption, dissolution of boundaries between inner and outer, intermingling of self and world, longing for the Other.⁵⁴

The motivation behind *Osmose* as an artwork was to heal the Cartesian divide between mind and body, subject and object, seeking to re-sensitize what the dominant stance towards life has alienated, our capacity to reconnect body, mind and the world. The aesthetic of *Osmose* is described as an interactive aesthetic which is body-centred, based on intuitive, instinctual and visceral processes of breathing and balancing.

11.11 Participation in the inclusive museum

There are many ways whereby as curators and designers we can embed this preoccupation in our practice. The manifestation derived from these concerns can be very diverse. For my work as a curator and designer it is important to incorporate these concepts, as my practice is informed, challenged and illuminated by questions of how encounter, connectedness and intimacy can be facilitated, in what ways design can engage the physical body in this exchange, and how difference can be cultivated in order to let the world of the other emerge. Simply posing these questions in our work as designers can lead to a more integrated practice affirming ways of being interconnected with ourselves, others, the worlds around us, and somehow re-sensitize ourselves with new aesthetic experiences that are as intimate as they are inclusive.

Richard Sandnell examines how spatial practice and social agency can meet in the museum by looking at the politics of exhibiting, presentation and arrangement that marked the history of the museum. As museums undergo a process of radical reinvention and renewal, their agendas are driven by goals of achieving social equality, fostering inclusion and pluralism, and the promotion of equality, thereby engendering pluralist and democratic values. Sandnell argues, however, that a visitor-led audience-centred approach to exhibition making, which supports the primacy of visitors in determining meaning, can be problematic as far as social goals such as equality, pluralism and inclusivity are concerned. The primacy of an audience-led approach to museum making, should not, according to Sandnell, “deny the potential influence (and the concomitant social responsibility) of those who directly shape cultural spaces – curators, architects, designers and increasingly educators and other museum practitioners – determining what is displayed, how and with what purpose in mind”⁵⁵. This entails taking the responsibility of choreographing an audience experience that negotiates degrees of restrictions and improvisation, spontaneous interaction, freedom and ambiguity. As designers we should aspire to create work that will produce a variety of emotions and attain a high quality aesthetic response from people. These involve focus, attention, clarity,

concentration, emotional transport, freedom and transcendence. Our goals as interpreters, curators and designers should also be to create an experience that is transformative. Referring to Peter Brook's work, Greenberg proposes that the purpose of performance is precisely this: to transform. The idea of transformation informed the design strategies of the Holocaust exhibition which incorporated a space for contemplation, reflection and dialogue at the end of the exhibition, in which visitors could "test their emotions against testimony from survivors about trust, faith, memory and rebuilding their lives"⁵⁶.

The idea of the transformative power of design is incarnated in the design project '*Fallen Tree Trunk Bench*' designed by Jurgen Bey for Droog and illustrated in the image in the next page. This combines and blends two different objects pertaining to different registries and imaginaries: the natural environment and a domestic interior. The designer subverts and transforms two ordinary objects such as a tree trunk and a back of a chair, into something completely new and unexpected. The new hyperobject resulting from the combination evokes both the experience of being at home in nature, and at the same time bringing nature into our home. The chair is also a recurring object throughout this research: the hamper chairs imagined for a development of *Living Streams* into a public interactive installation, the chair as means for integration of oral histories at the Holocaust exhibition. The chair, furthermore, can be looked at as a metaphor of the encounters that this research has attempted to open up between testimonies of various times and histories, their heritage and contemporary audiences. Sitting on a chair also entails a predisposition to listen, an attitude of being open and receptive to meet an interlocutor, to save a time for oneself away from time.

The practices I engaged with and presented in this research have been transformative for myself as a participant, curator and designer on many levels. I experienced closeness and affect with the people I first met through their objects and memories telling of their migration to Australia, which I then encountered in person. Interacting with their belongings and knowing their stories created a space for intimacy enabling connection, dialogue and exchange. I felt I was part of the community in Liverpool and shared the same pride in learning, exhibiting and treasuring the wealth of its local heritage. There was a special moment when I felt that the enthusiasm I had imbued in the project was contagious and a very powerful means of engagement beyond Liverpool's locale. When selecting the items on display at the museum I came across a documentary by Peter Weir on Green Valley. This was an early work of his career portraying what, at the time, was considered a doomed neighbourhood through the perspectives of the local residents. After this project in Liverpool, Weir enjoyed many successful films as a film director. When I contacted him to inform him about the exhibition, he immediately wrote back saying that he remembered Green Valley and he was willing to contribute with a note from his memory based on his experience there. We hope to include this original work in the second stage of the exhibition.

This was significant as it shown how archives and heritage collection, when re-vitalised through and integrated into creative and performative practices, have a transgressive potential of producing effects in the world, within and beyond their locality.

11.11.1 The role of a local museum as a 'contact zone'

A final reflection concerns my position as curator in relation to Liverpool's heritage, and my engagement with the local history, culture and its communities.

Discussing the well-known concept of the 'contact zone' in Mary Louise Pratt and James Clifford's work and extending it to the museum field, Giovanni Pinna poses questions on the kinds of museums that can be rightfully addressed as 'contact zones'. Pinna argues that one of the requirements for a museum to become a contact zone is the possibility of developing "reciprocity and related systems of cultural exchange among subjects who meet, along with the ability for self-interpretation for the community of reference"⁵⁷. Applying Pratt's concept of 'contact zone' – a space for intercultural encounter where people came in contact and their trajectories intersect – to Indigenous cultural centres, Clifford explains further how these centres are the materialisation of a zone of contact and, we could say, act as an 'interface' between cultures and communities, thus fostering intercultural dialogue, representations of marginality, and providing the means to disseminate culture while also encouraging reflection on identity, Self and Other. Drawing from Clifford's reflections Pinna argues that:

Many community museums dedicated to geographically and ethnically limited local cultures seem to assume a more genuine status of contact zones. These are museums that are born from the need for self-representation and self-interpretation of small communities, above all in non metropolitan areas, but that are born in contrast to other cultures and ethnicities.⁵⁸

For a museum to become a 'contact zone' it has to reflect a need from the community. It is typically generated as a response to a need for self-representation, cultural exchange, or to preserve and to pass on a heritage that would otherwise be lost, as discussed in the case study of the Museum of Resistance.

This engagement with the local community as a driving agent which initiated the process was somehow missing in the early stage of the project, which fell into the typical process of appointing a curator and commissioning a design based on the curator's proposal. Adopting participation as a structuring model of museum-making practices entails that the community takes full responsibility for initiating and carrying on the process, with the curator being a facilitator and mediator of the ideas, needs, values and desires that emerge from the community. The initial community consultation upon which the design proposal was developed, however sensitively planned in order to gauge inspirations and responses that were as diverse and broad as possible, fell, to a certain extent, into the 'us/them' paradigm, and thus failed to foster the appropriation of the museum's goals within the communities that had been involved.

For a museum to be inclusive and representative of the diversity and plurality of a multicultural society, such as Liverpool, there is a need for community members, local organisations and groups to participate directly and actively in the promotion, interpretation and representation of their own heritage.

In the case of the exhibition at Liverpool Museum, collaboration with a team of local historians, members of Liverpool's Historical Society – for instance – would have benefited the development of the work, helping to devise the most relevant themes, possibly controversial topics and open discussions around key themes of Liverpool history that were also relevant to current historical debate. The interpretive process would have benefited immensely from a more interdisciplinary, as well as locally driven, set of collaborations.

11.11.2 Public Goods: Collecting, preserving, sharing and producing culture

As a parting thought I would like to acknowledge the importance of local museums to invest in public programs in order to engage community members not only as audiences of exhibitions but as cultural producers and active participants in preserving, collecting, sharing and producing new knowledge about their heritage.

As a reference to this idea of ongoing interaction and mutual influence between heritage practice and creative production I briefly introduce the project *Public Goods* by Proboscis, which develops a series of public programs in the UK. They are concerned with questions such as “What is most precious about the places and communities in which we live, work and play? How can we begin to communicate the value of the intangible goods and assets that define our attachment to people, places and things?” According to the coordinators, *Public Goods*

... consists of a series of projects, or ‘surveys’ that focus on a particular place or theme investigating the intangible goods that people value in their own environments and communities, and what they wish to transmit to their fellow human beings both in the present and the future”. It focuses on “making and sharing tangible representations of the intangible things we feel are most precious about the places and communities we belong to, such as stories, skills, games, songs, techniques, memories, local lore and experiential knowledge of local environment and ecology.⁵⁹

The project develops engagement and creative collaborations with artists, designers, the broader public as well as professionals in a wide range of fields. I propose to look at this way of experimenting with new participatory approaches between the public, local institutions, professional organisations, and citizens, thereby promising new possibilities for inclusion and access to knowledge. Transforming local museums into cultural hubs for creative exchange and social engagement requires opening up the decision making process and transferring the curatorial power to the community. I propose that this can be tested in Liverpool by allowing local artists to use the collection exhibited in *Resonances* as a source of intervention and a site wherein to experiment with new ways of engagement with their heritage to create innovative aesthetic forms that are as open as they are unpredictable.

11.12 What kind of knowledge?

As a final reflection on this research journey which has intertwined with my life and enriched it in many and profound ways, I would like to bring in the discourse the Petra Gemeinboeck's considerations and questions about artistic research into digital processes. Gemeinboeck's works explore the relationships and mutual perturbations that occur between machine agents and their temporary inhabitants. In asking what kind of knowledge is produced in creative research into digital processes and, Gemeinboeck argues that these artistic practices make tangible a kind of knowledge that unfolds, as well as relies on, situated, specific, yet indeterminable conditions which are also partial and embodied. The kind of relationships that develop under these conditions are non-linear, co-evolving and embodied, rather than pre-scripted and controlled: "Any existing relationships with it, any assumptions and expectations from the works' authors and co-authoring audience, are constantly probed, unfixed and renewed"⁶⁰. This creates a playground for material thinking enabling "alternate, multiple and slippery ways of knowing"⁶¹. Indeterminability, elasticity and fluidity are the conditions for these slippery outcomes and embodied knowledge to unfold:

Every movement of the participant causes a myriad of changes in the whirling environment: in shape, scale, density, speed, position, and even the potential for change (computation of new trajectory points per frame). Uzume – a three-dimensional immersive virtual environment created by Gemeinboeck in 2003 – continuously adapts to the curiosity and playfulness of its human opposite, and, at times, it appears to unfold like an extension of their bodies.⁶²

Conditions of receptivity, ambiguity and improvisation can be looked at as opportunities for designers adopting 'participation' in their practices. The emerging culture of participatory and open design is transforming all aspects of creative practices, including museum making, by developing a new approach to design and curation that is open to participation and enables interaction. As performed in the research practices, this approach is resonant with, and sensitively tailored to, the participants' specific interests, curiosity, different modalities of interaction. In doing so it creates a space of contact wherein physical bodies, tangible and intangible heritage, identities, subjectivities, places, present and past can meet.

The knowledge that is produced in these interactions is transformative, and 'experience' is the means that enables transformation and production of a kind of knowledge, that is aesthetic and embodied. Gemeinboeck explains further how the conventional production of knowledge typically

... separates the subject from the object and distances the process of production from its specific context. In contrast (...) it is by exploiting the noise in the system and by seeking the specific, indeterminable and irreproducible that the thinking with and deploying of digital technologies can open up new perspectives and engender new aesthetic experiences.⁶³

11.13 Parting thoughts

We live in a very exciting time in which our society is transforming towards increasingly more complex forms of connectedness. This change had been anticipated by Henri Bergson and Marshall McLuhan who envisaged an integrated collective intelligence and a “new form of retribalized society in which the electronic environment in which we are immersed compels commitment and participation, and thus advances a new consciousness of interdependency and harmony”⁶⁴. I feel very fortunate to actively take part in this transformation, perhaps with a deeper awareness and taking a distance from the trusting and optimistic mood of the late 1960s and early 1970s when McLuhan was developing his theories, yet while participating with a similar enthusiasm in the transformation that we are seeing everyday with our own eyes. Practices like those discussed in this research and that I have had the opportunity to be involved in, are not only situated but perform and actively contribute to the digital and knowledge economy that defines our society.

I share a similar hope and vision to that of McLuhan in seeing the potential of digital media to enable a

... re-tribalization through organic transformation of the world in which everything resonates with everything else as in a total electrical field, a world in which energy is generated and perceived not by the traditional connections that create linear, causative thought processes, but by the intervals, or gaps, which create synaesthetic discontinuous integral consciousness.⁶⁵

As the artificial and informational realms are increasingly becoming more entangled, if not at all suppressing the natural, a way to move towards a new form of connected, re-tribalised society, is by using our physical body as a vehicle of resonance. As researchers and creative practitioners in this networked reality we are offered an opportunity, and the responsibility that comes with it, to facilitate the connections between things, people, their bodies and senses, spaces and time, by designing magical resonances with the ancient, present, future, inanimate, material, artificial and natural. This entanglement is – at the same time – pervasive and loose, as it allows freedom to connect and interact with anything that exists, could exist or has existed in the world, to bring the past back to life and to foresee what the future has set aside for us to explore.

- 1 Glanville, R. & Van Schaik, L., 2008. Designing Reflections: Reflections on Design. , pp.35–42, p.36.
- 2 Bradford, M. & Thomassen, A., 2009. Theory as Process: “Keiko” and “Co- Creative Movement”. In *IASDR Conference*. COEX, Seoul.
- 3 Greenberg, S., 2012. The Vital Museum. In S. MacLeods, ed. *Reshaping Museum Space. Architecture, Design, Exhibitions*. London; New York: Routledge, pp. 226–236.
- 4 Greenberg, S., 2012, *Ibid*, p.226.
- 5 Greenberg, S., 2012, *Ibid*, p.227.
- 6 Greenberg, S., 2012, *Ibid*, p.227.
- 7 Greenberg, S., 2012, *Ibid*, p.228.
- 8 Greenberg, S., 2012, *Ibid*, p.228.
- 9 Greenberg, S., 2012, *Ibid*, p.229.
- 10 Greenberg, S., 2012, *Ibid*, p.229.
- 11 Greenberg, S., 2012, *Ibid*, p.230.
- 12 Irigaray, L., 2010. The Ethical Gesture towards the Other. *Poligrafi*, 15(57), pp.3–24, p.3.
- 13 Irigaray, L., 2010, *Ibid*, p.3,4.
- 14 Irigaray, L., 2010, *Ibid*, p.7.
- 15 Irigaray, L., 2010, *Ibid*, p.8.
- 16 Irigaray, L., 2010, *Ibid*, p.9.
- 17 Irigaray, L., 2010, *Ibid*, p.9.
- 18 Irigaray, L., 2010, *Ibid*, p.13.
- 19 Irigaray, L., 2010, *Ibid*, p.14.
- 20 Witcomb, A., 2007. An Architecture of Rewards: A New Poetics to Exhibition Design? *Museology e-journal*, (4), pp.19–33, p.20.
- 21 Witcomb, A., 2007, *Ibid*, p.28.
- 22 McAuley, G., 2003. BodyWeather in the Central Desert of Australia: towards an ecology of performance. In C. Hamon-Siréjols & A. Surgers, eds. *Theatre: Espace Sonore, Espace Visuel*. Lyon: Presses Univeritaires de Lyon, pp. 231–242. Available at: http://dequinceyco.net/wp-content/uploads/2010/10/gm_firt_2000.pdf, p.232.
- 23 McAuley, G., 2003, *Ibid*, p.231.
- 24 McAuley, G., 2003, *Ibid*, p.237.
- 25 Balsamo, A., 2011. Designing :: techno | culture. *Blog*. Available at: <http://www.designingculture.net/blog/?p=694> [Accessed March 20, 2013].
- 26 Balsamo, A., 2011. *Ibid*.
- 27 Written comments from participants in the boat tour held in Liverpool, on 6 October 2012. Retrieved from the audience questionnaires.
- 28 *Ibid*.
- 29 Skora, K., 2007. The Pulsating Heart and its Divine Sense Energies: Body and Touch in Abhinavagupta’s Trika Saivism. *Numen*, 54, pp.420–458, p.426.
- 30 Chretien, J.-L., 2004. The Call and the Response. In *Perspectives in Continental Philosophy*, Translated by Davenport, A.A. ed. New York: Fordham University Press, p. xxix + 149, p.86.
- 31 Agamben, G., 2007. *Profanations*, New York: Zone Books, p.74.
- 32 Agamben, G., 2007, *Ibid*, p.81.
- 33 Nora, P., 1989. Between memory and history: Les lieux de mémoire. *Representations*, 26, pp.7–24, p.19.
- 34 Fernandes, A., 2007. *Op.cit.*.
- 35 Fernandes, A., 2007, *Op.cit.*
- 36 Gibson, J.J., 1962, *Op.cit.*, p.477.
- 37 Witcomb, A., 2012, *Op.cit.* p.45.
- 38 Bennett, J., 2005. *Empathic Vision: Affect, Trauma, and Contemporary Art*, California: Stanford University Press, p.25.
- 39 Witcomb, A., 2012, *Op.cit.* p.45.
- 40 Wehner, K. & Sear, M., 2010, *Op.cit.*, p.146.
- 41 2013. The Universal Addressability of Dumb Things. *Exhibition at Southbank Centre, London*. Available at: <http://www.southbankcentre.co.uk/find/hayward-gallery-and-visual-arts/hayward-touring/future/the-universal-addressability-of-dumb-things> [Accessed March 5, 2013].
- 42 2013. The Universal Addressability of Dumb Things, *Ibid*.
- 43 Csikszentmihalyi, M., 1991. Notes on museum experiences. In *Insights, visitors, attitudes, expectation: A focus group experiment*. Los Angeles: Getty Center for Education in the Arts and the J. Paul Getty Museum, pp. 123–131, p.125.
- 44 Csikszentmihalyi, M., 1991, *Ibid*, p.125.
- 45 Csikszentmihalyi, M., 1991, *Ibid*, p.126.
- 46 Csikszentmihalyi, M., 1991, *Ibid*, p.127.
- 47 Csikszentmihalyi, M., 1991, *Ibid*, p.128.
- 48 Csikszentmihalyi, M. & Robinson, R.E., 1991. *The Art of Seeing: An Interpretation of the Aesthetic Encounter*, Los Angeles: J. Paul Getty Museum Publications, p.18.
- 49 Folkmann, M.N., 2010. Evaluating Aesthetics in Design: A Phenomenological Approach. *Design Issues*, 26(1), pp.40–53, p.47.
- 50 Folkmann, M.N., 2010, *Ibid*, p.49.
- 51 Folkmann, M.N., 2010, *Ibid*, p.49.
- 52 Folkmann, M.N., 2010, *Ibid*, p.52.
- 53 Folkmann, M.N., 2010, *Ibid*, p.52.
- 54 Davies, C., 1995. Osmose : Notes on being in immersive virtual space. In *ISEA, 6th International Symposium on electronic art*. Montréal, pp. 51–56, p.52.
- 55 Sandnell, R., 2012. Constructing and communicating equality The social agency of museum space. In S. MacLeod, ed. *Reshaping Museum Space. Architecture, Design, Exhibitions*. London; New York: Routledge, pp. 185–200, p.186.
- 56 Greenberg, S., 2012, *Op.cit.*, pp. 232,-233.

