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Immersive exhibitions in the beginning of the 21ˢᵗ century:
Understanding theory and practice.

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LIST OF ABBREVIATIONS

RMIT   Royal Melbourne Institute of Technology, Melbourne, Australia
V&A   Victoria and Albert Museum, London, UK
NGV   National Gallery of Victoria, Melbourne, Australia

GLOSSARY

Immersive – usually refers to virtual and augmented reality, theatrical exhibitions (scenography), digital interactives (often meaningless, i.e. have no impact or goal); in this study, it is a holistic framework for a system of tourist services

Exhibition – temporary and permanent public display of artworks and artifacts as well as illustrative installations of certain topics and concepts

Exhibit – artifact / an installation in the exhibition which acts as context for an artifact / installation which visually represents some facts or stories

Interactive – elements which are meant to help visitors to get engaged with the exhibition content (explanations and objects), illustrative means of communicating; usually it is various elements which visitors can touch and engage with physically; for example, excavating an archeological site digitally with the help of the interface created for the digital touch table which imitates an excavation process or illustrating the physical laws through an interactive which a visitor can push/ pull/ drag or do any other action required to experience the demonstrated physical law

Design process – exhibition creation process from the reception of the project brief to the installation

Stakeholders – everyone who is involved into an exhibition creation, i.e. curators, researchers, designers, community, a range of clients, architects.

Threshold – start and finish of a visitor experience; mental associative boundaries related to the perception of the country, travel experience, culture, things on offer

Iconic experience – an "a-ha" or impressive moment in the exhibition, can also be an intended by the designers to be the most memorable part of the exhibition space

Black box - in exhibition design is a term referring to a museum space which has no source of natural light. It can either be a four-wall space with no natural source of light purposed for exhibitions and providing an empty "canvas" for exhibition designers to create any exhibition layout, without the constraints to work around the windows and light. It can also be referring to an approach which implies closing off the windows with a wall in an already existing museum space in order to allow fitting of an exhibition layout which otherwise would not be possible to realize due to the natural light and the space taken away by the windows. Black box approach allows designers to use all surfaces of the space and decide on any lighting options.

ABSTRACT

This research investigates the popularity of immersive exhibition environments in the exhibitions of the 21st century. Behind the popularity of immersive exhibitions there are contradictions between theoretical frameworks applicable to immersion and exhibition design practice which were not investigated before but promise to shed light on to the foundations of designing immersive exhibitions.

Laying on the intersection of exhibition design, scenography, environmental psychology, this research analyses what means immersion in exhibition design. The aims of this research project were to 1). understand what theories can be applied to enhance immersion through exhibition design, 2). examine how theories can be integrated into design practice, 3). identify what exhibition designers consider immersive exhibition environments in order to document opinions of those who lead the field.

The findings indicated that applicable to immersion theories are not consciously applied in practice by exhibition designers, however, the effects which designers aim for in their final designers in some ways reflect the concept of liminality.

INTRODUCTION

Research context and identification of the problem

As our lives become increasingly mediated by screens and technology, museums are rapidly turning to more immersive environments and experiences. The term "immersive" has become widespread in relation to museums and is used for describing a fully spatialized embodied engagement with various environments from virtual to theatrical, making its meaning pervasive. With the expansion of the experience economy[1], "immersive" has become a marketing buzzword that implies a variety of techniques: from digital experiences[2] to black box exhibitions and theatrical environments; yet, due to its complexity, attempts to define specific aspects of immersive design have led to standardization of methods applied in practice.

The term immersive is en vogue today, it is applied to describe various experiences from virtual to theatrical making the term omnipresent. Architects[3], environmental psychologists[4], neuroscientists[5], and media studies researchers[6] have tackled the notion of immersive environments to build a theoretical framework. Other researchers have contributed to measuring visitors' emotional responses to artworks[7] and museum

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[1] Pine, B. J., & Gilmore, J. H. (2011). The experience economy. Harvard Business Press. Radder, L., & Han, X. (2015). An examination of the museum experience based on Pine and Gilmore's experience economy realms. *Journal of Applied Business Research*, *31* (2), 455.

[2] Buchanan, R. (2001). Design research and the new learning. Design issues, 17 (4), 3-23; Chianese, A., & Piccialli, F. (2014, September). Designing a smart museum: When cultural heritage joins IoT. In *2014 eighth international conference on next generation mobile apps, services and technologies* (pp. 300-306). IEEE; Shaev, Y. (2014). From the sociology of things to the "Internet of things". *Procedia-Social and Behavioral Sciences*, *149*, 874-878.

[3] Mallgrave, H. F. (2010). *The architect's brain: Neuroscience, creativity, and architecture*. John Wiley & Sons.

[4] Bitgood, S., Ellingsen, E. and Patterson, D. (1990). *Toward an objective description of the visitor immersion experience*, in "Visitor Behavior", 5 (2), 11-14.

[5] Harvey, M. L., Loomis, R. J., Bell, P. A., & Marino, M. (1998). The influence of museum exhibit design on immersion and psychological flow. *Environment and Behavior*, *30*(5), 601-627; Hein, G. E. (2002). *Learning in the Museum*. Routledge.

[6] Griffiths, A. (2008). *Shivers down your spine: Cinema, museums, and the immersive view*. Columbia University Press; Grau, O. (2003). *Virtual Art: from illusion to immersion*. MIT press.

[7] Tröndle, M., Wintzerith, S., Wäspe, R., & Tschacher, W. (2012). A museum for the twenty-first century: The influence of 'sociality' on art reception in museum space. *Museum Management and Curatorship*, *27* (5), 461-486.

environments[8]. Nevertheless, many questions on how certain elements of immersive environments affect visitors still remain unanswered. And, at the same time, what immersion is in the context of the museum of the 21st century is not questioned either.

Confusion with the definition and high demand for immersive exhibitions has led to two problems one coming out of the other. It created the focus on the tools, namely projectors, screens, touch interactives, Virtual Reality (VR), Augmented Reality (AR), rather than the structure which can be referred to as the composition of narrative space of an exhibition. And consequently has led to the misconception of the very understanding of immersion. I argue in the following chapters that immersion is carefully crafted through the spatio-narrative composition of the exhibition where threshold plays an important role as a liminal transition space. Important to restate that immersion in this research is viewed and considered only from the standpoint of exhibition narrative building, architectural/interior design related to the exhibition, and way of displaying the artefacts.