- 57 Pinna, G., 2012. European Museums as Agents of Inclusion. In L. Basso Peressut & C. Pozzi, eds. *Museums in an age of migration*. Milano: Politecnico di Milano, pp. 131–138, p.131.
- 58 Pinna, G., 2012, *Ibid*, p.136.
- 59 Angus, A. & Lane, G., 2012. Public Goods. A survey of the common wealth. *Proboscis*. Available at: <http://proboscis.org.uk/projects/ongoing/public-goods/> [Accessed July 10, 2013].
- 60 Gemeinboeck, P. & Saunders, R., 2011. Other Ways Of Knowing: Embodied Investigations of the Unstable, Slippery and Incomplete. *Fibreculture Journal*, 18(120), pp.1–23, p.16.
- 61 Gemeinboeck, P. & Saunders, R., 2011, *Ibid*, p.18.
- 62 Gemeinboeck, P. & Saunders, R., 2011, *Ibid*, p.18.
- 63 Gemeinboeck, P. & Saunders, R., 2011, *Ibid*, p.19.
- 64 Norden, E., 1969 (March), The Playboy Interview: Marshall McLuhan. *Playboy Magazine*, p.1.
- 65 Norden, E., 1969, *Ibid*, p.2.

BIBLIOGRAPHY

Books, Journal Articles, Conference Proceedings

- Aarseth, E.J., 2003. Nonlinearity and Literary Theory. In N. Wardrip-Fruin & N. Montford, eds. *The new media reader*. Cambridge, Mass.: MIT Press, pp. 762–780.
- Agamben, G., 2007. *Profanations*, New York: Zone Books.
- Agamben, G., 1993. *Infancy and History*, London: Verso.
- Aristotle, 1984. *De Anima* H. trans. Lawson-Tancred, ed., London: Penguin.
- Ashworth, G.J. & Tunbridge, J.E., 1996. *Dissonant Heritage: The Management of the Past as a Resource in Conflict*, New York: Wiley.
- Ashworth, G.J. & Tunbridge, J.E., 1996. *Dissonant Heritage: The Management of the Past as a Resource in Conflict*, New York: Wiley.
- Bakker, S., Hoven, E. Van Den & Eggen, B., 2013. FireFlies : Physical Peripheral Interaction Design for the Everyday Routine of Primary School Teachers. In TEI. Barcelona: ACM. Available at: <http://www.elisevandenhoven.com/publications/bakker-tei13.pdf>
- Balzola, A. & Rosa, P., 2011. *L' arte fuori di sé. Un manifesto per l'età post-tecnologica*, Milano: Feltrinelli.
- Bann, S., 1995. Shrines, Curiosities and the Rhetoric of Display. In Ly. Cooke & P. Wollen, eds. *Visual Display: Culture Beyond Appearances*. Seattle: Bay Press, pp. 14–29.
- Barker, T., 2009. Toward a Process Philosophy for Digital Aesthetics. In *Proceedings of the International Symposium on Electronic Arts 09 (ISEA09)*. Belfast.
- Barrett, E. & Bolt, B., eds., 2007. *Practice as research : approaches to creative arts enquiry*. London: Tauris.
- Bearman, D., Geber & K., 2007. Enhancing the Role of Cultural Heritage Institutions through New Media: Transformational Agendas and Projects. In ICHIM07. Toronto, Canada. Available at: <http://www.archimuse.com/ichim07/papers/bearman/bearman.html>.
- Bell, G. & Dourish, P., 2006. Yesterday's tomorrows: notes on ubiquitous computing's dominant vision. *Personal and Ubiquitous Computing*, 11(2), pp.133–143. Available at: <http://www.springerlink.com/index/10.1007/s00779-006-0071-x> [Accessed October 27, 2012].
- Benjamin, W., 1999, (First ed. 1950) *The Storyteller. Reflections on the Work of Nikolai Leskov*. In *Illuminations*. New York: Schocken, pp. 83–109.
- Bennett, T., 2006. Exhibition, Difference, and the Logic of Culture. In I. Karp & C. A. Kratz, eds. *Museum frictions : public cultures/global transformations*. Durham, N.C. London: Duke University Press, pp. 46–69.
- Bennett, T., 1995. *The birth of the museum: history, theory, politics*, London: Routledge.
- Best, S., 2002. What is Affect ? Considering the Affective Dimension of Contemporary Installation Art. *Australian and New Zealand Journal of Art*.
- Bhabha, H.K., 2004. *The location of culture*, London: Routledge.
- Bolland, A., 2000. Desiderio and Diletto: Vision, Touch, and the Poetics of Bernini's Apollo and Daphne. *The Art Bulletin*, 82(2), pp.309–330.
- Bolt, B., 2004. *Art Beyond Representation: The Performative Power of the Image*, London: Tauris.
- Bonenfant, Y., 2008. Sound, touch, the felt body and emotion: Toward a haptic art of voice. *SCAN | journal of media arts culture*, 5(3).
- Bongers, A. J. & Mery, A., 2008. Interactivated Reading table. In OZCHI 2008. Cairns, QLD, Australia.
- Bongers, A. J., 2006. *Interactivation: Towards an E-cology of People, Our Technological Environment, and the Arts*, Lulu.com.

- Bongers, A. J. & Harris, Y., 2002. A Structured Instrument Design Approach : The Video-Organ. In Proceedings of the NIME Conference on New Instruments for Musical Expression. Dublin, pp. 1–6.
- Bongers, A. J., 2000. Physical Interfaces in the Electronic Arts Interaction Theory and Interfacing Techniques for Real-time Performance. In M. M. Wanderley & M. Battier, eds. *Trends in Gestural Control of Music*. Centre Pompidou: IRCAM, pp. 41–70.
- Bongers, B. & Harris, Y., 2002. A Structured Instrument Design Approach : The Video-Organ. In *Proceedings of the NIME Conference on New Instruments for Musical Expression*. Dublin, pp. 1–6.
- Bongers, B., 2000. Physical Interfaces in the Electronic Arts Interaction Theory and Interfacing Techniques for Real-time Performance. In M. M. Wanderley & M. Battier, eds. *Trends in Gestural Control of Music*. Centre Pompidou: IRCAM, pp. 41–70.
- Bourdieu, P., 1990. *The logic of practice*, Cambridge UK: Cambridge University Press.
- Bourriaud, N., 2002. *Relational aesthetics*, Dijon: Les presses du réel.
- Bradford, M. & Thomassen, A., 2009. Theory as Process: “Keiko” and “Co-Creative Movement.” In *IASDR Conference*. COEX, Seoul.
- Brown, B., 2003. *A Sense of Things: The Object Matter of American Literature*, Chicago: University of Chicago Press.
- Butler, J., 1999. *Gender trouble: feminism and the subversion of identity*, New York: Routledge.
- Büscher, M., Urry, J. & Witchger, K., eds. 2010, *Mobile methods*. New York: Routledge.
- Calvino, I., 1984, *Collezione di Sabbia*. Milano: Garzanti.
- Candlin, F., 2008. Museums, Modernity and the Class Politics of Touching Objects. In H. J. Chatterjee, ed. *Touch in Museums. Policy and Practice in Object Handling*. Oxford, UK: Berg, pp. 9–20.
- Caraceni, S., 2012. From the musas to the giant squid. *Technoetic Arts: A Journal of Speculative Research*, 10(1), pp.11–16.
- Careri, F., 2002. *Walkscapes* G. Gili, ed., Barcelona.
- Carter, P., 2009. Regions of Care in Theory and Practice. In *Deakin Creative' and the real-world research economy*. Deakin University Australia, pp. 1–14.
- Carter, P., 2007. Interest: The Ethics of Invention. In E. Barrett & B. Bolt, eds. *Practice as research : approaches to creative arts enquiry*. London: Tauris, pp. 15–25.
- Carter, P., 2004. *Material Thinking : the theory and practice of creative research.*, Carlton, Vic.: Melbourne University Publishing.
- Cederna, G., 2004. La storia siamo noi. In M. Fiorillo, F. Pelini, & P. Ranieri, eds. *Museo Audiovisivo della Resistenza delle province di Massa Carrara e La Spezia*. Sarzana, pp. 19–22.
- Cederna, G., 2004. Intervista a Paolino Ranieri. In M. Fiorillo, F. Pelini, & P. Ranieri, eds. *Museo Audiovisivo della Resistenza delle province di Massa Carrara e La Spezia*. Sarzana: Res Edizioni, pp. 23–29.
- Chakrabarty, D., 2002. Museums in Late Democracies. *Humanities Research*, IX(1), pp.5–12.
- Chatterjee, H.J. ed., 2008.. *Touch in Museums. Policy and Practice in Object Handling*. Oxford, UK: Berg.
- Chretien, J.-L., 2004. The Call and the Response, in *Perspectives in Continental Philosophy*. Translated by Davenport. A.A, New York: Fordham University Press, p. xxix + 149.
- Classen, C. & Howes, D., 2008. The museum as sensescape: Western sensibility and indigenous artefacts. In C. Godsen & R. Phillips, eds. *Sensible Objects: Colonialism, Museums and Material Culture*. Oxford, UK: BergGodsen, C., pp. 192–222.
- Clifford, J., 1997. *Routes. Travel and Translation in the Late Twentieth Century*, Cambridge, MA: Harvard University

BIBLIOGRAPHY

Press.

- Cooke, L. & Wollen, P. eds., 1995. *Visual Display. Culture beyond Appearances*, New York: The New Press.
- Cranny-Francis, A., 2013. Sculpture as deconstruction: the aesthetic practice of Ron Mueck, *Visual Communication*, 1(12), pp. 3-25.
- Cranny-Francis, A., 2010. *Object Workshop*, Paper presented at Transforming Culture Research Centre Seminar Series, Faculty of Arts and Social Sciences UTS, Sydney.
- Cranny-Francis, A., 2008. Biopolitics of the senses: touch, sound and embodied being. *SCAN | journal of media arts culture*, 5(3). Available at: http://scan.net.au/scan/journal/display_synopsis.php?j_id=15.
- Cranny-Francis, A., 2008. Sonic Assault to Massive Attack: touch, sound and embodiment. *SCAN | journal of media arts culture*, 5(3).
- Cranny-Francis, A., 2008. From extension to engagement: mapping the imaginary of wearable technology. *Visual Communication*, 7(3), pp.363–382. Available at: <http://vcj.sagepub.com/cgi/doi/10.1177/1470357208092325> [Accessed December 10, 2012].
- Csikszentmihalyi, M., 1991. Notes on museum experiences. In *Insights, visitors, attitudes, expectation: A focus group experiment*. Los Angeles: Getty Center for Education in the Arts and the J. Paul Getty Museum, pp. 123–131.
- Csikszentmihalyi, M. & Robinson, R.E., 1991. *The Art of Seeing: An Interpretation of the Aesthetic Encounter*, Los Angeles: J Paul Getty Museum Publications.
- Dalsgaard, P. & Koefoed-Hansen, L., 2008. Performing perception—staging aesthetics of interaction. *ACM Transactions on Computer-Human Interaction*, 15(3 Article No. 13).
- Daugbjerg, M., 2011. Playing with fire : struggling with experience and play in war tourism. *Museum and Society*, 9(1), pp.17–33.
- Davies, C., 1995. Osmose : Notes on being in immersive virtual space. In *ISEA, 6th International Symposium on electronic art*. Montréal, pp. 51–56.
- De Martino, E., 2002. *La fine del mondo. Contributo all'analisi delle apocalissi culturali* C. Gallini & M. Marcello, eds., Torino: Einaudi.
- Dewey, J., 1979. *Art as Experience*, New York: Paragon Books.
- Don, A., 1990. Narrative and the Interface. In *he Art of human-computer interface design*. Reading Mass: Addison-Wesley Pub. Co., pp. 296–309.
- Dourish, P., 2001. *Where the action is : the foundations of embodied interaction*, Cambridge, Mass ; London: MIT Press.
- Drago, A., 2013. Digital engagement in museums. Available at: <http://silencememoryempathy.wordpress.com/2013/01/03/digital-engagement-in-museums/>.
- Iverson, H. & Drury, S., 2011. Untitled (Mechanics of Place). *ISEA*. Available at: <http://isea2011.sabanciuniv.edu/workshop/untitled-mechanics-of-place> [Accessed July 10, 2013].
- Dudley, S., 2012. Materiality Matters: Experiencing the Displayed Object. *UM Working Papers in Museum Studies*, 8, pp.1–9. Available at: www.ummsp.lsa.umich.edu.
- Dudley, S., 2012. Objects, collectors and representations. In S. Dudley et al., eds. *Narrating Objects, Collecting Stories*. London; New York: Routledge, pp. 1–9.
- Duncan, C., 1995. *Civilizing rituals: inside public art museums*, London: Routledge.
- Dziekian, V., 2012. *Virtuality and the art of exhibition : curatorial design for the multimedial museum*, Bristol: Intellect.
- Eco, U., 1962. *Opera Aperta* Bombiani., Milano.
- Ernst, M.O. & Banks, M.S., 2002. Humans integrate visual and haptic information in a statistically optimal

BIBLIOGRAPHY

- fashion. *Nature*, 415, pp.429–433.
- Fernandes, A., 2007. Belongings: post-WW2 migration memories & journeys. In *Proceedings of Moving Cultures, Shifting Identities: a conference about migration, connection, heritage and cultural memory*. Adelaide.
- Fiorillo, M., Pelini, F. & Ranieri, P., 2004. *Museo Audiovisivo della resistenza delle province di Massa Carrara e La Spezia*, Sarzana: Res Edizioni.
- Flick, K. & Goodall, H., 1998. Angledool stories. In R. Perks & A. Thomson, eds. *The oral history reader*. New York: Routledge, pp. 420–431.
- Folkmann, M.N., 2010. Evaluating Aesthetics in Design: A Phenomenological Approach. *Design Issues*, 26(1), pp.40–53.
- Foucault, M., 1986. Of Other Spaces. *Diacritics*, 16(1), pp.22–27.
- Galloway, A., 2008. *A Brief History of the Future of Urban Computing and Locative Media*. Carleton University, Ottawa, Ontario.
- Gaver, W.W., Beaver, J. & Benford, S., 2003. Ambiguity as a Resource for Design. *Letters CHI*, 5(1), pp.233–240.
- Gehl, J., 2011 (First ed. in English 1987). *Life Between Buildings - using public space*, Washington DC: Island Press., Translated by Koch, J. from the Danish text (1971), Gell, A., 1992. The technology of enchantment and the enchantment of technology. In J. Coote & A. Shelton, eds. *Anthropology, Art, and Aesthetics*. Oxford: Oxford: Clarendon Press book.
- Gemeinboeck, P. & Saunders, R., 2011. Other Ways Of Knowing: Embodied Investigations of the Unstable, Slippery and Incomplete. *Fibreculture Journal*, 18(120), pp.1–23.
- Gere, C., 1997. Museums, Contact Zones and the Internet. *Archives & Museum Informatics*, pp.59–66.
- Gibson, J.J., 1986. *The Ecological Approach to Visual Perception*, London; New York: Routledge.
- Gibson, J.J., 1962. Observation on Active Touch. *Psychological Review*, 69(6), pp.477–491.
- Glanville, R. & van Schaik, L., 2008. *Designing Reflections: Reflections on Design*, RMIT. Melbourne. Available at: www.designresearchsociety.org/docs-procs/ded3/d_final_paper/d_08.pdf. [Accessed July 2013]
- Goodall, H. & Cadzow, A., 2009. *Rivers and resilience: Aboriginal people on Sydney's Georges River*, Sydney: UNSW Press.
- Graves-Brown, P., ed. 2000. *Matter, Materiality and Modern Culture*. London: Routledge.
- Gray, C., 1996. Inquiry through practice: developing appropriate research strategies. Available at: www2.rgu.ac.uk/criad/cgpapers/ngnm/ngnm.htm [Accessed January 23, 2010].
- Greenberg, S., 2012. The Vital Museum. In S. MacLeods, ed. *Reshaping Museum Space. Architecture, Design, Exhibitions*. London; New York: Routledge, pp. 226–236.
- Greenblatt, S., 1991. Resonance and Wonder. In I. Karp & S. D. Lavine, eds. *Exhibiting cultures: the poetics and politics of museum display*. Washington: Smithsonian Institution Press, pp. 42–56.
- Greeves, S. & Wiggins, C., 2003. *Ron Mueck*, Canberra: National Gallery Publications.
- Hall, M., 2006. The Reappearance of the Authentic. In I. Karp & C. A. Kratz, eds. *Museum frictions : public cultures/ global transformations*. Durham, N.C. London: Duke University Press, pp. 70–101.
- Haraway, D., 1988. Situated knowledges: The Science Question in Feminism and the Privilege of Partial Perspective. *Feminist Studies*, 14, pp.575–599.
- Haseman, B., 2006. A Manifesto for performative research. *Media International Australia incorporating Culture and Policy*, 118, pp.98–106.
- Hazan, S., 2013. Holding the museum in the palm of your hand. In *XI Culture and Computer Science*. Berlin.

BIBLIOGRAPHY

- Hazan, S., 2011. Cultural quality and crowd control. *InformatieProfessional*, 10, pp.28–35.
- Hazan, S., 2003. The Musesphere and the E-Museum. In *Visual Knowledges Conference*. The University of Edinburgh, pp. 1–20.
- Hazan, S., 2001. The Virtual Aura - Is There Space for Enchantment in a Technological World? In *Museum and the Web*. Toronto: Archives and Museum Informatics. Available at: <http://www.museumsandtheweb.com/mw2001/papers/hazan/hazan.html>.
- Heath, C. & vom Lehm, D., 2004. Configuring Reception (Dis-)Regarding the “Spectator” in Museums and Galleries. *Theory, Culture & Society*, 21(6), pp.43–65.
- Hemment, D., 2008. Dislocate – Art, Technology, Locality. *Paper presented at the ZAIM Symposium*. Available at: <http://dislocations.wordpress.com/symposium/drew-hemment/> [Accessed March 20, 2013].
- Henning, M., 2006. *Museums, Media and Cultural Theory*, Maidenhead: Open University Press.
- Hetherington, K., 2003. Accountability and disposal: Visual impairment and the Museum. *Museum and Society*, 1(2), pp.104–115.
- Hohl, M., 2009. Calm Technologies 2.0: Visualising Social Data as an Experience in Physical Space. *Parsons Journal for Information Mapping*, 1(3), pp.1–7.
- Hooper-Greenhill, E., 2004. Studying Visitors. In S. Macdonald, ed. *A Companion to Museum Studies*. Oxford: Blackwell Publishing, pp. 363–376.
- Hooper-Greenhill, E., 2000. *Museums and the Interpretation of Visual Culture*, New York: Routledge.
- Hooper-Greenhill, E., 1992. *Museums and the shaping of knowledge*, London: Routledge.
- Hourston Hanks, L., Hale, J. & MacLeod, S. eds., 2012. *Museum Making: Narratives, Architectures, Exhibitions*, Abingdon, UK, New York: Routledge.
- Howes, D., 2005. *Empire of the Senses: The Sensual Culture Reader*, Oxford: Berg.
- Huhtamo, E., 1995. Encapsulated Bodies in Motion: Simulators and the Quest for Total Immersion. In S. Penny, ed. *Critical issues in electronic media*. Albany: State University of New York Press, pp. 158–186.
- Irigaray, L., 2013. *In the beginning, she was*, London: Bloomsbury.
- Irigaray, L., 2010. The Ethical Gesture towards the Other. *Poligrafi*, 15(57), pp.3–24.
- Irigaray, L., 2008. *Sharing the World*, London: Continuum.
- Janesick, V.J., 2003. The Choreography of Qualitative Research Design: Minuets, Improvizations and Crystallization. In N. Denzin & Y. Lincoln, eds. *Strategies of Qualitative Research*. London: Sage, pp. 46–79.
- Jankowicz, M., 2009. Polished-up notes for a panel discussion. Paper presented at the Women and the Archive: A Partial Disclosure.
- Johnson, L., 2006. Valuing the Arts: Theorising and Realising Cultural Capital in an Australian City. *Geographical Research*, 44(3), pp.296–309.
- Karp, I & Kratz, C.A. eds., 2006. *Museum frictions : public cultures/global transformations*. Durham, N.C. London: Duke University Press.
- Karp, I. & Lavine, S.D. eds., 1991. *Exhibiting Cultures: The Poetics and Politics of Museum Display*, Washington: Smithsonian Institution Press.
- Karpovich, A. et al., 2010. Tagging is Connecting : Shared Object Memories as Channels for Sociocultural Cohesion. *M/C Journal*, 3(1). Available at: <http://journal.media-culture.org.au/index.php/mcjournal/article/viewArticle/209>.
- Kenderdine, S. & Schettino, P., 2011. Place-Hampi: Narratives of Inclusive Cultural Experience. *The International*

- Journal of the Inclusive Museum*, 3(3), pp.141–156.
- Kenderdine, S., 2010. Immersive visualization architectures and situated embodiments of culture and heritage. In *14th International Conference Information Visualisation, London*. Washington: IEEE, pp. 408–414.
- Kenderdine, S., Shaw, J. & Kocsis, A., 2009. Dramaturgies of PLACE : Evaluation , Embodiment and Performance in PLACE- Hampi. In *Proceedings of the International Conference on Advances in Computer Entertainment Technology*. New York: ACM, pp. 249–256.
- Kenderdine, S., 2008. An entanglement of people-things: Place-Hampi. *International Journal of Digital Culture and Electronic Tourism*, 1(2/3), pp.139–156. Available at: <http://www.inderscience.com/link.php?id=21404>.
- Kenderdine, S., 2008. The Irreducible Ensemble: Place-Hampi. *Virtual Systems and Multimedia Lecture Notes in Computer Science*, 4280, pp.58–72.
- Kenderdine, S., 2007. Somatic solidarity, Magical Realism and Animating Popular Gods: Place-Hampi “where intensities are felt.” In *11th International Conference on Information Visualisation (IV’07)*. Zurich: IEEE Computer Society. Available at: www.place-hampi.museum/contents/research1.html.
- Kjeldbaek, E. ed., 2009. *The Power of the Object: Museums and World War II*, Edinburgh: MuseumEtc.
- Kocsis, A., 2009. Designing with the experiential in digitally augmented exhibitions. In *Cumulus 38° Conference, Shifts in art + design practice and technology*. pp. 1–15.
- Kwint, M., 1999. The Physical Past. In M. Kwint, C. Breward, & J. Aynsley, eds. *Material memories*. Oxford: Berg, pp. 1–16.
- Kwint, M., 1999. The Physical Past. In M. Kwint, C. Breward, & J. Aynsley, eds. *Material memories*. Oxford: Berg, pp. 1–16.
- Macdonald, S., 2007. Interconnecting: museum visiting and exhibition design. *CoDesign International Journal of Co Creation in Design and the Arts*, 3(1), pp.149–162.
- Manovich, L., 2001. *The language of new media*, Cambridge, Mass.: MIT Press.
- Marinetti, F.T., 2005. Le tactilisme (manifeste futuriste). In S. Duplax & M. Lista, eds. *Sons et lumières: Une histoire du son dans l’art du vingtième siècle*. Albany: State University of New York Press.
- McAuley, G., 2003. BodyWeather in the Central Desert of Australia: towards an ecology of performance. In C. Hamon-Siréjols & A. Surgers, eds. *Theatre: Espace Sonore, Espace Visuel*. Lyon: Presses Univeritaires de Lyon, pp. 231–242. Available at: http://dequinceyco.net/wp-content/uploads/2010/10/gm_firt_2000.pdf.
- McGinity, M. et al., 2007. AVIE: A Versatile Multi-User Stereo 360° Interactive VR Theatre. In *Emerging Display Technologies, San Diego CA*. New York: ACM.
- McGlone, F., 2008. The Two Sides of Touch: Sensing and Feeling. In H. . J. Chatterjee, ed. *Touch in Museums. Policy and Practice in Object Handling*. Oxford, UK: Berg Publications, pp. 41–60.
- McLuhan, M., 2003 (1st ed. 1967). *Understanding media : the extensions of man*, Corte Madera, CA: Gingko Press.
- Mendini, A., 1981. *Architettura Addio*, Milano: Shakespeare and Company.
- Moggridge, B. ed., 2006. *Designing Interactions*, Cambridge, MA and London, England: MIT Press.
- Montagu, A., 1986. (1st ed. 1971) *Touching: The Human Significance of the Skin*, New York: Harper & Row.
- Munari, B., 2004. *I Laboratori Tattili*, Mantova: Corraini Editore.
- Munster, A., 2006. *Materializing new media : embodiment in information aesthetics*, Dartmouth, N.H.: Dartmouth College Press.
- Myers, F., 2006. The Complicity of Cultural production: The Contingencies of Performance in Globalizing Museum Practices. In I. Karp & C. A. Kratz, eds. *Museum frictions : public cultures/global transformations*. Durham, N.C. London: Dartmouth College Press, pp. 505–535.

BIBLIOGRAPHY

- Nora, P., 1989. Between memory and history: Les lieux de mémoire. *Representations*, 26, pp.7–24.
- Norden, E., The Playboy Interview: Marshall McLuhan. *Playboy Magazine*.
- Norman, D., 2002(First ed. 1988) *The Design of Everyday Things*, New York: Basic books. Ong, W.J., 1988. *Orality and literacy : the technologizing of the word*, London; New York: Routledge.
- Ong, W.J., 1988. *Orality and literacy : the technologizing of the word*, London; New York: Routledge.
- Ong, W.J., 1972. A Dialectic of Aural and Objective Correlatives. In D. Lodge, ed. *Twentieth Century Literary Criticism*. London: Longman, pp. 498–508.
- Pallasmaa, J., 2005. *The eyes of the skin: architecture and the senses*, Chichester, England: John Wiley & Sons.
- Parry, R., 2007. *Recoding the Museum: Digital Heritage and the Technologies of Change*, London: Routledge.
- Parry, R., 2007. Digital heritage and the rise of theory in museum computing. *Museum Management and Curatorship*, 20, pp.333–348.
- Paterson, M., 2007. *The Senses of Touch. Haptics, Affect and Technologies*, Oxford, UK: Berg.
- Pearce, S., 1999. Collecting as medium and message. In E. Hooper-Greenhill, ed. *Museum, media, message*. London: Routledge, pp. 15–23.
- Penny, S., 2003. Representation, Enaction, and the Ethics of Simulation. In N. Wardrip-Fruin & P. Harrigan, eds. *First person: new media as story, performance, and game*. Cambridge, Mass.: MIT Press, pp. 73–84.
- Picard, R., 1997. *Affective computing*, Cambridge, MA: MIT Press. Pine, B.J. & Gilmore, J.H., 2011. *The experience economy*, Boston, Mass: Harvard Business Review Press.
- Pinna, G., 2012. European Museums as Agents of Inclusion. In L. Basso Peressut & C. Pozzi, eds. *Museums in an age of migration*. Milano: Politecnico di Milano, pp. 131–138.
- Pinney, C. & Wagner, R., 2004. *Photos of the Gods: The Printed Image and Political Struggle in India*, London: Reaktion Books.
- Pahl, K. & Pollard, A., 2010. The Case of the disappearing object : narratives and artefacts in homes and a museum exhibition from Pakistani heritage families in South Yorkshire. , 8(1), pp.1–17.
- Portelli, A., 1998. What makes oral history different. In R. Perks & A. Thomson, eds. *The oral history reader*. Cambridge, Mass.: MIT Press, pp. 63–74.
- Pratt, M.L., 1991. Arts of the Contact Zone. *Profession 91*, pp.33–40.
- Preziosi, D., 1996. Collecting/Museums. In R. Nelson & R. Schiff, eds. *Critical terms of Art History*. Chicago: Chicago Press.
- Prosser, J., 2001. Skin memories. In S. Ahmed & J. Stacey, eds. *Thinking through the skin*. London: Routledge, pp. 52–68.
- Rebelo, P. & Schroeder, F., 2006. Performing the Order: The messiness of play. *Performance Research*, 11(1), pp.3–8. Available at: <http://www.tandfonline.com/doi/abs/10.1080/13528160600807372> [Accessed December 10, 2012].
- Rebelo, P., 2006. Haptic Sensation and Instrumental Transgression. *Contemporary Music Review*, 25(1/2), pp.27–35.
- Rogoff, I., 2010. Exhausted Geographies. In *Crossing Boundaries Symposium*. London: Royal Geographical Society.
- Rokeby, D., 2000. Artist's statement for Very Nervous System. Available at: <http://homepage.mac.com/davidrokeby/vns.html> [Accessed April 6, 2010].
- Rokeby, D., 1995. Transforming Mirrors: Subjectivity and Control in Interactive Media. In S. Penny, ed. *Critical issues in electronic media*. Albany: State University of New York Press, pp. 133–158.

BIBLIOGRAPHY

- Rosa, P., 2011. Multimedialita', linguaggi, musei di narrazione. In E. Tavani, ed. *Parole ed estetica dei nuovi media*. Roma: Carrocci, pp. 163–170.
- Rosa, P., 2004. Il tavolo della memoria. In M. Fiorillo, F. Pelini, & P. Ranieri, eds. *Museo Audiovisivo della Resistenza delle province di Massa Carrara e La Spezia*. Sarzana, pp. 41–45.
- Rose, G., 2000. *Visual Methodologies. An introduction to the interpretation of visual materials*, London, Thousand Oaks, New Delhi: SageLo.
- Rumsey, A., 1994. The dreaming, human agency and inscriptive practice. *Oceania*, 62(2), pp.116–130.
- Sandnell, R., 2012. Constructing and communicating equality The social agency of museum space. In S. MacLeod, ed. *Reshaping Museum Space. Architecture, Design, Exhibitions*. London; New York: Routledge, pp. 185–200.
- Schroeder, F., 2006. Bodily instruments and instrumental bodies: Critical views on the relation of body and instrument in technologically informed performance environments. *Contemporary Music Review*, 25(1-2), pp.1–5. Available at: <http://www.tandfonline.com/doi/abs/10.1080/07494460600647360> [Accessed December 10, 2012].
- Scolari, C.A., 2009. Transmedia Storytelling : Implicit Consumers , Narrative Worlds , and Branding in Contemporary Media Production. *International Journal of Communication*, (3), pp.586–606.
- Shepard, M., 2011. Forget Locative Media. In *ISEA - Beyond Locative: Media Arts after the Spatial Turn*. Istanbul. Available at: <http://isea2011.sabanciuniv.edu/panel/beyond-locative-media-arts-after-spatial-turn>.
- Simon, N., 2010. *The Participatory Museum*, www.participatorymuseum.org.
- Skora, K., 2007. The Pulsating Heart and its Divine Sense Energies: Body and Touch in Abhinavagupta's Trika Saivism. *Numen*, 54, pp.420–458.
- Sparacino, F., 2008. Natural Interaction in Intelligent Spaces: Designing for Architecture and Entertainment. *Multimedia Tools and Applications*, 38(3), pp.307–335.
- Spence, C. & Gallace, A., 2008. Making Sense of Touch. In H. J. Chatterjee, ed. *Touch in Museums. Policy and Practice in Object Handling*. Oxford, UK: Berg, pp. 21–40.
- Stewart, S., 2005. Remembering the Senses. In D. Howes, ed. *Empire of the Senses: The Sensual Culture Reader*. Oxford; New York: Berg, pp. 59–69.
- Strange, S., 2012. Creative research: A radical subjectivity? *Text*, (14).
- Thielmann, T., 2011. The place is the map: because of locative media an a-social map. In *ISEA*. Istanbul. Available at: <http://isea2011.sabanciuniv.edu/panel/beyond-locative-media-arts-after-spatial-turn>.
- Tonkin, E., 1992. *Narrating our pasts : the social construction of oral history.*, Cambridge UK, New York: Cambridge University Press.
- Townsend, A., 2006. Locative-Media Artists in the Contested-Aware City. *Leonardo*, 39(4), pp.345–347.
- Trant, J., 2009. Emerging convergence? Thoughts on museums, archives, libraries, and professional training. *Museum Management and Curatorship*, 24(4), pp.369–387. Available at: <http://www.tandfonline.com/doi/abs/10.1080/09647770903314738>.
- Trinca, M. & Wehner, K., 2006. Pluralism and exhibition practice at the National Museum of Australia. *Journal of the National Museum of Australia*, 1(1), pp.61–64.
- Turkle, S., 2007. *Evocative Objects: Things We Think With*, Cambridge, MA: MIT Press.
- Urry, J., 2004. Death in Venice. In J. Urry & M. Sheller, eds. *Tourism Mobilities. Places to Play, Places in Play*. London; New York: Routledge, pp. 205–215.
- Valli, A., 2008. The design of natural interaction. *Multimedia Tools and Applications*, 38(3), pp.295–305.
- Vanni, I., 2012. Objects and narratives of migration and place in Belongings, an Australian online material culture

BIBLIOGRAPHY

- collection. In *Migration, Memory and Place*. University of Copenhagen and Arken Museum of Modern Art, Ishøj.
- Varela, F., 1999. *Ethical Know-How*, Stanford: Stanford University Press.
- Veronesi, F. & Gemeinboeck, P., 2009. Mapping Footprints. A Sonic Walkthrough of Landscapes and Cultures. *Convergence: The International Journal of Research into New Media Technologies*, 15(3), pp.359–369.
- Veronesi, F. & Gemeinboeck, P., 2009. Disembodied Landscapes. *Performance Research*, 14(4), pp.74–80.
- Wehner, K. & Sear, M., 2010. Engaging the material world: object knowledge and Australian Journeys. In S. Dudley, ed. *Museum Materialities: Objects, Engagements, Interpretations*. London: Routledge, pp. 143–161.
- Wenders, W., 2001. A Sense of Place. In *Talk at Princeton University*. Available at: http://www.wim-wenders.com/news_reel/2001/0103princeton.htm.
- Wilton, J., 2009. Belongings : Oral History, Objects and an Online Exhibition. *Public History Review*, 16, pp.1–19.
- Witcomb, A., 2012. Using souvenirs to rethink how we tell histories of migration. Some Thoughts. In S. Dudley et al., eds. *Narrating Objects, Collecting Stories*. Abingdon: Routledge, pp. 36–55.
- Witcomb, A., 2007. An Architecture of Rewards: A New Poetics to Exhibition Design ? *Museology e-journal*, (4), pp.19–33.
- Witcomb, A., 2003. *Re-imagining the museum : beyond the mausoleum*, London; New York: Routledge.
- Witmore, C.L., 2004. Four archaeological engagements with place: mediating bodily experience through peripatetic video. *Four archaeological engagements with place: mediating bodily experience through peripatetic video*, 2(2), pp.57–72.
- Exhibitions, Public Programs:*
- The Universal Addressability of Dumb Things. *Exhibition at Southbank Centre, London*. Available at: <http://www.southbankcentre.co.uk/find/hayward-gallery-and-visual-arts/hayward-touring/future/the-universal-addressability-of-dumb-things> [Accessed March 5, 2013].
- Object Stories. Available at: <http://objectstories.org/about/index.html> [Accessed July 8, 2013].
- Antonelli, P., 2011. Talk to Me: A Symposium. *Inside/Out A MoMA/MoMA PS1 BLOG*. Available at: www.moma.org/explore/inside_out/author/pantonelli.
- Albers, I. & Franke, A., 2012. Animism, exhibition and conference. Available at: www.hkw.de/en/programm/2012/animismus/animismus_68723.php [veranstaltungen_68723/veranstaltungsdetail_71987.php](http://www.hkw.de/en/veranstaltungen/68723/veranstaltungsdetail_71987.php).
- Angus, A. & Lane, G., 2012. Public Goods. A survey of the common wealth. *Proboscis*. Available at: <http://proboscis.org.uk/projects/ongoing/public-goods/>.
- Arienti, S., 2011. I Telepati. *Fondazione Zegna, All'Aperto*. Available at: www.fondazionezegna.org/all-aperto/ [Accessed July 10, 2013].
- Butt, Z., 2011. *Dinh Q. Lê Erasure*, Paddington NSW: Sherman Contemporary Art Foundation.
- Gothe, J., 2012. Exhibition: Collaboration, Design and Country. Available at: <http://cfsites1.uts.edu.au/dab/news-events/eventarchive-detail.cfm?ItemId=29983> [Accessed July 9, 2013].
- Munro, A., 2003. Content(s): Significance and complexity in everyday objects. Available at: www.craftact.org.au/projects/contents/ [Accessed July 8, 2013].

BIBLIOGRAPHY

Web Sites, Blogs, Online Interviews, Articles

BBC Your Paintings. Uncovering the nation's art collection. Available at: www.bbc.co.uk/arts/yourpaintings/ [Accessed July 7, 2013].

BBC Turn Back Time. Available at: www.flickr.com/groups/bbcturnbacktime.

Silence Memory Empathy. *AHRC funded research network running 2012-2013*. Available at: silencememoryempathy.wordpress.com/about/.

Balsamo, A., 2011. Designing :: techno | culture. *Blog*. Available at: <http://www.designingculture.net/blog/?p=694> [Accessed March 20, 2013].

Caramellino, G., 2012. Un caffè con Paolo Rosa. *Interview*. Available at: <http://gabrielecaramellino.nova100.ilsolo24ore.com/2012/01/un-caffe?-con-paolo-rosa.html>.

Hui, Y., 2011. Interview with Jeffrey Shaw on new media art. Available at: <http://theoryculturesociety.blogspot.co.uk/2011/04/interview-with-jeffrey-shaw-on-new.html> [Accessed July 1, 2013].

Lay, N., 2013. An analysis of the Living Streams Augmented Reality project. *Natashalayonline' blog*. Available at: <http://natashalayonline.wordpress.com/about>.

New introduction

The aim of this updated introduction is to reflect back on the work, after some distance both geographical and temporal separated myself from the field and context of the research. The introduction is conceived as a space to help re-examine from a new, fresh perspective the research context and approach, review the research problems, argument and guiding principles as well as expose the issues related to evaluation and data collecting – mostly related to my parting from the research field.

Fundamental in this process of re-analysis are the critics and insights from the examiners. Looking back on the work, through the perspectives of Halina Gottlieb, Elisabeth Muller, Vince Dziekan, and of course my supervisor Bert Bongers, who took the time to read the thesis and point out strengths and weaknesses of the work – I can see the potential of the research in contributing to the discourse on the integrative approach to curatorial design and a valuable roadmap for museum practitioners, exhibition designers, curators and researchers in the field of digital heritage, interaction and experience design, museum studies.

1. Context and focus

The cultural context of the thesis is the contemporary multimedia and multicultural museum. The research focuses on exploring new opportunities for participation, access and interpretation of digital cultural heritage and as Dziekan puts it “on the capacity for a range of digital technologies to be applied towards the co-production of cultural knowledge through augmenting and/or stimulating sensory engagement and embodied experience”.