Even though museums are progressively moving towards experimenting with ways of displaying collections in ways which are different from the "white cube" approach, which has eliminated every sense from the museum experience and has left the focus only on the visual, the examination of the multisensory environments is out of the scope of this research. Firstly, it raises discussion about visitor perceptions which on its own created multiple dissertation topics. Secondly, this research aims to keep the focus on the creators of the museum experience and exhibition design practices rather than visitor studies, however, the two, of course, intertwine very tightly.

I am going to make a brief example of a multi-sensory approach implemented at Tate Modern to illustrate which exactly as often associated with immersion is out of scope of this dissertation. This work is examining the structure of the visitor experience as it unfolds throughout the space rather than an interpretation of displayed artworks with multi-sensorial triggers and aids which accompany the artworks. Whilst these aids could potentially be considered part of exhibition design, they particularly use and highlight the use of senses while this research is looking at the most foundational structuring of exhibitions such as layout and positioning of the artfects ad well as how exhibition designers shape those parameters into immersion.

The example of experience which is not to be considered in this work is Tate Modern in London has experimented with jolting visitors to engage their hearing, smell and touch while looking at the artworks, this research left the multisensory experiences out of scope. The reason for doing so relates to the main goal of this thesis – investigate the very foundations and the very

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[8] Forrest, R. (2015), *Design Factors in the Museum Visitor Experience*. (Doctoral dissertation, University of Queensland, Brisbane, Australia). Retrieved from https://espace.library.uq.edu.au/view/UQ:348658/s4254715_phd_submission.pdf

beginning of the exhibition design process when designers start mapping out the exhibition structure into which they weave immersion rather than apply it onto the structure as additional tools and features such as smell or a VR interactive. The Tate Museum sensorial exhibitions, and what can be referred to as "immersive", exhibition consisted of four paintings which were accompanied by the audio, taste, touch and smell components. Wristbands were provided to the visitors to measure their physiological responses. Tate Modern grounds their experiment posing the question whether non-visual senses can change the way the art is perceived: "Galleries are overwhelmingly visual. But people are not – the brain understand the world by combining what it receives from all five senses. Can taste, touch, smell and sound change the way we "see" art?"[9]. While some museums experiment with the form of presentation and representation, the research on immersion in exhibition design practices is still scarce and lacks empirical foundations and a unifying framework.

Today the question of how to create immersion is relevant to all stakeholders in the exhibition design process, and especially to exhibition designers who are challenged to find new ways to create "fun", "engaging" and "immersive" experiences. The urge for integration of technology such as VR, AR, and other digital interactive experiences as well as triggers which interact with senses other than vision like in the Tate Modern example into exhibitions, without building them into the larger system of visitor experiences in exhibitions, has overshadowed some foundational aspects of immersion, Namely the aspects are: the concept of liminality[10] and frame[11] which have the potential to approach "immersion" as a strategy for exhibitions. By "strategy" I mean systemized approaches based on the recommendations developed from my research findings. The understanding of how designers create immersive experiences today and what theories can be applied in practice to the structure of visitor journey through exhibitions aims at targeting the gist of how immersion is constructed on the structural level rather than medium level. The findings aim to help contribute methods for designing immersive exhibitions rather than relying on the mediums such as digital aids.

Lack of research investigating the complexity of immersion has created misconceptions about its applications to the design of visitor experiences..

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[9] Tate Modern. Tate Sensorium (2015). About the Tate Sensorium project engaging five senses in an art exhibition. Retrieved from https://www.tate.org.uk/whats-on/tate-britain/display/ik-prize-2015-tate-sensorium

[10] Soja, E. W. (1996). Thirdspace journeys to Los Angeles and other real-and-imagined places.

[11] Goffman, E. (1974). Frame analysis: An essay on the organization of experience. Cambridge, MA, US: Harvard University Press.

Architects, environmental psychologists, and museologists[12] have examined the notion of immersive environments to build a theoretical framework specific to museum visitor studies. Yet there are underexamined and unapplied fundamental aspects of immersion such as the aforementioned concepts of liminality and frame which are worthy of investigation to provoke the notion as it is perceived today and unpack its complexity.

Today visitor experiences are created by exhibition designers usually in collaboration with curators and educators. However, designers are often appointed after the concepts have already been developed by the curatorial team which leads to the limitation of their role to visual communicators (i.e. designing the graphic panels and labels) rather than designing the whole space and orchestrating all the elements of exhibition design such as visitor flow, threshold and iconic experiences, conceptual and spatial intertwines of exhibition topics and their sub-topics. Dr. Toni Roberts is among the few researchers in the world who have built knowledge of the stakeholder roles and relationships in the design process[13] to identify how the outcomes of exhibition project depending based on whether designers were involved from the very beginning or whether they have come in at the later stages of the exhibition development process. As it is slowly becoming a more widely acknowledged issue, practitioners are trying to change the exhibition design process so that it does not follow the waterfall approach which follows steps from inception to installation chronologically meaning that ideas can be discussed over and over again without testing, consideration of involving designers as audience advocates or testing and prototyping. The necessity to apply agile methodology to exhibition projects has been raised by museum professionals arguing that the waterfall approach is not the most effective[14]. Agile methodology originally comes from the software development field, it has gained wide attention as the project management approach and is already being practiced by some museums already. One of the examples of the change in the design processes will be illustrated in the chapter *Interviews: Practitioners' Knowledge* drawing from the interview with Trevor Streader who has

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[12] Achiam, M. (2016). The role of the imagination in museum visits. Nordisk Museologi, (1), 89; Bitgood, S., Ellingsen, E., & Patterson, D. (1990). Toward an objective description of the visitor immersion experience. *Visitor Behavior*, 5 (2), 11-14; Griffiths, A. (2008). *Shivers down your spine: Cinema, museums, and the immersive view*. Columbia University Press.

[13] Roberts, T. (2015). Factors affecting the role of designers in interpretation projects. *Museum Management and Curatorship*, 30 (5), 379-393.

[14] Ellis, D., Jenkins, M., Lee, W., & Stein, R. (2008). Agile methods for project management. *Museums and the web 2008: proceedings, Toronto: archives and museum informatics. Published March*, 31, 2008; Kati Price. (2018, September 11). Designing a minimum viable experience. [Blog post]. Retrieved from

https://www.vam.ac.uk/blog/digital/designing-a-minimum-viable-experience.

advocated for the designers to be brought early on into the exhibition design process and brought attention to their role as audience advocates rather than visualizers and creators of the exhibition three-dimensional space.

Before delving into the topic, I find it worth explaining two exhibition design terms used by designers for more clarity - "iconic" and "threshold" experiences. In exhibition design, just like in music, literature, architecture, and dance, there is composition. It is possible to make an analogy of exhibition design process with composing music for orchestra and posit that the design team is the composer and the exhibition is the orchestra - the tools which designers use including graphic design, spatial and light design, sound design, visitor navigation, for example. With this instrumentarium an exhibition design team can create various types compositions. The simplest example of composition that is applied in a range of fields can be the following structure: setting/ opening – conflict – climax – resolution. Exhibitions can also follow this structure in a spatio-narrative way. *Threshold* experience in exhibition design is similar to setting/ opening stage, it is an important part of an exhibition which acts as a transition space setting the mood, the pace and gives a visitor the context for the presented subject. The "iconic" experience usually refers to the key object(s) of an exhibition most importance piece of information.

In relation to the concept of threshold and the theory of liminality which directly related to threshold used as a part of exhibition in practice, a point of activating visitor imagination arises. This research aims to bring just one visitor experience-related factor into this research – cognitive process related to imagining, however, it is important to note that studies on visitor learning or perception of objects will remain out of the scope of this research as detailed unpacking of phenomenology in exhibition design will lead away from the exhibition designer focus of this research and examination of practices. Visitor studies on immersive exhibitions are of importance to the understanding of the techniques implemented by the designers and are used in this research as references to understanding of the designers' intentions, however, thorough delve into the visitor perception of immersion is out of scope of this study and will be considered for further research in the *Conclusions* chapter.

Research questions

In order to examine the range of factors, concepts and thought behind the word "immersive", it is necessary to, first of all, take off the layer of "immersive = technology" to search for triggers of the feeling of immersion which can evoke in any situation outside of the museum. Secondly, it is essential to question the design process and make inquiries into the initial stages of the projects rather than analysing the finished exhibitions. The following research questions framed subsequent sub-questions for the empirical part of this doctoral research and helped to gain insight from practicing exhibition designers who lead projects from the very beginning to the final installation and work with a complete cycle of shaping of immersion in exhibitions.

1. What theories are relevant to designing immersive museum experiences?
2. How do museum immersive experiences align with and differentiate from entertainment and (other) cultural experiences especially in relation to "experience design"?
3. What do designers at exhibition companies and museums consider immersive exhibition environments and how do they design them?
4. Where does the immersive experience start and finish in a museum exhibition?

The questions were examined through empirical research – literature analysis, archival research, as well as investigated through interviews and data collection during the observational visits to the exhibitions presented in the *Case Studies* chapter.

Scope

The scope of this research lays within the construction of immersion through spatial design and interpretation of the content. The application of digital technologies and creation of holistic spatial environments with the digital technologies is out of the focus of this research because the goal was to understand and examine the foundations of immersive narrating, the techniques rather than the tools – approaches to structuring the narrative in the space.

Significance and impact

The research is significant on three levels: 1) it contributes new knowledge about the foundations and multi-dimensionality of immersion in museum practices to museology; 2) it bridges the gap between theory and practice by bringing in the research on visitor cognitive processes around imagination during the interaction with exhibitions; 3) it restates the importance of integrating exhibition designers in the early stages of the exhibition project.

Museums allocated resources to new exhibitions, maintenance of permanent exhibitions or rethinking of exhibition galleries and museum outreach strategies. However, exhibition design as a practice is poorly understood and immersion, in particular, has received little attention despite its vast marketability in the museum field and ever growing number of proposals and projects of digital aids in exhibitions.

Recently narrative, storytelling and scenography have been gaining popularity as concepts and tools which researchers and practitioners talk about at the conferences and work with in their professional practices[15]. While attention to the topic of narration in museum spaces indicates an inevitable shift and development from didactic interpretative approaches (using text as explanation) to experiential free learning exhibition environments, much of current research lacks empirical explanations on why narration, storytelling and scenography are an immersive approach and how it affects visitor interaction with the content.

The tendency in Russia, for example, to mix match all possible tools for interpretation - physical and digital explanatory panels, videos, physical interactives, physical or digital recreation of a specific environment – is assumed as relevant to modern audiences. However, there are cognitive processes behind the word "relevant" which are now not being considered in the creation of exhibitions, the reliance of positive impact tends to lean towards aesthetics and an established shift from didactic to experiential exhibition approaches.

This thesis highlights the importance of including research on design processes, especially, drawn from designers' perspective as current research lacks accredited peer-reviewed publications on the exhibition design process

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[15] Baker, S., Istvandity, L., & Nowak, R. (2016). Curating popular music heritage: storytelling and narrative engagement in popular music museums and exhibitions. *Museum Management and Curatorship*, *31*(4), 369-385; Nielsen, J. K. (2017). Museum communication and storytelling: articulating understandings within the museum structure. *Museum management and curatorship*, *32*(5), 440-455; Petersson, B. (2018). From storing to storytelling: Archaeological museums and digitisation.

from the stand point of designers. Moreover, research on cognitive processes which lead visitors to use their imagination and, therefore, actively engage with the exhibition content and environment, should be brought up to the attention of design practitioners.

This research aims to help exhibition designers, curators, and educators to evaluate their work or tenders among which they choose an exhibition design contractor as well as contribute to the bigger goal of developing the exhibition design field to being cross-disciplinary not only on the basis of the tools and approaches used in exhibitions but actually being based on scientific research.