1.1 Multicultural museum as a civic technology

As Vince Dziekan's points out, the concept of 'multicultural context of museums' is the connecting thematic for the research creative practices, and their outcomes as museum exhibition projects.

With the awareness that this context is constantly in the making, broad and critical, I aimed at foregrounding the research practices within the specificity of the Australian cultural heritage context – here I am aware that many authors, as Dziekan notices, have been left unheard in framing the research theoretical and interpretive background.

Contributions of these authors have been fundamental in shaping the transcultural discourse: Mieke Bal, Miwon Know's nomadic paradigm, Appadurai's reflections on the cultural dimension of globalization, Papstergiadis' speculations on spatial aesthetics, art, place and the everyday, Enwezor's investigations on the simultaneously permanent and transitory state of Contemporary Art.

1.2 Curatorial design and cultural mediation

The research both theorises and explores by means of creative practices the inclusive role of museums in a contemporary multicultural context, drawing upon Bennet's concept of the museum as a 'differentiating machine' and Pratt's 'contact zone' – the latter I will expand further in this introduction as a guiding principle of the research.

More specifically, the research positioned within the discourse of cultural mediation experimenting a new approach to representation, interpretation of - and engagement with - contested topics and marginal histories by means of digital technologies.

The concept of 'curatorial design', borrowed from Vince Dziekan, is adopted throughout the research to inform its methods and praxis.

The research curatorial design projects, which as Gottlieb describes, "create meaningful digital artefacts using primarily archival material" have been produced in response to a range of cultural issues:

Belongings: is involved with the translation of migration memories thorough a testing responsive interface for a heritage gallery

Living Streams: applied mobile and locative technology to produce a place-specific participatory interface engaging the local community in Liverpool NSW

Resonances: a permanent museological display promoting the collective histories, social and cultural memories of Liverpool citizens.

According to Dziekan, one of the research strengths lies in "how it has extended the possibilities for applying curatorial design in libraries, archives and the museum sector. Particularly in the way the research-led projects relate to the more socialising practices associated with shared, public archive and the museum and the exhibition functions as an act of cultural translation".

I'm grateful to the examiners who understood the main purpose and motivation leading the research, as Dziekan puts it:

“The research makes a case for envisioning the multimedia museum as a civic technology, contributing to articulating the reorientation of the museological practice from the ‘pedagogical model’ to the ‘performative model’ and recognising that this transformation is political and socially enacted as much as it is constructed through museum-based communication and design”.

1.3 Performative model and methods

The research adopts methods from performative research embracing positionality, direct and creative engagement of myself as the researcher and practitioner within the context of inquiry.

I applied curatorial design as part of the process for developing an informed understanding about multimodal interfaces and exhibition design production drawing upon theory of ‘experience’ and ‘embodiment’.

This subjective, reflexive and performative approach has been undertaken to explore and articulate what Muller refers to as “the hybrid activity of ‘curatorial design’ and the theorization on the role of experience-focused and object-focused approaches to further explore participation, co-production and co-curation in digital museology”.

2. Reflection on the issues that influenced the research praxis

In June 2012 a series of personal circumstances brought me to take the decision of leaving Australia to move back to Europe.

This unpredicted circumstance affected the overall research plan, as my departure caused a physical disconnection from the research field which made impossible to follow through the post production and evaluation stages of two of the case studies - *Living Streams* and *Resonances*. At that stage the production and public launch of both projects had been completed, however, more work had to be done in terms of evaluation of the audience experience, as well as understanding the impact of the project on the local context, community, partners involved, potentially beyond the local scale.

Thereafter, any further direct engagement with the locale and the opportunity to develop strategies for audience evaluation studies became impossible.

2.1 Resonances development

Moreover, the organisations involved in the different practices, such as Liverpool City Council and Liverpool Regional Museum and Library, once very proactive and supportive in all stages leading to the project launch, became thereafter less interested in concerting

any audience evaluation strategy that could have helped assessing both quantitatively and qualitatively the impact of the projects on local communities and stakeholders involved.

The same disengagement reflected on how the partners communicated the projects on their channels, lacking an overall communication plan on digital platforms and press.

Without notice, the Living Streams web site has been deactivated after only 1 month after the project was launched

In the end note are links to extracts from the media coverage of the exhibition Resonances¹. Several attempts to contact Liverpool Museum and Library in the months following the opening, to gather insights about the visitors' response to the exhibition, failed. It was therefore impossible to fill these gaps and missing data.

Reflecting back on the process, I could see now how helpful would have been to develop before hand a strategy that made use of social media for capturing insights from both online users and onsite visitors.

This example of the Horniman museum in London highlights the potential of social media to create more dynamic and achievable digital engagement strategies also for evaluation purposes.

2.1.1 An example of using social media for user engagement and evaluation

The overall aim of the Horniman's Engage + Digital program was support to improve access to the museum's collection predominately using social media and by providing support, evaluating current initiatives, identifying opportunities for engagement, and embedding learning.

The Horniman has been continuously experimenting with their digital initiatives, as the museum lets the audience discover and explore its collections, in a range of ways through visual storytelling.

As Claire Bailey Ross points out in her blog "*Exploring Museums, Digital Technology And User Experiences*" the tone of voice and language through which the museum communicates with the audience is of utmost importance.

"The Horniman aims to try to write with a tone that is not necessarily a 'marketing tone'. But something that is friendly, human, and interested in people's opinions. For example, on Twitter they ask a lot of questions to their followers. But they style of question are ones that can actually be answered easily. Making it too hard can put people off".²

This is an example of an Instagram post written by a museum curator:

“A trio of dinosaurs on display in the natural history gallery, think you can name them?”³

Tumblr also provided an channel for staff to share their enthusiasm for the Horniman’s collection by highlighting when they found something interesting, fascinating or unusual., such as Adrian’s – Horniman’s curator - post about some finds which have been featured on tumblr including a small horse made of cheese from Poland and a vulture skull in a leather glove worn as a charm⁴.

3. Reinforcing the link between the guiding principles informing the research’s approach and the reflections of the case studies

The research problem is concerned with the reframing of the nature of participation in museums. This is explored through guiding principles from museum studies’ theory that run throughout the research.

Defined in the research interpretive framework, I used these guiding key concepts as lenses through which to examine in a critical and reflective way how the case studies related back to the research problem and argument.

3.1 Contact Zone

The ‘contact zone’ model is linked to observations about self-representation and inclusive engagement in museum-making practices. It is also the guiding principle underlying the research argument and problem which poses questions on to how curatorial design can open up a dialogue and create an interface of contact between cultures, histories and visitors that is responsive to interaction and participation.

The concept of the ‘contact zone’, derives from James Clifford’s proposed idea of museums as contact zones for cultural encounter further expanding the concept theorised by Marie Louise Pratt.

In particular the thesis builds on Pratt’s notion of contact zones, areas of encounter in which cultures can negotiate representation, shared histories and power relations with an additional layer of interpretation offered by digital technologies mediating experience and extending the ‘zone’ with new points of contact, access and engagement opportunities.

In the final chapter *Reflections*, the contact zone model is further applied as a lens through which to reframe the knowledge produced in the case studies.

This helps examining the practices contribution in the understanding of how curatorial design in the multimedia museum can enable the formation and articulation of a zone of contact between all players involved in the exhibition ecology, specifically examining the role of digital technology in facilitating the mediation and negotiating boundaries.

In the case of *'Resonances'* and *'Living Streams'* the strategy informing the curatorial design was to extend the co-curation to the local community – art, music and local history community groups.

The exhibition practices aimed at breaking down the paradigm – and traditional separation between- curators and visitors by proposing a model that is participatory, open and inclusive of the community's first hand representation of its heritage, history and view of their future.

From an experience design point of view, digital technology also has a crucial role in extending the contact between visitors, objects and space. Enabling a direct interaction between objects and their related multimedia content, the contact surface or interface that mediates the two worlds that of the viewers/listeners and that of the 'other', the testimonies is performing as an active agent in the mediation process.

Throughout the exegesis I have highlighted the importance of the role of touching in creating immersion and enabling a more spontaneous interaction with exhibition objects.

I suggest touching physical objects, hearing stories from the testimonies are powerful vehicles of empathy, engagement and necessary elements in mediating encounters.

3.2 Intimacy and otherness

This leads to the other key guiding principles I would like to mention here: 'otherness' and 'intimacy'.

The research originated from the initial aspiration of myself as a museum visitor and exhibition designer for more intimate and meaningful experiences negotiating presence and embodiment. Experiences that were capable of conveying awareness of 'otherness' in relation to the subject represented in the museum. I was looking for a more direct, unmediated and authentic ways of knowing about the 'other' and ultimately interested on how this reflected back on the visitors' own sense of self.

The case studies opened up a reflection on how curatorial design can bring forth new opportunities through haptic technologies, immersive and participatory interfaces and their role in facilitating a sense of intimacy with problematic topics and representation of counter-histories and marginal memories, ultimately allowing for the appropriation of such themes from an embodied and subjective perspective.

This was investigated mainly from the perspective of the curator/designing conceiving the experience and coordinating all players involved in the curatorial design process.

An audience evaluation study, however not the focus of this work, would have contributed to include the perspective of the experience of visitors and their response to the practices.

When possible, throughout the case studies (*Belongings, Living Streams*), insights are

provided on participants' responses to the work in form of text based surveys, and/or oral comments.

3.2.1 Intimacy enacted

I argue that the mediation of digital technology through an integrated approach to curatorial design has facilitated a sensorial and material experience of place-making – in case of *Living Streams*, the retrieval of migrants memories into the everyday (*Belongings*), the co-production of a community living heritage (*Living Streams, Resonances*). Throughout the practices I examined key agents enabling the negotiation of intimacy and sense of 'otherness'.

Wonder, for instance, is a very powerful means to allow for unexpected encounters: touching a physical object and experiencing the object talking back to you, or choosing a theme to navigate the exhibition as filter, have enabled visitors to perform simultaneous narrative paths and more subjective ways of engagement with objects and stories both on the ground and online.

In a constant back and forth reminding between theory and practice, the articulation of the research case studies relate back to the research question on how curatorial design practices can enable strategies of embodiment, sensorial engagement and participation that facilitate intimacy and enable difference as ways of knowing and encountering the 'other'.

3.2.2 Profanation and experience

The concept of 'profanation', investigated in Giorgio Agamben's observations about the separation of knowledge and experience in modernity, is of utmost significance in the formation of the interpretive framework of the research as well as functioning as a filter throughout the research practices.

As reinstated in the findings, the concept of profanation is adopted as a key guiding element informing the curatorial design, testing and validating the principles at the basis of the design strategies and curatorial choices.

In *Belongings* a practices of object handling led the strategies of embodiment to achieve affective interactions between sound and touch in the design of a tangible interface interpreting the heritage of migration.

Theories of embodiment and performativity, material culture studies on object-centred knowledge as well as design theory and sense studies informed the formation of the design approach aiming for the development of responsive environments that enabled to experiment with participation, subjectivity and open curation.

Touch as an organ of profanation has been discussed by Agamben's reflections recalling the procedures through which religions remove things, places, animals or people from

common use and transfer them to the separate sphere of the sacred. Rituals involving touch played a crucial role in both creating separation and, conversely, returning that which had been separated through profanation.

Understanding the role touch can play, enabling and amplifying our connection with the world is fundamental for designers whose work addresses the senses as vehicles of experience, engagement and embodied knowledge. Touch, from this perspective, can be looked at as one of the enablers of the 'zone of contact'.

4. Conclusions

The research has undertaken a practical approach exploring how technological instruments can be implemented and re-appropriated to experiment with alternative and more participatory engagement forms, thus reinstating new relations and connections between people, places, objects and memory in a wide range of points of contact between the museum, digital heritage, visitors and online users.

I argue that the multimedia museum is opening a new field of creativity for curatorial and experience design which requires the invention of new instruments and approaches to explore questions of participation and embodiment that are complex and demand an attitude that is empathic and immersive. To contribute to this creative field in the making there is a call for us designers to converge social responsibility, cultural mediation with the power of aesthetics.

1 Resonances media coverage:

Museums and Galleries of NSW

<http://mgnsw.org.au/sector/support/imagine/nominees-2013/exhibitions-3-20-staff/>

The themes of work, home, community, children, good times and hard times in Liverpool's history are explored via objects, images, text and sound. Thylacine's worked with artist/curator, Francesca Veronesi, to create a display that presented the diversity of the collection whilst also encouraging visitors to sort the diverse collection into themes through the use of interactive light as a framing device. The design features an interactive display of themes illustrated by special lighting, to allow the visitor to create their own experience.

<http://www.thylacine.com.au/who-what/resonances/?portfolioID=34>

The refurbishment of the Liverpool Regional Museum, Sydney

Thylacine designed an exciting interactive exhibition in which to house the museum's collection of everyday objects. The collection is displayed in a series of showcases, which sit within a four-sided "room within a room" frame. This frame references domestic joinery of the 1960s

The objects in the double-sided showcases each belong to one of six themes, and an interactive light show is used to 'sort' the showcases accordingly. When the visitor presses a touch panel for a particular theme, the related showcases will light up for viewing, while all the others dim down into the background. The visitor can sort the collection as many times as they wish. The joinery design encourages them to explore the displays from all sides, and gain an in-depth understanding of the collection.

<http://www.yourliverpool.com.au/liverpool-museum-objects-lives-and-stories-of-liverpool/>

Posted by karress rhodes | 03.20.13

LIVERPOOL MUSEUM –

OBJECTS, LIVES AND STORIES OF LIVERPOOL EXHIBITION

Opens March 28

The new exhibition, Objects, lives and stories of Liverpool at the Liverpool Museum will use interactive technology to link objects from across our diverse community to weave a common story about our city's past.)

Only event:

<https://www.facebook.com/events/259524630848917/>

2 Claire Bailey Ross , Exploring Museums, Digital Technology And User Experiences. Available at:

<https://claireyross.wordpress.com/2015/03/06/show-us-your-assetsmuseums-digital-engagement-the-horniman-experience/> [Accessed 12/11/2015]

3 Horniman museum, Instagram post. Available at:

https://instagram.com/p/30tQTaJw_1/?taken-by=hornimanmuseumgardens [Accessed 12/11/2015]

4 See Horniman curator's post on Tumblr. Available at:

<http://in-the-horniman.tumblr.com/post/41351835409/our-deputy-keeper-of-natural-history-paolo> [Accessed 12/11/2015]

A2 INTERVIEW PROMPTS

Artists/Designers

- How did you become involved in the project, how did it started?
- What was your role in the various stages of the project? (conceptualisation, development, production, exhibition)
- Whom did you collaborate with in the different stages of the project and how was the collaboration established?
- In what ways did the content influenced the design of the interface?
- How did you imagine the audience interaction/ experience with the work to develop?
- Which sensory perception did the interface design privilege, visual, tactile, auditory?
- How did you document the audience's experience?
- Can you describe the different audience responses? For instance, were you able to gather an insight of what the experience of children with the work might have been?
- How did this project influence your work? What did you learn, what would you have done differently?

Curators/Project coordinators

- How did you become involved in the project, how did it started?
- What was your role in the various stages of the project? (concept, data collection, development, production, exhibition)
- Whom did you collaborate with in the different stages of the project and how was the collaboration established?
- What was your contribution to the design stage? How did you interact with the designers? How would you describe your collaboration to be?
- How did the collaboration develop? Though face to face meetings, emails, visual presentation?-
- How would you describe your communication to be like?
- Were there any difficulties throughout the development of the project?
- How long did it last?
- What were your expectations? Did they change throughout the process
- How did (did not) the design outcome meet your expectations?
- How did this project influence your work? What did you learn, what would you have done differently?

A2.1 AUDIENCE QUESTIONNAIRE

In what age group are you?

19 and under

20-29

30-39

40-49

50-59

60+

Gender : Male Female

-How would you describe your experience? (You can use key words)

-Is there anything significant you remember about the stories you listened to? Anything you would like to share with others?

-Can you describe your feelings, emotions while doing the experience? (you can use key words)

-If you could meet an author, what would you like to ask her/him?

-If you could tell a story you heard to someone you know, what would you tell, and why?

- Is there any further comment you would like to share with us? Anything related to the technology, the exhibition setting or else?

-We would appreciate any comments and/or suggestions for further improvement

Question and answer questionnaire

Consent forms (interview / questionnaire)

A3 ETHICS APPLICATION

INSTRUCTIONS FOR SUBMISSION OF ETHICS APPLICATION

UTS HUMAN RESEARCH ETHICS COMMITTEE

The UTS Human Research Ethics Committee (HREC) comprises people of varying backgrounds and experiences. It is important that your proposal is written so it is accessible to a variety of readers. We recommend that you engage in appropriate consultation before submitting your application. For example, with your supervisor, HREC member, Research Ethics Officer/Manager, Jumbunna, or any other relevant bodies involved in the research.

MOST RESEARCH WILL PRESENT NO SIGNIFICANT ETHICAL PROBLEMS. NONETHELESS, THE COMMITTEE IS AWARE THAT SOMETIMES THE MOST VALUABLE AND RIGOROUS RESEARCH WILL RAISE DIFFICULT ETHICAL ISSUES. THE COMMITTEE IS NOT DETERRED FROM APPROVING SUCH RESEARCH PROVIDED YOU DEMONSTRATE THAT YOU HAVE THOUGHT ABOUT THE RELEVANT ISSUES AND PUT APPROPRIATE MECHANISMS IN PLACE TO DEAL WITH THEM OR THEIR OUTCOMES. AS PART OF THE APPLICATION PROCESS, THE COMMITTEE IS HAPPY TO PROVIDE ADVICE ABOUT DEALING WITH SUCH ISSUES.

Please keep your answers brief, informative and clear. **Type your responses into the box provided, which will expand to accommodate your answers.**

DO NOT COPY THIS PAGE OF INSTRUCTIONS OR ATTACH TO YOUR APPLICATION.

THIS APPLICATION SHOULD BE READ IN CONJUNCTION WITH THE RELEVANT UNIVERSITY POLICY AND GUIDELINES (REFER: <http://www.research.uts.edu.au/policies/restricted/human.html#policies>)

AND THE NATIONAL STATEMENT ON ETHICAL CONDUCT IN RESEARCH INVOLVING HUMANS (SEE: <http://www.health.gov.au/nhmrc/publications/humans/contents.htm>) NOTE: REFERENCES TO RELEVANT SECTIONS OF THE NATIONAL STATEMENT (NS) HAVE BEEN INCLUDED AS A GUIDE IN THIS APPLICATION.

ALL RESEARCH BEING CONDUCTED AT UTS (FUNDED OR UNFUNDED) ALSO REQUIRES THE COMPLETION OF THE [Research Information Form](#). CONTACT YOUR FACULTY ADMINISTRATOR OR THE RESEARCH & INNOVATION OFFICE FOR MORE INFORMATION ON THIS FORM.

THE COMMITTEE WILL TREAT YOUR APPLICATION CONFIDENTIALLY BUT RESERVES THE RIGHT TO SEEK EXTERNAL ADVICE IF NECESSARY.