LITERATURE REVIEW

The literature review is structured in to three main sections: *Immersive exhibitions*, *Space and Narrative in Exhibition Design*, and *Imagination*. The three sections are closely intertwined in practice, however, in literature overview it deems possible to divide them into research which reflects on immersion in exhibition design, research on importance of spatial narrating in museums and reflections on visitor perception of information in exhibitions.

The *Immersive Exhibitions* chapter approaches immersion from the point of interest of this particular research – how professionals talk about immersion and what exactly they imply into this concept. It gives a brief historical context of how immersion was approached by researchers previously, however, it does not go in-depth reflecting on architecture, embodied experiences or semiotics of space as exhibition design, unlike, architecture, is a more complex environment which already provides multiple factors for examination – space itself and visitor journey through the physical space, narration which unfolds in a three-dimensional space and how a visitor travels through that narrative. It points the issues which arise then designing immersion and gives a contextual understanding that immersion is a complex and yet not fully understood concept in exhibition design practice. As this thesis argues, the foundations of immersion lie in the very structure of the exhibition experience, and the structure is the conceptual visitor walkthrough which designers create. Immersion can be reached with any tool and those do not have to be digital. This thesis specifically puts the digital applications out of the scope as research on VR, AR, multisensory environments has been over-flooding exhibition field creating an appearance that in order to create immersion, some kind of digital technology has to be utilized, whether tangible or intangible and veiled.

The chapter *Space and Narrative in Exhibition Design* examines how two foundational factors of exhibition design – space and narrative – intertwine. Narrative is a strong element of exhibitions which can either be taking a shape of one single message or multiple topics with subtopics sometimes shown with the aid of installations, sometimes explained in text panels or exhibition graphics, sometimes with interactives or with all of those mediums at the same time. Unfolding the narrative throughout the dedicated to the exhibition space with all of its parameters which can be limiting or beneficial, it is an intricate and subtle work executed by a team of curators, designers and engineers. This chapter also covers some confusion related to exhibition design terminology and popularity of scenography as an approach to designing exhibitions in Germany and highly promoted by the exhibition design company called Atelier Brückner. This is the only substantial resource, even though partially self-referential, describing in detail and in a structured way working with space, time and narrative – the three pillars of exhibition design. It is usually difficult to judge whether time was considered as an element in the exhibition design process, and it is not mentioned as a factor except for in the book by Atelier

Brückner and by the interviewed for the purpose of this research exhibition designer Juri Nishi who approaches thinking about her designs as musical and choreographic compositions[16].

This chapter brings up with concept of liminality and threshold as one of the direct applications of the concept in practice and describes how threshold is used in exhibition design as an entry point to an exhibition world. Not all exhibitions have thresholds, also there might be multiple thresholds if the design team considers it interesting or necessary to implement those, however, often threshold areas in practice are rather the entry zones which provide the introductory information in text panels rather than set visitors up for a new experience and help them change the space or mood with the help of spatial design (layout, lights, colors, shapes).

The final part of the literature review is concerned with how imagination is sparked in visitors. Imagination appeared to be a difficult cognitive process to find relevant research on which did investigate particularly imagination which is evoked as a response to different mediums or different types of writing. The work of museum educators Dufresne-Tassè and Achiam unpacked which mental operations create the set of reactions to a given situation in which people start activating imagination. This section concludes by commenting on the application of imagination as proposed by Dufresne-Tassè and Achiam to exhibition design practices.

IMMERSIVE EXHIBITIONS

With the peak of the experience economy, immersive exhibitions appear as desired by both museums and the public which tends to build creative pressure for museum professionals and exhibition designers to find new ways that make exhibitions immersive, compelling, exciting and memorable for the public[17]. Immersion in museums has started to gain noticeable popularity, perhaps, in 2011 even though various immersive environments have been created much earlier than that and have been evolving since. Certainly in architecture immersion is traced centuries back and one of the most referenced immersive environments is church buildings in which the designed experience – scale, structure, use of symbols in a structure and decoration, eventually also addition of the sound – all contribute to a particular experience of immersion.[18]

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[16] Chapter *Practitioners on Immersion*, pp. 108-125.

[17] Pine, B. J., & Gilmore, J. H. (2013). The experience economy: past, present and future. *Handbook on the experience economy*, 21-44.

[18] Griffiths, A. (2008). *Shivers down your spine: Cinema, museums, and the immersive view*. Columbia University Press, p.19.

In museums, immersion is usually thought of as multisensory or digital experiences which, from the standpoint of exhibition design is an extremely limited point of view. This brings up the main argument of this thesis – immersion of exhibitions lays in the narrative and spatial structuring first and foremost and is not necessarily created with VR, AR, surrounding projections which are believed to surround a visitor with a certain created environment and, therefore, immerse them.

Some examples of immersive exhibitions, as they are considered immersive for the wide public, can be the *Tate Sensorium*[19] exhibition in 2015 where the artworks were accompanied with the touch, smell and sound. The *Van Gogh Alive*[20] exhibition in which Van Gogh's paintings were projected on the large-scale surfaces all over the exhibition gallery, some were made in motion, the exhibition was accompanied by sound and there was one central piece which was an animation with the narration of Van Gogh's live. Exhibition projects by Ralph Appelbaum Associates, an American exhibition design company, such as The Newseum[21] in Washington D.C. or the Hall of Biodiversity[22] at the American Museum of Natural History in New York can be seen as immersive as they use scenography as an approach which acts as the main interpretative guide for the visitors. These examples of immersive exhibitions have the main elements which are considered immersive: engagement of all the senses; large-scale projections which have the panoramic effect which will be discussed in more detail in the chapter *Imagination*[23]; scenography as an exhibition design approach which helps to unfold the narrative spatially and, therefore, engages visitors through a range of various mediums and references. These exhibitions will be discussed more in detail in the following chapters.