Send original (not including this page) and 16 copies total 17 copies (preferably double-sided, and stapled once in top left corner – DO NOT BIND) of your completed form, together with any supporting documents (i.e. consent forms, questionnaires, etc.) to:

Research Ethics Officer

***Research & Innovation Office
Level 14, Tower Building***

University of Technology, Sydney

PO Box 123

BROADWAY NSW 2007

Also email one copy to Research.Ethics@uts.edu.au at the time of submission

OFFICE USE:

APPLICATION FOR APPROVAL
UTS HUMAN RESEARCH ETHICS COMMITTEE

PROJECT TITLE: Enchanted Teleidoscopes. Multimodal affective interfaces reframing time and space in the museum

Chief Investigator/Supervisor: (indicate which) Supervisor. Associate Professor Bert Bongers	
Faculty/School: DAB	Address: PO Box 123 Broadway NSW 2007
Email: Bert.Bongers@uts.edu.au	Phone No: 9514 8932
Qualifications: (REF NS T)(e) MSc Erg. UCL London; PhD VU Amsterdam	
Experience relevant to this application:	
<p>BERT WORKED AS A TECHNICAL MANAGER AND PROFESSOR AT THE RIJNSAKADEMIE (THE POST GRADUATE ARTIST IN RESIDENCE ACADEMY) IN AMSTERDAM, AS A RESEARCHER ON HAPTIC INTERFACES AND MULTIMODAL REPRESENTATION FOR MULTIMEDIA HOME SYSTEMS AND NETWORKS AT PHILIPS CORPORATION, NL, AND AS A RESEARCHER ON NOVEL INTERFACES FOR MOTION-IMPAIRED COMPUTER USERS AT THE UNIVERSITY OF CAMBRIDGE, ENGLAND. SINCE JUNE 2002 HE HAS BEEN INVOLVED AS PART-TIME LECTURER AND CURRICULUM DEVELOPER AT SEVERAL UNIVERSITIES IN THE NETHERLANDS, ON TOPICS RELATED TO INTERFACE DESIGN OR MORE GENERAL, THE INTERACTION BETWEEN PEOPLE AND THEIR ELECTRONIC ENVIRONMENT. BERT'S PROFESSIONAL AND ACADEMIC WORK DEVELOPED AN EXTENSIVE EXPERIENCE ON USER EXPERIENCE AND USABILITY TESTING TO ENABLE A BETTER COMMUNICATION BETWEEN THE HUMAN MIND AND THE COMPUTER PROGRAMS.</p>	

Co-investigator/Co-supervisor: Dr. Ilaria Vanni Accarigi	
Faculty/School: FASS	Address: PO Box 123 Broadway NSW 2007
Email: ilaria.vanni@uts.edu.au	Phone No: 95147428
Qualifications: BA hons, MA hons (Siena), PhD (UNSW)	
Experience relevant to this application:	
<p>ILARIA HAS CONSIDERABLE EXPERIENCE IN CONDUCTING ETHNOGRAPHIC RESEARCH WITH CULTURALLY DIVERSE COMMUNITIES AND YOUNG ADULTS. FROM 2001 TO 2003 SHE HAS WORKED FOR THE MUSEUM OF SYDNEY RESEARCHING THE HISTORIES OF ITALIAN IMMIGRANTS IN SYDNEY, DOING OBSERVANT PARTICIPATION AND CONDUCTING MORE THAN 70 IN DEPTH INTERVIEWS. SHE HAS RECENTLY COMPLETED AN ARC PROJECT, WHICH DEVELOPED AN ETHNOGRAPHIC STUDY ON THE CULTURAL PRODUCTION OF ITALIAN ACTIVISM. SHE IS CURRENTLY WORKING ON AN ARC PROJECT ON DIGITAL ARTS IN WESTERN SYDNEY INVOLVING OBSERVANT PARTICIPATION AND IN DEPTH INTERVIEWS. SHE IS ALSO WORKING ON A LEARNING AND TEACHING PERFORMANCE FUND GRANTED PROJECT ON THE PRODUCTION OF SOCIAL SPACE IN SECOND LIFE, WHICH INVOLVES ONLINE PARTICIPANT OBSERVATION AND INTERVIEWS AND VISUAL ANALYSIS</p>	

(Note: copy this section as required to accommodate the number of investigators)

Student (name): Francesca Veronesi	UTS student number
YES	Address:
Email: francesca.veronesi@student.uts.edu.au	Phone No:
Qualifications:	
BA Architecture (hons) IUAV Venice; MPhil Architecture U Syd	
Degree being undertaken (attach letter of candidature): PhD	
Has doctoral/masters assessment been obtained? If yes, please attach a copy of the assessment report. If not, indicate when it will be sought? Yes	

Experience relevant to this application: In her Master by research (MPhil) Francesca conducted audience studies involving ethnographic methods such as participants' observation, questionnaires and semi-structured interviews with audience members. She applied ethnographic methods to explore the audience response in the interaction with prototype interactive interfaces developed by the researcher in collaboration with interaction designers.

From January 2009 to March 2010 she worked as a research assistant at FASS on an ARC Linkage project exploring the impact of new media art practices in Western Sydney. In collaboration with two chief investigators, Dr Christina Ho and Dr. Tanja Dreher, she surveyed several cultural institutions based in Western Sydney (40 respondents) through telephone interviews.

From July to November 2009 she was worked in a team of studio leaders for the 3rd year Interdisciplinary Design subject Researching Design Processes, coordinated by Elisabeth Muller and Bert Bongers. In this role she was responsible for teaching students advanced research techniques, including interviews with a specific focus on in-depth analysis of qualitative data.

Please nominate one of the above as the main contact person for ethics correspondence. This is the person who will be responsible for all reporting to and from the HREC throughout the research, and must be a UTS staff member (for students, the primary contact should be your Chief Supervisor)

Ilaria Vanni Accarigi, Bert Bongers

CONSULTATION:

Have you undertaken any consultation in preparing this application (e.g., supervisor, Research Ethics Officer/Manager, HREC member, Jumbunna, etc). Give details:

Supervisor

FUNDING:

(a) Have you applied for funding in relation to this research? If yes, list the source of funding (e.g. funding body/type) and attach a copy of the funding approval, budget page and any contract or agreement from the funding application. (REF NS 1.2)

No

(b) Total amount of funding (including in-kind contribution) sought or obtained (please indicate which is applicable)

\$

(c) What is your relationship to the funding source (e.g. grant recipient, industry partner, contractor, employee, office bearer, personal, other)?

(d) Is there any potential conflict of interest for you as a researcher because of the funding or commercial arrangements? If yes, provide details.

(e) Are there any constraints on the research as a result of the funding arrangements, e.g. to intellectual property, publication, etc? If yes, provide details. (REF NS 1.3 (d))

(f) If you have not applied for funding, do you intend to do so in future? If yes, provide details.

I intend to apply to the AGWS fellowship in order to obtain funds for field work overseas

PROPOSED COMMENCEMENT DATE: <i>(of data collection – HREC cannot give retrospective approval)</i>	1 September 2010
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ANTICIPATED COMPLETION DATE: <i>(of this research study – note that ethics approval includes the collection, analysis, publication and storage of data)</i>	31 December 2013
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SECTION I – METHODOLOGY AND RESEARCH DESIGN

The purpose of this section is to place your research in context for the Committee and demonstrate your ability to conduct the research. The Committee may only approve research which is methodologically sound. Remember to use simple language that can be understood by people from a variety of backgrounds. Avoid jargon and acronyms.

1. DESCRIPTION OF YOUR RESEARCH

- (a) What is your research about? Please include a brief description using plain English of what your research is about *(approximately 100 words)*.

The research investigates and problematises experiential interaction with cultural heritage in the design of museum displays, here referred to as 'multimodal museum interfaces' (see glossary). The research looks at multimodal interfaces as tools for interpretation of history, appropriation of knowledge and production of meanings from a narrative, cognitive and social perspective. The design of museum interfaces is explored as a complex networked process shaped by the dynamics, mutual influences and interactions among the actors who are involved in the interpretation and representation of cultural heritage. Addressing concepts of embodiment and performativity, the research's five case studies develop a distinct perspective from which to look at the way interchange between digital technologies and cultural heritage transforms relationships with cultural objects and mediates an embodied consciousness of the past. Three case studies follow the production of new works developed by the researcher as a designer, others examine projects by other researchers and artists. The research poses questions about the transformative potential of interfaces as affect-and-meaning making tools, and their capacity to reinstate and renegotiate relationships between people, objects and memory through interactions that intensely address the human senses and convey affective experiences within the space of the museum.

- (b) What do you hope the outcome of this research will be?

A PhD dissertation, journal articles and conference papers written within a design framework about the collaborative social practices involved in interface design as well as the affective response of audience in the interaction with multimodal museum interfaces.

- (c) Who do you think will benefit from this research?

Interface designers, researchers, museum curators, heritage collection managers and coordinators, students and educators.

- (d) Please provide details of the research design (approximately 350 words) including details of your aims/ hypotheses or research questions and the significance of your research. *(Note that Clinical Trials, Recruitment of Participants and Data Collection are dealt with below so you will not need to describe them in detail here. Include a timeline if you feel it will be helpful to the Committee.)*

In researching the relations between orality and multimodality, I investigate the implications of adopting storytelling as the dominant structuring metaphor of multimodal interfaces that engage museum audiences with interpretive practices of cultural heritage. I draw upon Tonkin's argumentations on the ways we remember, represent and narrate our past, looking at the interconnections between memory, cognition and history and their role in shaping embodied interactions with cultural objects from the past. In storytelling, interaction is an integral part in the construction of meaning of the story, I explore the interactions that occur between narrators, authors, participants, audiences and interfaces as social, embodied actions situated in real time and space, asking how the characteristics of the narrators, their audiences, the medium and the structures of the narration mediate experience, participation, affect and contribute to construct meanings of the past.

Innovation and significance

The research will pioneer a critical and systematic experimental framework of practices that engage museum audiences with archival records, such as oral histories and audio/visual records from media archives. This will produce a reference for analysis, development and evaluation of practices in the field that researchers, designers, as well as curators and specialists of institutions' collections will be able to adapt, manipulate and build upon for future needs.

The series of analyses and case studies developed by the research will complement the understanding of the role of embodied and pervasive interactions with multimodal interfaces as interpretive practices of cultural heritage.

Methodologies:

The research will be conducted using a range of qualitative methodologies that require interaction with other people in order to map the dynamics between authors and audiences within the creative and interpretive process of designing interactive museum interfaces. This will require the development of specific methods and instruments such as interactive environments and interfaces, ethnographic and participatory studies, as well as archival documentation.

Participant observation

I will conduct participant observation of audiences interacting with interfaces in a real context situations such a public event and exhibitions. To document the user experience I will use field notes as well as video recording. Participants' video recording will enable the capture of facial expressions and body language of people while they are engaged with the experience. This will allow a better understanding of audiences' emotional response.

Video-recording will be done only after obtaining consent from participants. Participants' identity will always be kept anonymous in all publications that will follow from this study. All photographs extracted from the video-recordings, and/or video clips either published or included in oral presentations will be chosen in such a way that participants' will not be recognized. i.e: choose framings showing people at distance, from the back, close ups of hands, arms, eyes.

Interviews

I will conduct in-depth, semi-structured interviews with designers, researchers, museum curators and project coordinators on their role within the production and design stage, their experience of collaborating with members of the design team, their response to the design outcomes. I expect to interview about 10 people.

Audience participatory studies

I will develop open-ended questionnaires to gather inspirations and responses from audiences on their experiences.

Video commentary

I will document my experience of participating as an audience to the projects developed by other researchers and artists through a real time navigation with a live audio-video commentary. This will aim to capture in a reflexive way a live experience in response to the work.

Discourse Analysis

I will use publications such as research papers, media releases, and artists' statements and public material in forms of websites and blogs to gather information on the research case studies.

(e) Is this a clinical trial? (If yes, you must provide full details in [Appendix A - Clinical Trials](#) and attach to the end of this form.)

2. LITERATURE REVIEW AND REFERENCE LIST

(a) Please give a brief literature review of no more than 500 words. The aim is to explain how your research fits into the context of other research in the area. [\(REF NS 1.1\(c\)\)](#)

There is an extensive amount of literature on the use of digital technology in museums and its implications for knowledge creation, interpretation, affective communication, and audience engagement with museum collections. (Bennett 1995, Hooper-Greenhill 2000, Witcomb 2003, Messham-Muir 2005, Karp 2006, Trinca and Wehner 2006) Contemporary discourse on new museology addresses challenges of customization of the audience experience in regards to accessibility of information resources (Macdonald 1992), looking at the relationships with narrative studies in order to understand the engagement of museum audiences with multimedia narrative experiences (Page 2009). As Cameron and Kenderdine (2007) argue, however, critical theorization on the interchange between digital media, audiences, institutions and cultures is a relatively unmapped terrain. In their comprehensive overview the authors contribute to its unraveling through a critical appraisal on recent applications of digital technologies for preservation, management, interpretation, and representation of cultural heritage, posing questions of authority and embodiment in relation to digital heritage.

Since the last twenty years, narrative theory provided a framework for a critical theory of interface design (Laurel 1990,

Don 1990). While relationships with hypertext and cybertext, are recurring in new media theory (Manovich 2000, Aarseth 2003), relationships between multimediality and orality are not so well explored. To this regards Flick and Goodall (1998) discuss the challenges and opportunities for the making of 'interactive history' with an Aboriginal community using interactive multimedia and the technical and ethical considerations involved in interpreting, editing and accessing oral history educational purposes.

In researching more specifically implications of adopting storytelling as the dominant structuring metaphor of the interface from an narrative, cognitive and social point of view, I traverse and intersect multiple interdisciplinary perspectives ranging from oral history theory, to non-representational theory, visual culture, narratology and cognitive studies.

Looking at the ways we remember, represent and narrate the past, I draw upon Tonkin's argumentations on the interconnections between memory, cognition and history and their role in 'shaping individual selves' (Tonkin 1992: 1). In storytelling, interaction is an integral part in the construction of meaning of the story, I explore the interactions between narrators, authors, audiences and interfaces as social, embodied actions situated in real time and space. With Portelli (1998) I examine the traits of oral communication through the characteristics of the narrators, their audiences and the structures of their narrations as means to mediate experience, participation, affect and construct meaning of the past. Experience and its relationship with play, infancy and storytelling in everyday life are explored with Agamben (1993), Benjamin (1969) and Huizinga (1971). I investigate interfaces as creative, interpretive practices, and the relations they open up between authors and co-authors with Latour's actor-network theory (2005) looking at how networks renegotiate properties of distance and scale and the entanglement between the physical and the virtual, people and objects in technologically pervasive environments.

According to Dourish (2001), concepts of embodiment and embodied interaction in interface design trace back to the XX century phenomenological tradition of Husserl's and Merleau Ponty's phenomenology of perception. I investigate the implications of embodiment in the relationship among interfaces, authors and audiences, which Schroeder in her investigations on body and instrument defines as erotic (2005). Relationships between body, senses and affect are discussed in more depth with Massumi's (1995) and Thrift's (2008) theorizations and Bennett's reflections on sense memory, affect and trauma.

Researching more specifically implications of embodied interaction with cultural heritage, and ways of interacting and experiencing the past, I look at the relations between maps and storytelling through non-representational theories of space and place that question the western tradition of disembodied thinking about space. I draw upon Carter's (2009) reflections on performative geography, DeCerteau's spatial practices (1984) and Rogoff's geography's visual culture (2000) in order to explore the relations between authors and maps and the role of the body in representing and mapping space.

Researching what Karp describes as the contested terrain of exhibition display (1991), which for its very nature always emphasizes some elements, while downplaying or ignoring others, I link to Munster's critique of new media (2006) and the connection between contemporary multimedia museal display and the aesthetic of the cabinets of curiosity as a baroque mode to create association between 'objects, images, sounds and concepts' that works through dissonance, variation, arbitrary association and seduction.

(b) Please attach a list **only** of references used in the literature review and cited in your application. **DO NOT INCLUDE REFERENCES YOU HAVE NOT USED IN THIS APPLICATION**

Aarseth, E. J. (2003). Nonlinearity and Literary Theory. In N. M. Wardrip-Fruin, N. (Ed.), *The new media reader* (pp. 762-780). Cambridge, Mass.: MIT Press.

Agamben, G. (1993). *Infancy and History* (Heron & liz, Trans.). London: Verso.

Benjamin, W. (1969). The Storyteller. Reflections on the Work of Nikolai Leskov. In H. Arendt (Ed.), *Illuminations* (pp. 83-109). New York: Schocken

Bennett, T. (1995). *The birth of the museum: history, theory, politics*. London: Routledge.

Cameron, F., & Kenderdine, S. (Eds.). (2007). *Theorizing digital cultural heritage : a critical discourse*. Cambridge, Mass.: MIT Press.

Carter, P. (2009). *Dark writing : geography, performance, design*. Honolulu, Hawaii: University of Hawaii Press.

Certeau, M. d. (1984). *The practice of everyday life*. Berkeley: University of California Press.

Don, A. (1990). Narrative and the interface. In B. Laurel (Ed.), *The Art of human-computer interface design* (pp. 209-219). Reading, Mass: Addison-Wesley Pub. Co.

Flick, K., & Goodall, H. (1998). *Angledool stories*. In R. Perks & A. Thomson (Eds.), *The oral history reader* (pp. 420-431).

New York Routledge.

Hooper-Greenhill, E. (2000). *Museums and the Interpretation of Visual Culture*. New York: Routledge.

Huizinga, J. (1971). *Homo Ludens: a study of the play-element in culture*. Boston: Beacon Press

Karp, I. (2006). Introduction. In I. Karp & e. al. (Eds.), *Museum frictions : public cultures/global transformations*. Durham, N.C. ; London Duke University Press.

Karp, I. (1991). Culture and representation. In I. Karp & S. D. Lavine (Eds.), *Exhibiting cultures : the poetics and politics of museum display* (pp. 11-23). Washington: Smithsonian Institution Press

Laurel, B. (Ed.). (1990). *The Art of human-computer interface design*. Reading, Mass: Addison-Wesley Pub. Co.

Latour, B. (2005). *Reassembling the social : an introduction to actor-network-theory*. Oxford: Clarendon

Macdonald, G. F. (1992). Change and Challenge: Museums in Information Society. In I. Karp, C. Mullen Kreamer & S. D. Lavine (Eds.), *Museums and communities : the politics of public culture*. Washington: Smithsonian Institution Press.

Massumi, B. (1995). The Autonomy of Affect, *Cultural Critique*, 31(Fall), 83-109.

Manovich, L. (2001). *The language of new media*. Cambridge, Mass: MIT.

Messham-Muir, K. (2005). Affect, Interpretation and Technology. *Open Museum Journal* 7, 1-13.

Munster, A. (2006). *Materializing new media : embodiment in information aesthetics*. Dartmouth, N.H.: Dartmouth College Press.

Page, R. (Ed.). (2009) *New Perspectives on Narrative and Multimodality*. London: Routledge.

Portelli, A. (1998). What makes oral history different. In R. Perks & A. Thomson (Eds.), *The oral history reader* (pp. 62-74). New York Routledge.

Rogoff, I. (2000). *Terra infirma : geography's visual culture*. New York: Routledge.

Schroeder, F. (2005). The Touching of the Touch – performance as itching and scratching a quasi-incestuous object. *Extensions: The Online Journal for Embodied Technology*, 2.

Thrift, N. J. (2008). *Non-representational theory : space, politics, affect*. London: Routledge.

Tonkin, E. (1992). *Narrating our pasts : the social construction of oral history*. Cambridge ; New York: Cambridge University Press.