While theoretical research offers a wide and complex range of definitions of immersive, exhibition design practice mostly focuses on using technology as an immersive tool. Limitations of the medium and a set of prescribed methods may result in standardized exhibition environments. Stepping out of the dangerous path of limiting concepts to definitions and analyzing the end-result, e.g. installed exhibitions, I suggest looking in-depth at the modes of exhibition design creation. Exhibition design as a process has

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[19] Tate Modern. Tate Sensorium (2015). About the Tate Sensorium project engaging five senses in an art exhibition. Retrieved from https://www.tate.org.uk/whats-on/tate-britain/display/ik-prize-2015-tate-sensorium

[20] Van Gogh Alive [http://grandeexhibitions.com/van-gogh-alive-the-experience/]. Grande Exhibitions company has developed an approach which fits any exhibition gallery space.

[21] [http://www.raany.com/commission/newseum]

[22] [http://www.raany.com/commission/hall-biodiversity/]

[23] Chapter *Imagination: Dufresne-Tassè's analytical framework adapted for museums*, p. 68-77.

been studied from rather technological and managerial perspectives[24] while I suggest to analyze the aspects and find methods which will enhance the stakeholders' performance and help to let them think more freely across the disciplines and their comfort zone through elements of play.

I will argue that immersion may not need to be constrained by the limits of its definition and a set of techniques which create compelling visitor experiences, but rather be considered as a structured network of spatial and conceptual parameters created by multiple stakeholders of the exhibition design process. I am suggesting "immersive" as a complex invisible construction of visitor navigation through built environment of exhibition spaces; as a narrative technique which uses a variety of spatial parameters to take one on a cognitive and sensorial journey. The immersion was largely conveyed through interactive elements, large screens borrowed from cinema, or so-called *black box* exhibition design approach, forming a checklist of components which were believed to have immersive qualities. However, constructing immersion in museum spaces is complex and applying cinematic or theatrical approaches is not enough due to the difference in nature of spectatorship which includes walking around the space and viewing objects as visitors walk through usually at a closer distance.

Immersive, as applied to exhibitions, is a relatively new research topic in the field of exhibition design as during the literature analysis for this research, a limited number of studies, particularly discussing designing immersion in exhibitions from the standpoint of design practitioners, was found. Studies usually address visitor evaluation of the experience or a retrospective analysis of built environments in terms of immersion they create. Exhibition design is a discipline and a process of developing an exhibition from the concept to the built physical three-dimensional exhibition. Often exhibition project briefs are developed by the museums and are presented to the in-house designers or an outsourced design company. Exhibition design process begins with the development of the concept, exhibition mission, statement and goals which identify the thematic direction. Once those are identified, designers start mapping out the main conceptual ideas on the architectural plan of the exhibition galleries to understand how the exhibition narrative unfolds over the space. Then the content specialists develop the content and designers add it to the concept map. When content specialists and designers have developed an elaborated map for an exhibition narrative and an object list, designers start creating three-dimensional interpretative solutions to make the information available and interesting to the wide range of audiences. Exhibition design is a

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[24] McDonnell, J. (2012). *Accommodating disagreement: a study of effective design collaboration.* Design Studies, 33 (1). pp. 44-63; McKenna-Cress, P., & Kamien, J. (2013). *Creating exhibitions: Collaboration in the planning, development, and design of innovative experiences.* John Wiley & Sons.

collaborative process in which designers work closely with content, education and marketing specialists, graphic designers, fabricators, technical and multimedia specialists. The project stages include concept development and schematic design, design development, technical documentation, fabrication and installation. Exhibition design is an evolving field which integrates new ways of communication and new technologies bringing new experts and collaborations to the design process.

Immersion as an aspect of exhibition design has been gaining more attention since the development of new technologies and its applications in exhibitions such as virtual and augmented realities, new uses of audio-visual projections. Earlier, however, it sparked in the areas of scenography and environmental psychology where visitors and objects were considered as agents of performative exhibition spaces and the topic has picked up again with new technological applications in exhibitions[25]. This research focuses on the understanding of how the structure of the exhibition, its conceptual and spatial narratives contribute to immersion, therefore, it is important to highlight that examining how visitors perceive specifically technology that was entering museums in the 1990s is out of scope of this research.

So-called "immersive" exhibitions are emerging, but their theoretical framework, consisting of many intersecting fields, is complex and not yet fully studied. Interest in immersion comes from researchers in the areas of theater and opera production, game design, philosophy, psychology, museum design and museology, architecture and scenography. While research on immersion is conducted in unlinked but overlapping areas, there is yet a lack of common understanding of immersion in exhibition design in the 21st century and investigations into the creation process of immersive spaces. Further investigations into what kind of studies shape the understanding of immersion today will be essential to understanding of the prevalent ideas and values in exhibition design.

The research of Bitgood[26], Dufresne-Tassè[27] and Achiam[28] on immersion has become most influential for the development of this study and the

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[25] Casey, V. (2005). Staging meaning: Performance in the modern museum. *TDR/The Drama Review*, *49* (3), 78-95; Christidou, D., & Diamantopoulou, S. (2016). Seeing and being seen: The multimodality of museum spectatorship. *Museum and Society*, *14* (1), 12-32; Den Oudsten, F. (2011). *Space. Time. Narrative*. Ashgate Publishing, Ltd.

[26] Bitgood, S. (1990). *The role of simulated immersion in exhibition*. Center for Social Design.

[27] Dufresne-Tassé, Colette et al. 2006. "L'imagination comme force dynamisante du traitement des objets muséaux par des visiteurs occasionnels." In Colette Dufresne-Tassé (ed.). Families, Schoolchildren and Seniors at the Museum. Research and Trends. Québec: Éditions MultiMondes, 160–176.

examinations into the effects of designed environments by Forrest[29] and Purcell[30] have been key factors which helped to direct the course of research to the knowledge gap. American psychologist Stephen Bitgood[31] studied immersion from the standpoint of visitor experience and perception of environments providing data from empirical research to the understanding of the effects of designed environments. Similarly, Australian researcher Regan Forrest investigated the effects of design factors in exhibitions on visitors, however, she immersion was not her focus. Canadian museum educator Colette Dufresne-Tassè investigated cognitive processes which respond to building scenarios when perceiving new information and a Danish science educator Marianne Foss Achiam (also published under the last name Mortensen)[32] has built on her research proposing how museums can work with offering visitors scenarios and this way jolt them to use their imagination. Their contribution to the field will be discussed in the following chapters of this thesis in detail.