Trinca, M., & Wehner, K. (2006). Pluralism and exhibition practice at the National Museum of Australia. *Journal of the National Museum of Australia*, 1(1), 61-64.

Witcomb, A. (2003). *Re-imagining the museum : beyond the mausoleum*. London; New York: Routledge.

SECTION II – RESEARCH PARTICIPANTS

In line with the National Statement, the definition of participants includes not only those humans who are the primary focus of the research but also those who will be affected by the research. The Committee regards the principle of respect for persons as of paramount importance. (REF NS 1.1 (d), 1.6-1.9, 1.10, Chapter 2.1)

3. RECRUITMENT OF RESEARCH PARTICIPANTS/SUBJECTS

(a) How do you propose to initially select and contact your participants/subjects (outline how you will obtain their contact details)? *(Attach copies of any documentation you intend to use, including letters, text of ads, flyers, etc.)*

letter

advertisement/flyer

telephone

e-mail
internet
organisation
personal contact
other (give details)

(b) How many participants/subjects do you intend to recruit

I will recruit a maximum of 10 interviewees. I will contact interviewees via email. (see prompt recruitment email attached).

I will recruit audience participants through flyers and other advertising materials (poster).

I will send out an email to UTS staff and students using the University mailing list. I aim to recruit up to 30 people. (see recruitment email attached)

(c) Explain how and why you have chosen this number.

I will interview 2 project coordinators, 2 museum curators, 3 interface designers, 1 interactive artist, 1 historian, 1 archive manager.

30 audience participants will make an adequate sample for data analysis of audience responses and feedback.

(d) Explain your selection and exclusion criteria for participants.

I will choose participants over 18.

4. HOW WILL RESEARCH PARTICIPANTS/SUBJECTS BE AFFECTED?

In order to consider your research, the Committee will need to know what it will involve for your participants.

(a) What procedures will participation in this research involve for your participants/subjects? *(Give details)*

Interviewees will be informed beforehand on the aims of the research via a recruitment email. (Before conducting interviews I will explain the research aims and expected outcomes in more detail and answer any question that the interviewee might have about the research. I will ask the participant's consent to be interviewed as well as permission to be audio/video recorded and photographed. Four interviews will be conducted in Italian. This will not be a problem as I am a native Italian speaker. I attached translations of the recruitment email and consent form that have been proofread by my co-supervisor who is also an Italian native speaker.

Audience participants will be asked to interact with the interface after being informed on what the research is about and given the necessary technical instructions on how the interaction will develop. This will be done verbally as well as through a Q&A information letter before starting the experience. (See participant information letter attached) I will ask the participant's consent to participate to the study as well as permission to be audio/video recorded and photographed. I will provide a written questionnaire at the end of the experience for participants to complete. The questionnaire is anonymous.

(b) What time commitment will the research involve for your participants/subjects?

Each interview will last between 30 and 60 minutes. Audience participation and questionnaire will take approximately 30 minutes to complete.

(c) In what location will the research/data collection take place (*public area, office, café etc*)?

The interviews will take place at the interviewee's work place, or another convenient public location for the participant, such as a public area, an outdoor space or a cafe. For recording purposes it will be given preference to locations where background noise is relatively low. Audience participatory studies will take place at the UTS Interactivation Lab, Faculty of Design Architecture and Building, 702-730 Harris Street, Ultimo, NSW.

(d) What travel, if any, does the research involve for your participants/subjects?

The research requires participants to travel to the locations where the study takes place. This is an urban, public location well connected to the public transport network. In regard to interviewees, when locations are different from the participants' workplace, travel will involve the subjects going to the location that has been arranged beforehand in which the interview will be held.

(e) Please include any additional information you feel relevant.

5. RISK/HARM

Risk or harm could be described as damage or hurt to the wellbeing, interests or welfare of an individual, institution or group. Harm could range from physical hurt or damage such as illness or injury, to psychological or emotional hurt or damage, such as embarrassment or distress. Please note that as a researcher, you are not necessarily immune from risk yourself and should give careful consideration to this question. (REF NS 1.7 – 1.8)

(a) Describe any risk or harm that research participants and related groups **might** experience while participating in the research, including the **likelihood** of such risk/harm occurring.

Emotional distress is always a possibility in public exhibitions as audiences engage with media content related to life stories. However the likelihood that this will occur as a result of the research is very low.

The topic of the interviews does not require sharing personal information. Interviewees will be asked questions related to their work and professional experience.

(b) Is there any possibility of risk or harm to participants and related groups resulting from the research at any time in the future? If yes, please describe.

No

(c) Describe how you propose to minimise **any** risk for participants/subjects and related groups.

Audience questionnaires will be kept anonymous. In general, if participants would like to share personal information, these will be treated as confidential and anonymized when used in the research.

Interviews transcripts will be sent to participants to be reviewed before using them in the research. Details of any publication related to the interviews will be sent to the interviewees beforehand.

(d) Describe any risk or harm the researchers might encounter in the research, including the **likelihood** of such risk/harm occurring.

I might encounter emotionally distressing situations if participants have a negative attitude toward the project. However, the likelihood that this will occur is very low.

(e) Describe how you propose to minimise **any** risk for researchers.

I will avoid conducting interviews in private locations such as the interviewees' home. I will choose public locations where other people can be asked for help in case any distressing situation might occur.

6. BENEFITS/PAYMENT

Researchers sometimes acknowledge the value of the input of participants by offering them rewards or benefits. Such benefits must not constitute an undue or improper inducement. Benefits may be financial or can take other forms. For example, movie tickets, book vouchers, chocolates, sharing the findings, or recompense for out-of-pocket expenses are all acceptable, whereas linking participation to assessment for students would not be acceptable.

Describe and justify any benefit, payment or compensation the participants will receive. (REF NS 1.6)

Participants to the study will not receive any reward or benefit.

7. DECEPTION

Whenever possible, research should be free of any deception of participants. If you believe that deception is necessary for the integrity of your research, please present a sound rationale.

- (a) Does this research involve any deception of participants? If yes, please describe. If not, go to the next question (8) ([REF NS Chapter 2.3, 2.3.1, 2.3.2](#)).
-

No

- (b) If yes, why is such deception necessary?
-
-

- (c) How and when do you intend to debrief the participants if deception has been used?
-
-

8. PRE-EXISTING RELATIONSHIP TO RESEARCH PARTICIPANTS/SUBJECTS

Researchers sometimes assume that it will be easier to conduct research with participants they know, such as in the workplace, with family or friends. In fact, the reverse can be true and unexpected problems arise precisely because of the pre-existing relationship. For example, it is harder for participants to refuse or to withdraw from research when they know the researcher, which means that the research could be unintentionally coercive.

- (a) Do you have an existing relationship to the research participants/subjects (e.g. employer/employee, colleague, friend, relation, *student/teacher, etc)? If yes, please describe your relationship. If no, go to question 9.
-

A recruitment email will be send out to all UTS students, so it is possible that some participant are in a student/teacher relation with the investigators of this research.

- (b) Could student assessment, employee security, etc., be affected by participation in this research? Please give details.
-

No. Participants will not be identified as questionnaires are anonymous and no personal information will be asked.

- (c) How might this relationship influence their decision to participate or create potential ethical conflict? Please describe your strategy for dealing with this.
-

On the participants' information letter I will clarify that participation to the study is completely voluntary and withdrawal can be done at any time, without giving reason and without consequences for the student's assessment or relation with the researchers. I will also clarify that no personal information will be collected and students' responses to the questionnaire will not be identifiable by the researchers. I will inform participants beforehand that, for documentation purposes, their experience will be video recorded.

- (d) How might this relationship be affected by the proposed research or create potential ethical conflict? Please describe your strategy for dealing with this.
-

I will be available to ask any question the participants might have if they are in a relationship of student/teacher with the researchers. I will explain that no personal data will collected and their reponses to the questionnaire will not be identifiable by the researchers.

**NOTE: If the participants are university students, then you will need to obtain approval from the relevant Dean or their nominee in the space provided below:*

Approval from Dean/Nominee

(for research involving access to students only).

I have read this application and approve access to students in my faculty/school for the purpose of this research. (If you wish to make any additional comments for the Committee to consider in relation to this research, please do so below).

Dean/Nominee (signature) Name & Title

Date: ___/___/___

9. CONSENT

Informed consent is central to ethical research. It is an ongoing process, not just a signed form. The Committee recognises that it is not always possible or necessary to obtain formal or written consent, for example in anonymous or observational research, or the use of de-identified data in epidemiological research. However, if you do not intend to obtain formal or written consent, you must justify this to the Committee. (REF [NS Chapters 2.2 and 2.3](#))

(a) HOW ARE YOU OBTAINING CONSENT? (ATTACH A COPY OF ANY CONSENT FORM AND/OR INFORMATION SHEET. REFER: [A copy of a sample consent form](#))

I WILL SEEK CONSENT FOR INTERVIEWS AS WELL AS PERMISSION FOR AUDIO/VIDEO RECORDING THROUGH A WRITTEN CONSENT REQUEST. (SEE ATTACHED SAMPLE CONSENT FORM). I WILL PROVIDE INFORMATION TO AUDIENCE PARTICIPANTS THROUGH AN INFORMATION LETTER IN A Q&A FORM IN WHICH I WILL CLARIFY AIMS OF THE RESEARCH AND WHAT THEIR INVOLVEMENT WILL ENTAIL.

IN SOME INSTANCES THERE MIGHT BE PARTICULAR ISSUES IN OBTAINING CONSENT, FOR EXAMPLE IN RESEARCH INVOLVING PEOPLE WITH DEMENTIA, PRISONERS, SUBORDINATES, ETC.

(b) Please describe any special issues relating to consent in your research. (REF [NS Section 4](#)) Are the participants able to consent fully? Please give details. (Note: research involving children is dealt with in the next question.)

10. CHILDREN

Does this research involve people under the age of 18? (REF [NS Chapter 4.2](#)) If no, please proceed to question 11. [If yes, then you must answer complete and attach Appendix B](#)

No

11. LANGUAGE & CULTURAL CONSIDERATIONS

Research involving people from identifiable language and cultural groups, including your own, may require special sensitivity. If the research is being carried out in another country, you must comply with UTS as well as local standards, laws and guidelines. (REF [NS 1.4, 1.10, 1.11](#))

(a) Does your research involve Aboriginal and Torres Strait Islander peoples? If yes, you should refer to the NHMRC [Guidelines for Ethical Conduct in Aboriginal and Torres Strait Islander Health Research](#) and make any additional comments you feel relevant. **Please note that your application will be forwarded to the Director of Research at Jumbunna for assessment.**

No

- (b) Does your research focus on a specific language or cultural group, or will it be taking place overseas? If yes, then you must answer complete and attach Appendix C. If no, please proceed to question 12.

NO, THE RESEARCH DOES NOT TARGET ANY SPECIFIC LANGUAGE GROUP. HOWEVER, FOUR INTERVIEWS WILL BE CONDUCTED IN ITALIAN, AS INTERVIEWEES ARE ITALIAN NATIVE SPEAKERS. RISKS OF MISCOMMUNICATION DUE TO LANGUAGE ISSUES ARE VERY UNLIKELY TO OCCUR AS BOTH INTERVIEWER AND INTERVIEWEE ARE ITALIAN NATIVE SPEAKERS.

12. INVOLVEMENT OF ANOTHER INSTITUTION/ORGANISATION/COMMUNITY GROUP

IF YOUR RESEARCH INVOLVES ANOTHER INSTITUTION, YOU MAY NEED TO OBTAIN ADDITIONAL APPROPRIATE CONSENT OR EVEN FORMAL APPROVAL. SOME INSTITUTIONS MAY BE SATISFIED TO ABIDE BY UTS ETHICS APPROVAL. OTHER INSTITUTIONS MAY REQUIRE ANOTHER LEVEL OF APPROVAL.

THE NSW DEPARTMENT OF EDUCATION AND TRAINING (DET), FOR EXAMPLE, HAS PARTICULAR REQUIREMENTS RELATING TO THE CONDUCT OF RESEARCH IN SCHOOLS. IF YOUR RESEARCH INVOLVES DET, YOU ARE ADVISED TO CONTACT THEIR STRATEGIC RESEARCH DIRECTORATE ON (02) 9561 8370 OR (02) 9561 8809 OR (02) 9561 8402. THEIR WEB SITE IS: <https://www.det.nsw.edu.au/research/index.htm>

SERAP APPLICATIONS SHOULD BE SUBMITTED THROUGH THE ASSOCIATE DEAN (RESEARCH), FACULTY OF EDUCATION AFTER YOU HAVE RECEIVED YOUR ETHICS APPROVAL FROM UTS HREC.

- (A) DOES THIS RESEARCH INVOLVE ANOTHER INSTITUTION, ORGANISATION (E.G. SCHOOL, UNIVERSITY, COMPANY, HOSPITAL, NURSING HOME ETC), OR COMMUNITY GROUP? IF YES, GIVE DETAILS. IF NO, PROCEED TO NEXT SECTION.

YES. THE RESEARCH INVOLVES A COLLABORATION WITH NSW MIGRATION HERITAGE CENTRE. THE CENTRE WILL ALLOW ACCESS TO ITS MEDIA ARCHIVE AND USE OF ARCHIVAL MATERIAL FOR RESEARCH PURPOSES. ARCHIVAL MATERIALS INCLUDE ORAL HISTORIES COLLECTED BY THE CENTRE THROUGH INTERVIEWS WITH FORMER MIGRANTS. INTERVIEWS ARE ALL PUBLISHED ON THE CENTRE'S WEB SITE AS PART OF THE ONLINE EXHIBITION BELONGINGS. POST-WWII MIGRATION MEMORIES & JOURNEYS. THE ORAL HISTORY INTERVIEWS APPEARING IN BELONGINGS HAVE BEEN EDITED BY ANDREA FERNANDES, PROJECT CO-ORDINATOR. THE BELONGINGS WEBSITE AND ITS INTERVIEWS ARE PROTECTED BY COPYRIGHT LAW AND THE CENTRE PROTECTS THE PRIVACY OF BELONGINGS PARTICIPANTS.

- (b) How have you sought appropriate approval or support from the institution/organisation/ community group involved? If not, please explain why this has not been done. *(Please attach a copy of any letter of approval or agreement.)*

I have sought approval through an agreement with the NSW Migration Heritage Centre. (See agreement attached). There is a mutual benefit in this collaboration. The Centre will have the opportunity to disseminate the content of the exhibition to a wider audience and to explore new ways of interaction with oral history. On the research side, we will be able to test the audience affective response to the content of Belongings through an interface involving multimodal interactions such as tactual, auditory and visual stimulation.

- (c) Does this research involve any contracts, including confidentiality agreements? If yes, please attach one copy to the original application, and detail any particular conditions that might have ethical implications for the research (e.g. access to data, publication, etc).

No

SECTION III - DATA

The collection, storage and use of data involve important considerations of privacy. When collecting data, researchers should show due sensitivity and respect for persons. It is also important that data be reliable, authentic, and where appropriate, replicable. (REF NS 2.2.6 (f), also see [Section 2 of the Australian Code for the responsible Conduct of research](#))

This section will provide the Committee with information as to how you intend to deal with these issues.

13. DATA COLLECTION

- (a) Who will collect the data? *(More than one box may be checked – to check, double click on box and follow the menu instructions.)*

self (researcher)

research assistant

volunteers

paid collectors (other than research assistant)

students (see note ❖ below)

other (please describe)

Note ❖ Researchers need to ensure that if students are to be used to collect data for the academic's research purposes as part of class or course activity, it is done fairly and without any possibility of pressure or perception of undue influence.

Therefore, if you wish to use students to collect research data for your own research purposes, you must ensure that:

- students are given a choice as to whether or not to participate and have their data used
- students' assessment is not related to their participation in this research
- students are presented with an equally available alternative activity which provides the same academic credit
- the work of students is acknowledged in any outcome (e.g. cited in any publication)
- participants are made aware of the use to which the data will be put (i.e. that it will be used for purposes in addition to its function as a student assignment)

(b) How will the data be collected? (*More than one box may be checked.*)

SURVEY/QUESTIONNAIRE

INTERVIEW

FOCUS GROUP

COVERT OBSERVATION

PARTICIPANT OBSERVATION

TELEPHONE PHONE SURVEY

PSYCHOLOGICAL TESTING/QUESTIONNAIRE

PHYSIOLOGICAL/MEDICAL TESTING/ASSESSMENT

AUDIO/VIDEO RECORDING

ELECTRONIC/DIGITAL RECORDING

ACCESS TO RECORDS (SEE BELOW IN QUESTION 14)

OTHER (PLEASE DESCRIBE)

(c) Have you attached a sample of your measurement instrument(s), e.g. survey, interview format, etc? If you are still developing your measurement instrument(s) (e.g. questionnaire, interview schedule), please give as much information as you can at this point (e.g. outline of questions).

Yes, I have attached a sample of interview and questionnaire prompts.

(d) If you are still developing your questionnaire/measurement instrument(s), when will you be able to provide a final copy to the HREC?

14. INFORMATION DATABASE OR PERSONAL RECORDS

(a) DOES YOUR DATA INCLUDE ACCESS TO AN INFORMATION DATABASE OR PERSONAL RECORDS FROM ANY OF THE FOLLOWING SOURCES? IF YOU SELECT ANY OF THE OPTIONS BELOW, PLEASE PROVIDE DETAILS IN THE TEXT BOX. IF NOT, PLEASE PROCEED TO QUESTION 15.

UNIVERSITY

HEALTH OR MEDICAL AGENCY (IF YOU SELECT THIS OPTION, YOU MUST COMPLETE AND ATTACH [Appendix D.](#))

STATE OR COMMONWEALTH AGENCY (THIS OPTION INCLUDES A MINISTER, DEPARTMENT, OR BODY ESTABLISHED UNDER A STATE OR COMMONWEALTH ACT, OR A PERSON APPOINTED BY A STATE GOVERNOR OR THE GOVERNOR-GENERAL, OR HOLDING OFFICE UNDER A STATE/COMMONWEALTH ACT, A STATE/FEDERAL COURT AND THE STATE/FEDERAL POLICE).

OTHER

No

(b) How will you obtain institutional approval for access to the database or personal records?

(c) DOES YOUR RESEARCH INVOLVE ACCESS TO STUDENT RECORDS AT THIS UNIVERSITY? IF YES, PLEASE REFER TO: <http://www.gsu.uts.edu.au/policies/privacystudent.html> AND INDICATE HOW YOU WILL FOLLOW THIS PROTOCOL.

15. DATA INTERPRETATION AND ANALYSIS

(a) Regardless of whether data collected is qualitative or quantitative, how do you plan to transform these data into material that is valid and reliable? For example, from tape recording to transcript, from questionnaire response to tabular form, etc.

The data collected from interviews will be in audio form. I will transform interviews audio recordings in a transcript form. I will transform audience questionnaire responses in tabular forms.

- (b) How will you analyse or interpret your transformed data, whether qualitative or quantitative? For example, explain how will you understand /uncover relationships, or your reasons for using particular statistical test(s).
-

I will use data visualisation tools such world clouds to analyse recurring keywords in interviews and audience questionnaires. I will use visual maps to represent in a visual form the network of actors involved in interface design and the relations among them.

Direct quotations from participants interviews and questionnaires will be included in the final thesis to explain the most relevant points that will come up in the course of the research.