Problematics of the definition and historical context

It appears challenging to define, shape, describe immersion and ways it is constructed in exhibitions. Immersive is an imperceptible network of spatial and conceptual parameters of a whole designed space which creates compelling visitor experiences. Researchers and practitioners have struggled to underpin often not traceable techniques which contribute to the effect of immersion. These attempts to define and classify immersive exhibitions, to find the aspects and methods of creating immersion in exhibitions have been rather simplified. This simplification has created misleading guidelines for practitioners and spawned the creation of insipid immersive exhibitions[33]. The guidelines here is meant as museum professionals' understanding, drawn from impressions of current trend of immersion and, therefore, misconceptions, as the trend indicates that immersion is creation of multimedia exhibitions.

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[28] Achiam, M. F. (2016). The role of the imagination in museum visits. *Nordisk Museologi*, (1); previously published under the last name Mortensen.

[29] Forrest, R. (2015), *Design Factors in the Museum Visitor Experience*. (Doctoral dissertation, University of Queensland, Brisbane, Australia).

[30] Purcell, K. J. (2015). Transmedia storytelling: relocating the Broadway musical across the digital domain as scalable enterprise.

[31] Bitgood, S., Ellingsen, E. and Patterson, D., (1990). Toward an objective description of the visitor immersion experience. Visitor Behavior, 5 (2), 11-14; Bitgood, S. (1990). *The role of simulated immersion in exhibition*. Center for Social Design.

[32] Achiam, M. (2016). The role of the imagination in museum visits. Nordisk Museologi, (1), 89; Mortensen, M. F. (2010). Designing immersion exhibits as border-crossing environments. *Museum Management and Curatorship*, 25 (3), 323-336.

[33] Gander, P. (1999). *Two myths about immersion in new storytelling media*. Lund University.

Considering immersive as a combination of spatial and conceptual parameters created by multiple stakeholders of exhibition design process, rather than a set of techniques such as interactive displays, large projection screens, elements of physical participation, promises to open up a number of components which will contribute to immersion.

While terminology only seems to be a shell for a concept, it is nevertheless important to consider since exhibition designers imply various aspects and techniques when they verbally communicate the concepts or designs of immersive while curators and educators may imply other understandings of immersive. For example, in practice, immersive exhibitions often contain large screens which can also be 180-degree or 360-degree screens, elements of recreated built environments or virtually, and can be participatory or interactive. The aforementioned elements can often lead to locking into using specific tools to present the content rather than searching for the most appropriate tools to communicate information.

What is immersive as described by researchers and which fields of knowledge does it evoke from? "Immersive" as applied to exhibitions comes from the point when visitors' perception in exhibition viewing started to be considered[34]. Then the idea of immersion in exhibitions started to expand with the establishment of visitor studies tied to the field of psychology of learning. Immersive is also a product of constructed culture of viewing and development of theories of human perception of information which were discussed by Arnheim[35], Dorner[36], and Gombrich[37] in relation to the perception of art.

Ideas of these authors build a reference to the historical context for modern exhibition design, however, the depth of their work on the psychology and philosophy of perception stands beyond the investigations of this research. Arnheim's work on visual perception, which was created in the prime of

[34] Dorner, A. (1958). *The Way Beyond Art*. (Revised Edition.) [With Reproductions.]. New York University Press; Ganz Blythe, S., Martinez, A., Smith, J. W., Dorner, A., Harkett, D., Neumann, D., & Uchill, R. (2018). *Why Art Museums? The Unfinished Work of Alexander Dorner. Critique d'art, Livres collectifs*; Polyakov, T.P., 1989. *Character-scenographical method in the system of relationships of traditional methods of exposition creation.* Museology. Problems of cultural communication in museum field. 40; Translated from Russian: Поляков, Т.П. (1989). *Образно-сюжетный метод в системе взаимосвязей традиционных методов построения экспозиции.* Музееведение. Проблемы культурной коммуникации в музейной деятельности, p. 40; Rozenbloom, E.A., 1974. Artist in design. Translated from Russian: Розенблюм, Е.А., 1974. Художник в дизайне.

[35] Arnheim, R. (1965). *Art and visual perception: A psychology of the creative eye*. University of California Press.

[36] Crary, J. (1992). *Techniques of the observer: On vision and modernity in the nineteenth century*. MIT press.

[37] Gombrich, E. H. (1980). *The sense of order*.

Gestalt aesthetics[38] in the 1920s, found resonance in exhibition design where *gestalt* is a term referring to the unifying idea and look of the exhibition, it can also be referred to as *look and feel* in professional terminology. In gestalt it is the interrelations between the parts which make up the completeness and wholeness, in exhibition design, it is the interrelationships of the designed exhibition layout – structure for the visitor flow through the space, with the decorations in this layout – spatial design, and narrative – the correlation of the story with the spatial design.

Also from the 1920s museums started shifting from storing collections to exhibiting them, Dorner has been working on changing the museum from the "treasure vault" to an "educational institution" creating contexts in which the art can be displayed and context which would help audiences interpret the art. He modernized the galleries of the Landesmuseum[39] in Hannover (Germany) after he became the director. He created the design of the rooms in such a way which demonstrated that abstract art was a part of everyday life supporting it by the objects from everyday life dictated by fashion and design.

> "People no longer desire an accumulation of works of art, divided from us by time and space, clinging to us on all sides as ivy does on romantic buildings, but instead they want to know what direct active bearing these things have on our times."[40]

Dorner's vision is relevant to the current ideas applied in museums as museum professionals today are applying various techniques of conceptual and spatial narration to help visitors understand the stories and contexts of the displayed pieces of collection. Dorner stated that the modern approach is in showing the change of the artistic style:

> "It is a new way of looking upon history and art history. It is modern in its best sense, as it does not seek to grasp the so-called eternal elements in each artistic period, but the changing ones. It replaces the absolute with the relative, that which is immovably static with the freely functioning dynamic idea."[41]

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[38] Grundmann, U., translated by Williams, G. (Spring 2001). The intelligence of vision: an interview with Rudolf Arnheim. *Cabinet, Mapping Conversations. (2)*. Retrieved from http://www.cabinetmagazine.org/issues/2/rudolfarnheim.php; Mallgrave, H. F. (2010). *The architect's brain: Neuroscience, creativity, and architecture*. John Wiley & Sons.

[39] Landesmuseum Hannover [https://www.landesmuseum-hannover.de/en/]

[40] Germundson, C. (2005). Alexander Dorner's Atmosphere Room: The Museum as Experience. Visual Resources, 21(3), 265, p. 5 of the transcript for *"My Experiences in the Hanover Museum: What can Art Museums do Today?"*, delivered at Harvard University on 27 January 1938. Access to Germundson was provided by Andrew Martinez at the Archives of the Rhode Island School of Design.

[41] Ibid, p. 265.

It is traceable how Dorner in the end of 1930s was concerned about evoking an emotional and intellectual response of visitors – aspects which modern museums are widely concerned about. Dorner also used suggested to cover the windows to eliminate the visual distractions visitors might have and required to create a special type of lettering – both aspects which are established in today's exhibition design practice as graphic design and a black box approach. Dorner's ideas so focused on the consideration of visitor experiences and perception of what they see can be seen as one of the steps towards the ideas of immersion exactly from the standpoint of exhibition design. Context in which collections are exhibited became more important as contexts became interpretation tools, and Gombrich's idea of how people perceive information, which is conditioned by the cultural contexts of people, becomes relevant to the study conducted by Achiam on creating interpretation which engages the cognitive processes which use imagination, this will be discussed in the chapter *Imagination*[42].

Theoretical research offers a wide range of characteristics which define immersion, from theatrical to participatory. One of the first researchers who has been among exhibition practitioners to understand immersion in exhibition design is a psychologist Stephen Bitgood. In one of his early works in the 1990s he has published an article with his colleagues in the journal *Visitor Behavior* on evaluating immersion objectively[43], given that it is an individually perceived experience, with a goal to understand what designers should consider when they create immersion. The goal of their research is similar the aims of this research, therefore, the contributions of Bitgood have become one of the foundation blocks of this research project. Moreover, the predominantly used and cited definition of immersion was suggested by Bitgood and it posits that immersive environments transport visitors to a different time and space: "We assumed that if visitors feel immersed in an exhibit they will report a feeling of being in the time and place simulated by the exhibit. In the current study, our measure of immersion was the degree to which the exhibit created a "feeling of being in the time and place" as rated by visitors."[44].

While Bitgood and his team were looking to ground visitor experiences of immersion in scientific analysis, some researchers suggested participation as a main characteristic of immersive which, however, Gander[45] claimed to be a false feature of immersion in *"Two Myths about Immersion"* and pointed out that

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[42] Chapter *Imagination*, p. 66-77.

[43] Bitgood, S., Ellingsen, E., & Patterson, D. (1990). Toward an objective description of the visitor immersion experience. *Visitor Behavior*, *5* (2), 11-14, p.11.

[44] Ibid.

[45] Gander, P. (2005). *Participating in a story: Exploring audience cognition* (Vol. 119). Lund University.

sensory and participatory experiences are not proven theoretically or empirically. It is interesting to be now reflecting on the problem which Gander questioned in 1999 that any kind of sensory or participatory experience in exhibitions were not proven, therefore, could not be considered as positively affecting immersion. Almost 20 years later after Gander's statement it is arguable whether sensory and participatory experiences are creating the sense of immersion. The studies measuring immersion of visitors with qualitative surveys and technology which records and reports on the physiological state of the visitor as they are experiencing the exhibition have only contributed to the foundations of immersion, studies visitor responses to particular works of art or experiences of the spatial factors of the exhibitions. These studies are discussed in the sub-chapter *Measuring Immersion*[46].

Yet after Gander's paper[47] in 1999, the body of research on immersive environments keeps suggesting that aspects such as environmental feedback through interactivity as well as use of object realism or authenticity, social involvement, artistic portrayal do contribute to immersion. Lankford[48] and Csikszentmihaly[49] include "flow" - the theory of optimal experience from psychology. It comprises of the sense of wonder, individual interpretation, factual information, intense concentration, complex mental activity, goal-directedness, the presence of challenge, and interplay of knowledge, memory, emotion, sensation, and perception. The theory of flow has been rather reflected on within the museum field in relation to learning rather than exhibition design which is of interest to this research. The importance of individual interpretation[50] in museum experiences more so comes from the constructivist theories of learning which suggest that people interpret or build understanding based on their own experiences. In his 2002 "Aesthetic experience in constructivist museum" article, Lankford brings attention to the fact that museums are still searching for relevant communication about objects to their visitors, however, it is a challenging task. Relevant communication to a variety of different audiences appears an especially difficult task considering the constructivist theories of learning which suggest that people interpret or build understanding based on their own experiences. He states: "Today, leaning is generally understood as a complex, nonlinear, active process in

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[46] Subchapter *Measuring Immersion*, pp.28-31.

[47] Ibid.

[48] Lankford, E. L. (2002). Aesthetic experience in constructivist you have to define what constructivism means in your research field museums. *Journal of Aesthetic Education*, *36* (2), 140-153.

[49] Hooker, C., & Csikszentmihalyi, M. (2003). Flow, creativity, and shared leadership. *Shared leadership: Reframing the hows and whys of leadership*, 217-234.

[50] Grant, M. C. (2004). Enhancing motivation using the constructs of flow in museum education activities.

which individuals draw upon previous experience and apply these to their interpretation and understanding of presented circumstances."

Some other researchers describe immersive spaces as those which are engaging visitors on multiple levels, creating fun and unexpected experiences[51] or as imaginative spaces which stimulate a desire to explore and discover[52]. In addition, others propose that immersion should incorporate dramatic features[53]. In a way, Bitgood has described the end result, which can be reached with the tools such as dramaturgy, stimulation of curiosity and sensory design - the aspects described by Weaver, Mortensen[54], and Macfayden. Yet this is not the whole range of characteristics and research on this topic is shaping.