16. DATA STORAGE

Data must be stored and secured for a minimum of 5 years after *publication* (Some data is required for longer periods of time and the storage will need to take this into account. For further details on retention requirements, see under Section 18 Disposal of Data). The data should be stored so as to ensure maximum privacy for participants, reliability and retrievability of data.

- (a) How will the data be stored?

electronically – hard disc (with back-up)

microfilm

paper questionnaires/surveys

video-tapes

audio-tapes

ELECTRONIC/DIGITAL RECORDING

transcripts of tapes/recordings

handwritten notes

coded data

confidential but potentially identifiable data

non-identifiable (anonymous) data

other (describe)

- (b) Who will have access to the data?
-

Only he researchers will have access to the data.

17. USE AND PUBLICATION OF DATA

- (a) How do you intend to use and/or publish the data?

thesis

JOURNAL ARTICLES

media

conference paper

book

electronic publication

other (please give details)

- (b) If you envisage any additional use of data in the future, you should consider this at the point of data collection, and obtain any necessary consent and approval, as the Committee cannot grant retrospective approval.

Do you think you will use the data in any other way than outlined in this application? *If yes, give details.*

No

18. PRIVACY AND CONFIDENTIALITY

As a general principle, privacy and confidentiality should be respected at all stages of the research (with raw data, processed, published or archived), and by all those involved in the research (including the researcher, research assistants, administrative assistants, students, interpreters, translators, data processors, members of focus groups, etc.)

Note: Privacy and confidentiality is complicated in NSW because it is governed by a number of separate Acts:

- *the Privacy Act 1988 (Commonwealth)*
- *the Privacy and Personal Information Protection (PAPIP) Act 1998 (NSW)*
- *the State Records Act 1998 (NSW)*

THE FOLLOWING PRIVACY PRINCIPLES APPLY TO ALL RESEARCH CONDUCTED BY STAFF AND STUDENTS OF THIS UNIVERSITY

PRIVACY PRINCIPLES

- 1) *Restricting collection of information to lawful purposes and by fair means*
 - 2) *Informing people why information is collected*
 - 3) *Ensuring personal information collected is of good quality and not too intrusive*
 - 4) *Ensuring proper security of personal information*
 - 5) *Allowing people to know what personal information is collected and why*
 - 6) *Allowing people access to their own records*
 - 7) *Ensuring that personal information stored is of good quality, including allowing people to obtain corrections where it is not*
 - 8) *Ensuring that personal information is of good quality before using it*
 - 9) *Ensuring that personal information is relevant before using it*
 - 10) *Limiting the use of personal information to the purposes for which it was collected*
 - 11) *Preventing the disclosure of personal information outside the agency*
-

(INFORMATION ON HOW THE PAPIP ACT 1998 APPLIES TO UTS CAN BE FOUND ON THE [University Records](#) WEBSITE)

(A) WILL THIS RESEARCH BE UNDERTAKEN IN CONFORMITY TO ALL THE ABOVE PRIVACY PRINCIPLES? IF NOT, PLEASE EXPLAIN.

YES

(b) How will you ensure the security of the data?

Yes

(c) How will you *protect* the confidentiality/privacy of your participants? (For example, will the data be de-identified and the codes stored separately?)

I will prevent the disclosure of information by safely storing raw data in a locked up filing cabinet and the hard drive and back up disk of my lap top computer which are password protected.

(d) TO WHAT EXTENT WILL YOU OR ANYONE ELSE BE ABLE TO IDENTIFY THE RESEARCH PARTICIPANTS FROM THE PUBLISHED OR UNPUBLISHED DATA?
PLEASE DESCRIBE.

INTERVIEWEES ARE DESIGN, ART PRACTITIONERS AND CULTURAL PRODUCERS WHO WORK AND PERFORM IN THE PUBLIC DOMAIN. THE DATA COLLECTED WILL BE IDENTIFIED ACCORDING TO THE PARTICIPANTS' INDICATION AS PER CONSENT FORM.

AUDIENCE PARTICIPANTS WILL NOT BE IDENTIFIABLE AS PARTICIPANTS' QUESTIONNAIRES ARE ANONYMOUS.

19. DISPOSAL OF DATA

You should give your participants a choice as to how the data will be ultimately disposed of, and this should be addressed in the [consent form](#). For example oral histories could be archived for future reference.

(a) Will the data be archived or destroyed? If the data is to be destroyed, give a destruction date. (See below for details on retention requirements for Data). The destruction of research data should be authorised in accordance with the UTS Records Management Policy through the completion of the [Records Destruction Authorisation Form](#).

Interview data will be archived in digital format and not destroyed after the completion of research.

Audience questionnaires and field notes will be archived for 5 years.

(b) If the data is to be archived, who will have access to it, and will there be any conditions attached?

It is a widely recognized practice in writing on design to acknowledge the design practitioners' work with their names or pseudonyms. It will be a serious infringement of a recognized work practice not to identify participants, unless participants themselves declare they do not want to be identified. The consent form provide the different types of identification.

RETENTION REQUIREMENTS: THE AVCC GUIDELINES ON THE STORAGE OF DATA REQUIRE THAT DATA BE KEPT FOR A MINIMUM OF 5 YEARS AFTER PUBLICATION OF RESEARCH. HOWEVER, IN NSW, LONGER RETENTION REQUIREMENTS ARE REQUIRED FOR RESEARCH ON HUMAN SUBJECTS WITH POTENTIAL LONG-TERM EFFECTS, RESEARCH WITH LONG-TERM ENVIRONMENTAL EFFECTS, OR RESEARCH CONSIDERED OF NATIONAL OR INTERNATIONAL SIGNIFICANCE, IMPORTANCE, OR CONTROVERSY. IF THE DATA FROM THIS RESEARCH PROJECT FALLS INTO ONE OF THESE CATEGORIES, CONTACT UNIVERSITY RECORDS FOR ADVICE ON LONG-TERM RETENTION.

SECTION IV – ADDITIONAL ETHICAL ISSUES

20. OTHER ETHICAL ISSUES:

ARE THERE ANY OTHER ETHICAL ISSUES IN RELATION TO YOUR RESEARCH THAT YOU WISH TO COMMENT UPON?

SECTION V - FINAL CHECKLIST

To ensure minimum delay in the consideration of your application, please indicate by ticking the appropriate boxes below that you have supplied the following:

I have attached the following supporting documents: **Y** **N/A**

Letter of candidature (students) *or*

Doctoral or Masters assessment (students)

Budget page from funding application

Explanations of any technical terms used

Signature from Dean/Nominee to access students

Consent form and/or information sheet

Translation of forms/information letter(s)/instruments

Surveys/questionnaires/outline of questions

Approval from external institution/community group

Additional copy for Jumbunna if required (see Question 11a)

Relevant contracts/agreements

Appendix A – Clinical Trials

Appendix B – Children

Appendix C – Language/Culture

Appendix D – Privacy

Signed declaration(s)

Original & 16 copies of this application (total: 17 copies)

I have emailed my application to Research.Ethics@uts.edu.au

(note: all attachments should, where possible, be consolidated into one electronic document before being emailed)

DECLARATION

I declare that the information I have given above is true and that my research does not contravene the *National Statement on Ethical Conduct in Research Involving Humans* and the UTS policy and guidelines relating to the ethical conduct of research.

I also declare that I will respect the personality, rights, wishes, beliefs, consent and freedom of the individual participant/subject in the conduct of my research and that I will notify the UTS Human Research Ethics Committee of any ethically relevant variation in this research.

In signing this declaration, I guarantee that this form has been distributed to each member of the research team, and they have agreed to abide by the principles and processes of the research as outlined in this application.

_____ Date: ___/___/___

Chief Investigator/Supervisor

Name & Title

_____ Date: ___/___/___

Student (if applicable)

Name

A4 RESONANCES: OBJECTS, LIVES AND STORIES OF LIVERPOOL. EXHIBITION TEXT

Curator: Francesca Veronesi

Introduction

Resonances takes you on a journey to discover Liverpool's rich heritage through the objects that citizens and families donated to the museum over the years.

Objects shape who we are, the people we engage with, our attachment to places, our values and ideas. We can only speculate about the meanings and significance that an object held for a person or a family. The common intention of the donors to leave a trace of their time to the future generations is a running thread, unifying the variety and diversity of what can appear as an eclectic mix of artefacts, photographs and oral histories.

Resonances explores over two centuries of Liverpool's history through the connections that objects open up between the people who donated them, the community and the places they lived in at a point in time. These connections are for you to search for, and engaged with, as you interact with the extensive collection of more than a hundred objects on display. Your interest and curiosity about how the objects were originally used, why people held them and cherished them, are that which makes the objects resonate, giving them a voice.

An environment that is responsive to your movement and choices enables you to find a path through six different journeys. These represent the most common requests people ask when donating an ex-voto, that is, an offering given in fulfilment of a vow or in gratitude for a benevolent action. As a secular shrine, the museum is furnished with the offerings that people donated through time, their private keepsakes and memories are now part of a collective heritage.

Resonances organises people's donations around six themes: Home, Community, Children, Work, Good Times and Difficult Times. Choosing a theme you embark on a journey to explore Liverpool's past, through the events, people and places that shaped Liverpool's history, culture, social and economic life. Each journey is a unique experience. Let the objects tell you their stories.

CHILDREN

What was it like to grow up in Liverpool at the turn of last century, in the 1930s, or later on in the 1950s? What kind of games did children play, what was school like? Objects, photographs and oral histories help traveling back to a time when entertainment for children meant swimming at the local swimming pool: the Georges river. They would learn the basics at the 'duck pond' at Casula and by the time they could swim at the Weir they were 'graduated'.

Children often had to take long walks in the bush to go to school. In the 1930s schools were over crowded and could not provide basic writing equipment. Hammondville Primary school used a sun dial because the school didn't have a clock. Designed to accommodate 40 students, the school hosted 91 children when it opened in 1933. With a population of 271 adults and 374 in the early 1930s, Hammondville appeared to be a town driven by children. Residents recalled Dr. Lovejoy, Dr. Pierie and Dr. O' Brien as dedicated family doctors coming to their

home. "They looked at you and knew what was wrong". Common illnesses used to be treated with house remedies. Annual baby shows were held in Hammondville where 'champion babies' were voted amongst various categories. Can you picture the babies all dressed up in their fancy dresses, bonnets and gowns? The children portrayed in the photographs on display were going to become prominent members of the community. Mac Ashcroft, whose family established a leading business in the meat and live stock trade in Liverpool, served as an officer in the RAAF during WWII.

Children who grew up in farms were expected to help their parents working in the fields and feeding the animals before and after school. Migrants from other countries brought their music and songs along in their journey to Australia. Record players, old radios, music sheets and children song help tuning into the sounds of the past.

In more recent years youth groups were involved with graffiti art and mural making at Junction Youth Centre and Casula Powerhouse Art Centre. Since the early 1980s these legal walls have provided a space for young people to express their talent.

COMMUNITY

Objects are animated, they possess agency. Reaching to a larger world, they tell not only about their owners, who possessed them, cherished them and ultimately donated them to be kept for the future. They also speak about the context and the community they belonged to. Advertising materials from E.J. Ashcroft and Sons, a meat wholesale and butchery established in Collingwood 1910, tell about a local business renowned for its quality and competitiveness, whose growth and success became a resource for the whole community in Liverpool.

Other local businesses such as David Jones and Bushell Teas as well as many families in Liverpool supported the community in times of difficulties donating cottages and halls to Hammondville settlement. Regardless of religious faith and provenance, Hammondville housing scheme provided the opportunity to purchase a home offering a new start to hundreds of families. Residents in Hammondville recalled a strong sense of community in the settlement, however discrimination to children at school and from local shopkeepers in Liverpool was often reported as an issue.

Discrimination and criticism were also experienced by residents at Green Valley, a housing commission estate established in the 1960s, which was labeled as 'the dodge city' by sections of the media at the time. In 'Whatever happened to Green Valley?', a pioneering community documentary, Peter Weir invited residents at Green Valley to present an image of their community and daily life addressing the social issues involved in rapid urban development.

From Green Valley started the successful career in the transport industry of Frank Olivieri. Immigrated from Italy in 1949 in search of his father, Frank started as bus driver on the Green Valley Route, then established the Oliveri Bus Company. The first non-British migrant to become major of Liverpool, Frank's personal story is intertwined with the city's social life and economic growth.

In most recent years Liverpool's community came together to protest against the federal government's plan to build an International airport at Holsworthy and the associated environmental pollution threat, menace to wildlife and endangering of Aboriginal sites.

And You? What does 'community' mean to you? Do you feel you belong to one? Which of the objects on display are connected to your community?

DIFFICULT TIMES

Difficult times take you to explore personal stories of strength, courage and resistance together with the struggle of the whole community facing the hardships of wars, isolation of concentration camps, poverty during economic recession, and the natural disasters affecting the area such as the recurring floods and fires.

Liverpool paid a high tribute to the wars sending its young men to serve in the Army abroad as well as hosting military camps in the region since the early 1900s. William Learoyd joined the Australian Army as a member of the NSW Army Medical Corps in Sudan, Mac Ashcroft took part in the Burma campaign during WWII, and George Cantello, pilot of the United States Army Air Forces, died in a plane crash in Hammondville on the 8th of June 1942 while fighting in the defence of Sydney.

In 1914 the War Precautions Act stated that each 'enemy subject' was required to report to military authorities. Enemy subjects were considered any natural born Australian of German descent, or other nationality of countries at war with Australia. Selective internment was organised, with the largest camp for German internees at Holsworthy in 1914. With approximately 5000 inmates at its maximum capacity, the camp became a small German village with a local bakery and theatre. Prisoners were released in 1919.

Economic recession during the Great depression in the 1930s hit Liverpool very hard with large numbers of unemployed whose prospects of finding a job was limited. A work relief scheme was developed by NSW government through a system of coupons, which could be claimed in exchange for goods, such as meat, bread, potatoes and jam. The depression impacted on the city very strongly, forcing people to rely on local resources and solidarity from the community to survive. Growing vegetables and chicken, fishing in the Georges river and catching rabbits, appeared to be means to fight scarcity and starvation at the time.

The Madonna of Lourdes from the private collection of Bruna Trimarchi, represents the stories of the migrants who escaped from the wars and aftermath of civil strife in their home country in more recent years in search for safety, education and employment opportunities to make a new start for themselves and their families.

GOOD TIMES

Good times are times of prosperity, recreation and leisure. They represent a diversion from working and domestic duties of everyday life providing a time for social gathering, sport, play and entertainment.

The first record of Liverpool's long tradition of balls and dances is an invitation to a ball issued by Governor Macquarie to the daughter of Mr Bunker, a prominent member of the Liverpool colonial society.

Dances have been a very popular form of recreation throughout Liverpool history. In the 1930s and 1950s dances were held on a regular basis at the local halls such as the Albion Hall in Bigge Street, Rossmore school hall, the Holdsworth hall, the Blinman's hall at Glenfield. Annual balls such as the Orphanage, Ambulance and Saint Lukes were organised by the local dance committees.

Hammondville residents remembered running dances at the Hammondville hall for the

Ambulance club and the Harmony club. Other clubs in Hammondville were the Black Cat, a ladies' club and the Younger set, a youth club. Community singing and concerts were held in the Town Hall, which remained the main attraction in town before Liverpool Picture place was opened during WWI.

Annual parades, processions, public celebrations such as the Empire Day the Festival of Progress and Liverpool Show in the 50s represented extraordinary events. Everyday life, however, was simple and people had to make their own fun visiting neighbours, listening to music and playing cards.

The Georges river provided clear waters for fishing and swimming. A swimming pool operated in river presumably at Hind Park Baths. Weekend and school picnics were very common since the early 1900s with the most popular destinations at the Old Paper Mill, Sandy point and Casula.

One of the first sports club established in Liverpool in 1891 was the Glenfield cricket club, followed by the Football club in 1901. Amongst the oldest sport clubs are the Liverpool Golf and Tennis Club founded respectively in 1911 and 1920.

Liverpool's long tradition of horse breeding and racing began at Warwick farm in the late 1880s. Developed initially as a horse stud, Warwick farm became a successful private training track, which produced Melbourne Cup winners. Edward and Mary McKinnon immigrants from Scotland coming to Liverpool in the 1930s recall their first impression of the city as a 'western town', as in the American pictures: everyone was riding a horse or a sulky and horses used to be tied up outside the shops and along the posts.

HOME

Home is an idea, a concept, a place where we feel safe, a place to which we belong. Our everyday objects, often overlooked as trivial, help exploring the ties between people and places and how these changed over time.

The country defined by the natural boundaries of the Nepaeon and the Georges rivers was home to the Cabrogal and their neighbours the Dharug, Gandangara and Tharawal tribes. Material evidence of Aboriginal link to the land can be found in scar trees, place names, rock painting and the wealth of stories, knowledge and tradition that still lives in the present.

Back in the early days after its foundation in 1810, many European settlers chose Liverpool as their new 'home', finding affordable land suitable for farming. Old settlers are represented by the collection of Pearce and Learoyd families and their long-term involvement with Liverpool, from a first butchery established in 1837 and run by the family for a hundred years, to a long line of descendants with a tradition of Aldermen elected in Liverpool.

In 1932 Reverend Canon Hammond established Hammondville Pioneer Homes settlement on 13 acres of land at Moorebank near Liverpool to help families with three or more children who had been experiencing unemployment and eviction during the great depression. By 1946 over 150 houses had been built with more than 500 people calling Hammondville their 'home'. Objects and life stories from Hammondville testify a successful and unique experiment in response to a time of great difficulty, social and economic challenges, they tell about a visionary man who made a new start possible for many. They also tell about people's resilience, adaptability and hope for the future.

For migrants, refugees and asylum seekers 'home' is a concept that always negotiates belonging to the adopted country and the homeland. Liverpool's migration heritage is here represented by the collection donated by Bruna Trimarchi, whose family was one of the first of Italian immigrants settling in Leppington in the 1930s. The Italians established themselves on farms and engaged in the marked gardening business. They soon became a large community in Liverpool and surround areas.

In 1960 the NSW Housing Commission developed one of the largest housing schemes in Liverpool on a 1,500 acres estate at Green Valley. In a decade the population in Liverpool rose from 30,000 to 75,000. Liverpool is now home to a dynamic, multicultural population of more than 180,000 people. With almost 40% of the population born overseas, people in Liverpool have more than one home.

Objects tell about our space, ourselves and our stories. And you? Where and what is 'home' for you?

WORK

Work plays a major role in human life, on a personal, social and economic level.

Most of the early settlers who moved to Liverpool to work for estates found employment in farming and pastoral activities. Poultry farming, stock grazing, wine making, wheat and fruit growing and market gardening, continued in Liverpool for over two centuries. Early industries related to rural processing such as wool scours, tanneries and a flour mill were established in Collingwood and Moorebank on the river.

The construction of the railway, modern abattoirs and storage sheds in mid 1800s created an infrastructure to support the livestock and meat industry and attract investments in the area, with Percy and Ashcroft being the leading businesses in the wholesale and retail butchery.

A paper mill was one of the first industrial plants in Liverpool. By 1879 it reached a production of 25 tons of newsprint a week, employing also boys and girls in the paper manufacturing process with ongoing 12 hours shifts.

In 1910 the Challenge Woollen Mills was established on the site of the old paper mill by Henry Bull, whose family had a long tradition in mercantile trade. By 1914 it was one of the larger employer in Liverpool. With two hundred workers in 1930, the Woollen Mills became a pillar of the local economy for decades producing flannel and blanket on a large scale. The blanket on display is one of the 7.5 million blankets that the mills has produced over 6 decades of manufacturing until it closed in 1975. Employers at Woollen Mills recall their fifty-five hours working week for a thirty two dollars and six pence salary.

In 1948 Standard Telephone and Cables established a large factory in Moorebank. After 10 years it employed over 1300 workers at the production of domestic electric appliances, radio and television equipment. In the 1960s Liverpool experienced a significant expansion of industrial enterprises alongside with a rapid population growth and urbanization.

Can we foresee where is Liverpool's economy heading toward in the next future? What are Liverpool's current leading industries? What will be their role in the transition from an industrial to a post-industrial economy and in keeping the legacy of Liverpool's entrepreneurial past?

A5 AN ANALYSIS OF THE LIVING STREAMS AUGMENTED REALITY PROJECT BY NATASHA LAY

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FAST FACTS: Introduction and synopsis

WHAT IS LIVING STREAMS?

Living Streams is a unique augmented reality project that tells the stories and histories of the Georges River with a specific focus on the Chipping Norton Lakes area in southwest Sydney, Australia. The project virtually links the water and surrounding sites of historical significance to oral and visual historical records, art, audio, life histories, photographs, music and environmental data. Essentially, the project is a multimedia atlas of the Georges River that aggregates web-mapping applications and social and location-based media. The project is accessible through the augmented reality smartphone app 'Wikitude' on iPhone and Android systems.

WHEN WAS THE PROJECT CREATED?

The project was commissioned in November 2011 and was completed in May 2012, culminating in the launch event in October 2012. The smartphone app and the website are both still active and accessible.

WHO CREATED THE PROJECT?

Living Streams was born out of a partnership between Liverpool City Council and Curious Works, and was funded by the Western Sydney Regional Organisation of Councils through the 'Water in the Landscape' project.

WHY WAS THE PROJECT CREATED?

The Georges River is of great cultural and ecological significance to the local community in southwest Sydney, in particular the Chipping Norton area. In recent times, local authorities had overlooked its importance and the project developers sought to once again highlight its significance and contribute to the capacity of the community to be better informed of the importance of water as a natural resource. The developers also aimed to engage the community through the creation and contribution of live content, addressing water issues in the area and generally raising the profile of the Georges River.

WHAT LIMITATIONS WERE THERE IN CREATING THE PROJECT?

As with any large-scale multimedia project, the developers came across a number of barriers that delayed project completion. Although the augmented reality aspect of the project was a new concept to the inexperienced developers, the main barrier to completing the project was in fact a number of ongoing staffing retention issues.

AUDIENCE

WHO IS THE PROJECT TARGETED TO?

Given the context of the project and uncomplicated content it would seem that *Living Streams* is targeted towards a broad audience, but with a particular focus on primary and secondary school

students, young adults, and the general local community with a keen interest in their surrounding environment or local history.

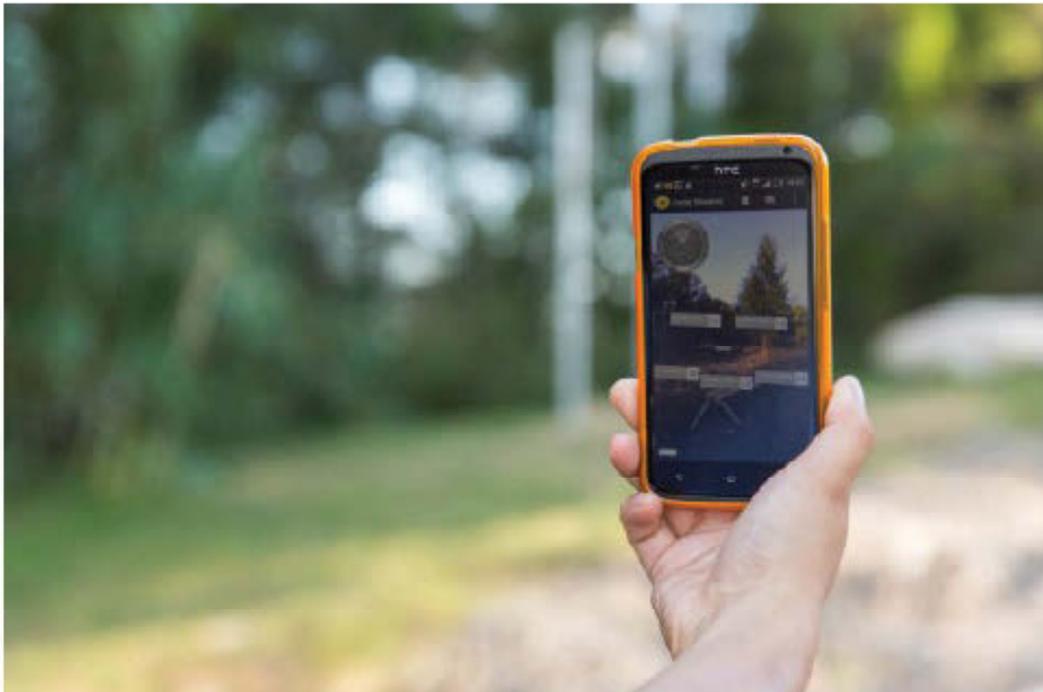
It should be noted that as the augmented reality app is only accessible via smartphone technology, it can be assumed that the full user experience is only directly targeted to interested audiences with access to smartphones. This is limiting to the extent that those without smartphones are unable to enjoy the experience of the app at all and are limited to only viewing the website component of the project, without being immersed in the project at the actual site.

PLATFORM

HOW DOES THE PROJECT USE THE CAPACITY OF THE PLATFORM TO TELL THE STORY?

As *Living Streams* exists as both an augmented reality app with a corresponding website component, this online documentary could be considered as multiplatform. Having said this, however, whilst the website cannot be viewed in isolation, the app itself can, and could therefore also be considered as a single platform project.

Presuming that users have smartphones, the content is accessible via the freeware 'Wikitude' app which can be downloaded on either iPhone or Android systems. The location-based augmented reality view provides users with a direct view of reality, with the additional enhancements of computer-generated content. This means that when in proximity of the project points of interest and holding up a handheld device at eye level, the video see-through technology brings up options to view content whilst still viewing the real world. The solid state compass can pinpoint a fairly accurate location of the user and effectively maps the position and orientation of the user's handheld device, allowing the user to understand where they are in relation to the points of interest.



The app presents information related to the specific location through a number of mediums, including text, audio (oral stories and natural sound effects), and visual (historical photographs, paintings, drawings, videos etc.). This provides the user with a variety of options to download and appreciate the content, ensuring that users are able to experience the histories of the river and feel immersed in the rich river culture.



DOES THE PLATFORM SUIT THE AUDIENCE?

1/ LIVING STREAMS ON 'WIKITUDE' – THE APP

An analysis of the target audiences and the suitability of the platform to each is below.

Students and young adults interested in local history

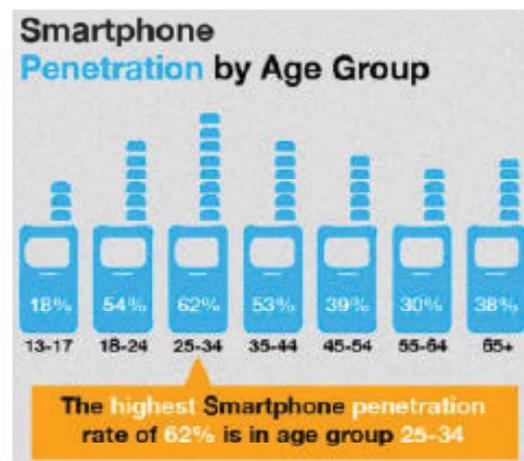
As the augmented reality project involves access to a smartphone and being within proximity to the sites, the app may not be suited to younger students who require supervision and are not able to enjoy the full experience.

The *Living Streams* application would be well-suited to interested secondary school students as the platform is accessible and engaging to young adults who are more comfortable with online technology.

The general local community of Chipping Norton

According to the 2011 *Census of Australian Population and Housing* conducted by the Australian Bureau of Statistics, the local community of Chipping Norton is fairly well-off and is considered to be one of the most affluent areas of southwest Sydney. This implies that the general local community would have decent access to smartphone technologies.

The median age of the population is 37, which is only marginally lower than the NSW state average of 38. Given the high market penetration of smartphones in the 35-44 age group in Australia as indicated below, it can be assumed that a similar high percentage of those in Chipping Norton also own and use smartphone technologies. For this reason, the platform choice of an augmented reality application is considered well-suited to the general local community of Chipping Norton.



<http://ansonalex.com/infographics/smartphone-usage-statistics-2012-infographic/>

2/ LIVINGSTREAMS.NET.AU – THE WEBSITE

The *Living Streams* website is very much complimentary to the augmented reality app, in that if viewed in isolation, the experience of the project is of a significantly lesser quality. Having said this though, the website does still present the project content, including the map with points of interest, so those without smartphones are still able to access the content online. This option may be more suited to those less technologically inclined.

Having the website component is more accessible audiences that either do not have access to smartphones, or are not confident in their usage of apps such as *Wikitude*. This includes younger students, and perhaps more senior members of the local community.

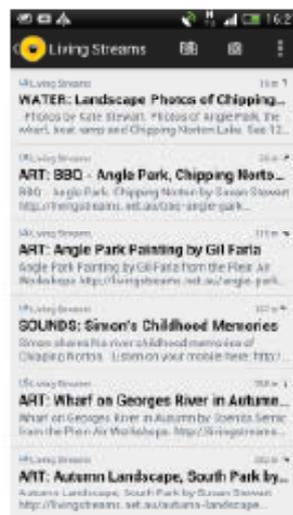
USER INTERFACE

DESIGN AND LAYOUT

Visual design

The visual component of the app is simple and appealing although having said this, it is very standard without anything exceptional in graphic design. Having said this though, the app is location-based and users must download the content on their devices through an internet data collection, meaning that heavy visuals would be overwhelming.

The app is designed well and allows users to either view the points of interest in camera view (with enhanced reality via the video see-through), or map view via Google Maps. The map view is particularly impressive, with pin icons indicating the location of the project sites of interest and the distance from the user. There is also an option to retrieve directions and a route in which to follow to reach the site in question.



NAVIGATION

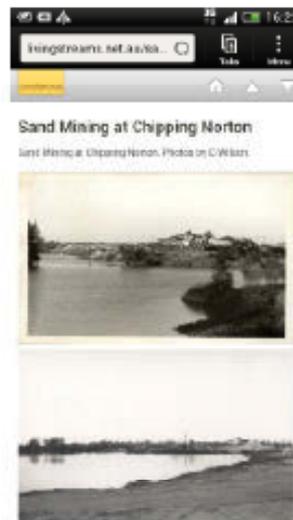
Upon loading the app and entering the project, the first screen shows a map of the area with pin icons representing all the sites of significance. These points are also available in list form, where users are able to sort by distance



The content of the project is categorised in to five streams, being sounds, art, history, land and water. Upon selecting which story to explore by tapping on the item, users are taken to the description screen, where background information and further options are provided



From this, the user clicks on the link provided, which, depending on the item selected, will either redirect the user to an external site hosting the text/audio such as YouTube, or remain in the app to show the text.



This process is the same for each text, which provides consistency and allows the user to understand the layout and navigation of the project.

Although most points of interest are easily accessible in person, not all icons are accessible by land. Being focused on the river, some stories are actually located on the river, and users are better able to access the points by boat. However, the app still allows access to the content as it is proximity-based

The website

The website shows the five streams of content which can be filtered in to the topics of history, land, water, art and sounds. By selecting a stream – for example, history – all of the content related to the history of the river is displayed on a single page, and users can select which account of river history to engage with. Overall, the navigation for the website is simple and straightforward.



USER EXPERIENCE

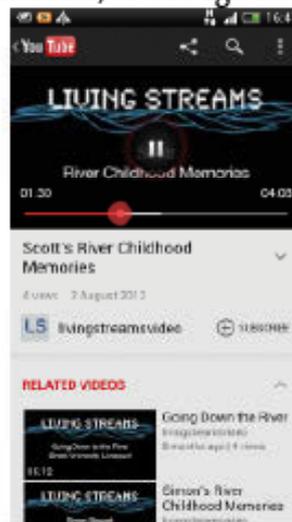
ACCESSIBILITY

Speed

Using a Telstra data connection, downloading the content at the site was speedy and there were no issues with efficient access to content.

Sound

The audio content hosted by YouTube could potentially be difficult to hear if there are other external sounds in reality that are louder than being projected from the phone. Additionally, a lack of captions or text means that the audio is not accessible to the hearing-impaired. This could be rectified with a text accompanying the audio, or through the use of synchronised captions.



Language

Although the plain English content produced is simple and easy to understand, it should be noted that as the project is targeted to the local community of Chipping Norton, the project should be able to better cater for the high percentage of the population that speak a language other than English – in fact, almost half do not speak English at home. However, without being too harsh and taking into consideration the limitations of budgets to translate content, perhaps the app and website could provide a link to sites such as Google translate, to at least provide that option to share the content with culturally and linguistically diverse communities.

FLOW OF CONTENT

A lack of introduction to the project or instructions to inform the user of how to navigate the app leads to a confusing flow of content. Although this could have been deliberate to ensure a more organic experience of the Georges River, the content is not numbered and there are no references, so users are unable to keep track of which items had already been viewed. This can lead to a feeling of time being wasted and an eventual sense of frustration with the app.

At the project launch event in October 2012, guests were invited to use their smart phones to scan a QR (quick response) code to connect to the website and contribute content. Whilst the launch event was guided and promoted a positive full user experience for participants, it was only one day – meaning that if users were to experience the augmented reality app now, there would be difficulty in understanding the flow of content. As the project is organised geographically, there is

not an obvious flow of content, meaning that users can get disoriented with the amount and type of information downloaded without the ability to file it in any order.

QUALITY

Overall, the quality of the content is above satisfactory. The content is produced by members of the local community, adding a certain authenticity to the project. The experience of hearing local recollections of river histories allows users to be enveloped by their natural surroundings, whilst at the same time experiencing the past and appreciating times past. Two examples from the Sound and Art streams are analysed below.

Sound – Using the example of Andrew’s River Story

- The audio is hosted by YouTube and not accompanied by any images, lacking a visual accompaniment to the oral story-telling
- The user cannot access the audio in the app but is directed to YouTube, where it is hosted. The audio should be built in to the app for ease of navigation.
- The audio is over 4 minutes in length which is although detailed, can become tedious and can also drain the battery of smartphones.

Art – Using the example of ‘Autumn Trees by the Lake’ by Polly Tran

- The artwork is contributed by members of the local community and of a high standard, often interesting and quite unique. The artworks provided local interpretations and perceptions of the Georges River.

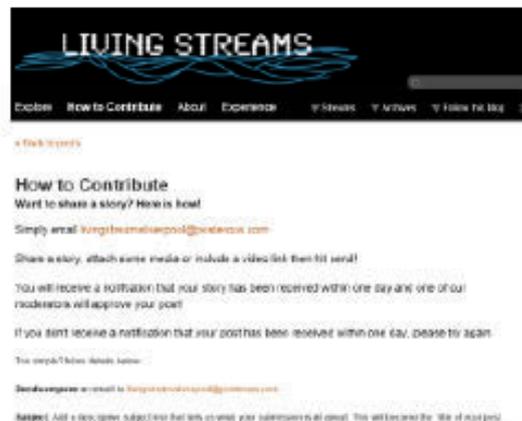
The quality of the other 3 streams (history, land and water) were also of a high standard, with incredible detail, informative of the river’s history and culture, effectively immersing the user in the story.

INTERACTIVITY

User-generated content

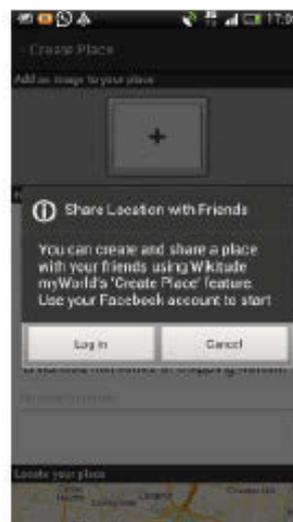
The app description itself encourages users to “contribute building a living library of artworks and stories from Liverpool’s local communities that are inspired by the river and its cultures.” This is a very positive and engaging platform for the local community to store, edit or retrieve media content about the river through both the app and the website. Users are also able to subscribe to the blog through an RSS feed.

Uploading new content continues to be an option for the public to contribute, as the project aims to provide an ongoing process of learning and engaging with the Georges River. The website has a page titled ‘How to Contribute’, with specific details on how users are able to upload their own content and contribute to the project via the host ‘Posterous’. This convenient method of submitting content is encouraging for new users to contribute new or live content.



Sharing via social media

The app allows users to share their location in a number of ways, with options including Facebook, Twitter, Google+ and Wikitude.



Although *Living Streams* does not have a Facebook page, users are still able to interact with one another in the comments section of the webpage, allowing users to comment on their experience of hearing the stories and viewing the artworks of the project. Users are encouraged to comment and share their own experiences of the river in this way.

CONCLUSION

Overall, *Living Streams* is a unique project that is simple but effectively captures the histories of a place that had not been considered before. Through the use of cutting-edge technology, the target audience is able to embrace the culture of the Georges River and contribute to the memories created by the historic environment, and explore the digital and online capabilities of online

multimedia.

THE BEST BITS

- ◊ Community engagement and ability to contribute new or live content to the app or website
- ◊ The project is a unique presentation of information about cultural and environmental history, which is considerably more engaging than plain text on a page
- ◊ By engaging with local communities and a broader audience with experiential learning of the river and its living heritage, the project effectively fostered an attitudinal change within the local community on the presence and importance of water in the environment.

LINKS

- Living Streams website – <http://livingstreams.net.au/> (<http://livingstreams.net.au/>)
- Water in the Landscape – <http://www.waterinthelandscape.org.au/> (<http://www.waterinthelandscape.org.au/>)

To experience *Living Streams* augmented reality yourself, follow the instructions below:

- 1/ Download "Wikitude" on your iPhone or Android mobile.
- 2/ Visit any one of the locations with a marker on [the map](http://livingstreams.net.au/). (<http://livingstreams.net.au/>)
- 3/ Open Wikitude, slide over to Favourites and select "All Worlds"
- 4/ Scroll down until you find "Living Streams" (be aware this world will only show if you are in the vicinity of a point of interest)
- 5/ Discover stories through the AR experience as you travel down the Georges River!

Posted by [natashalayonline](#).

0 thoughts on "AN ANALYSIS OF THE LIVING STREAMS AUGMENTED REALITY PROJECT"

1. **Francesca** says:

Your comment is awaiting moderation.

April 19, 2013 at 2:58 pm

Hi Natasha, thank you for such a thorough analysis of the Living Streams project! I'm Francesca Veronesi the project coordinator. The project is a collaborative effort between myself, Liverpool Council and Curious Works together with all citizens in Liverpool and cultural institutions who participate in the production. I would like to acknowledge them all: Casula Powerhouse Art Centre, Liverpool Historic Society, Street University, Liverpool Art Society, Miller Technology High School, Chipping Norton Primary School, the Clay house at Casula, Sister 4 Sister, Little Sisters and Sister Elders Aboriginal Groups.

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