In 2011 Maggie Burnette Stronger has contributed to the knowledge on immersive exhibitions by categorizing immersion in museums. Categorization of types of immersive exhibitions was not the goal of this research, but the study of Stronger has become a part of understanding the state of immersion by 2017. Stronger has identified 5 categories of immersion in museums[55]:

1. Experiential immersion
2. Narrative immersion
3. Theatrical immersion
4. Interactive immersion
5. Virtual immersion

Summarizing the types, *experiential immersion* is related to sensory perception in the exhibitions. It is an important aspect how built environments affect visitors, but not all of them, therefore, it is needed to examine which characteristics could be in common or particular to each of the built environments which positively affect immersion. *Narrative immersion* refers to exhibitions which use multiple media to communicate the content. For example, 3-dimensional reconstructions of an object or a town on a scaled model, touch table and videos which provide some context to the objects, objects themselves, light design which often creates dramatic effects. This research though argues that multimedia in exhibitions is rather a communicative tool rather a constant which creates immersion, because any media tool in an exhibition has to be

[51] Weaver, S. (2012). *Creating great visitor experiences: a guide for museums, parks, zoos, gardens & libraries*. Left Coast Press.

[52] Mortensen, M. F. (2010). Designing immersion exhibits as border-crossing environments. *Museum Management and Curatorship*, 25 (3), 323-336.

[53] Macfadyen, A. (March 2009). *A Methodology for the Analysis of Interactive Narrative Environments: A Four-Factor Framework* (Doctoral dissertation, University of Ballarat).

[54] Mortensen publishes under the name last name Achiam in her latest publications.

[55] Stogner, M. B. (2011). The Immersive Cultural Museum Experience--Creating Context and Story with New Media Technology. *International Journal of the Inclusive Museum*, *3*(3).

suitable for the information it interprets and, moreover, has to coherently fit in with other medias in the exhibition. Therefore, it is not certain that multimedia will necessarily create immersion. In fact, it will not if there is no composition and other elements which will be discussed in the proceeding chapters. *Theater immersion* Stronger correlates with a 3-D or 4-D experience, *interactive immersion* - as active visitor engagement with the small scenarios which museum designers have created for the audiences. And *virtual immersion* is related to using the virtual reality glasses. All of the Stronger's categorizations are based on the tools with which museum designers operate to convey complex topics. However, there appears no structure or argumentation why those tools are put by the researcher into the immersive category. What do visitors need to experience in order to be immersed? One multimedia exhibition is different from another, how can we posit that all multimedia exhibitions are immersive?

This question will be discussed in the following thesis chapters through the investigation of the foundational factors which constitute immersion in exhibition design as a practice. However, giving a brief comment on this matter at the very beginning of this investigation of immersion, the answer is both "yes" and "no". On the one hand, if a multimedia exhibition has the features of panorama, i.e. the large-scale projections which are meant to create an atmosphere for the exhibition narrative or if they are the main narrating line, it could be an immersive exhibition because it relies on the immersive structure. On the other hand, a multimedia exhibition can be a complete opposite of an immersive exhibition when the multimedia elements are used for the sake of using technology and are not used to support the gestalt of the exhibition narrative.

The boom of immersion which has affected all – designers, visitors, a range of museum professionals – has really started be noticeable widely in 2012-2013 when the values of the experience economy and demand for those has reached museums and when museum started to actively respond to it[56]. However, the inception of immersion can be traced back to the Lascaux caves, Gothic cathedrals and panoramas[57]. While immersion in panoramas[58], cathedrals and cinema has been considered by scholars, this research aims to build on and add to that knowledge and investigate immersion particularly in exhibitions of the 21st century.

Griffiths (2008), whose definition of immersive is very close to the one proposed in this research, wrote about immersion from the lens of spectatorship and screen studies. Her research has become important for identifying the direction of this doctoral research - away from analyzing

[56] Pine, B. J., & Gilmore, J. (1999). The Experience Economy (Boston: Harvard Business School Press).

[57] Griffiths, A. (2008). *Shivers down your spine: Cinema, museums, and the immersive view*. Columbia University Press.

[58] Grau, O. (2003). *Virtual Art: from illusion to immersion*. MIT press.

screens and projections to the foundational structure of narrative. In her book *"Shivers Down Your Spine: Cinema, Museums, and the Immersive View"*[59] described immersion similar to Bitgood's definition, only adding a physical allowance to the mental perception:

> "I use immersion in this book to explain the sensation of entering a space that immediately identifies itself as somehow separate from the world and that eschews conventional modes of spectatorship in favor of a more bodily participation in the experience, including allowing the spectator to move freely around the viewing space (although this is not a requirement)."[60]

This definition goes along the one suggested by Bitgood in 1990 who prescribed immersion the ability to transport visitors to a different time and space to which an exhibition refers: "Immersion exhibits mediate their message by creating the illusion of a time and place, and by integrating the visitor in this illusion."[61] Using Griffiths's and Bitgood's definition of immersion in this research, I find it important to view "time and space" not as only a certain time period and location where visitors imagine themselves to be but rather abstract spaces and times in their mind and imagination.

Furthermore, Griffiths argues that the term "immersive" is unclear and omnipresent in its use today; it refers to a great variety of methods and examples and suggests that a new definition is needed. While recognizing the omnipresence of immersion and the need to understand it in more detail I, however, propose to explore the construction of immersive designs rather than suggest a new definition which may again simplify immersive techniques in exhibition design and not be enough in flux to accommodate all experimentations and changes which are happening to it. Griffiths posits that the inception of an immersive environment is in architecture, which is an important contextual point for the conversation about immersive exhibitions in order to highlight that immersive techniques are not limited to the use of technology. Referring to the research of Otto von Simson[62], she brings up a Gothic church as an example of an immersive environment. In 1952 Von Simson[63] proposed that the architecture is not the visual, but the analogy of

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[59] Griffiths, A. (2008). *Shivers down your spine: Cinema, museums, and the immersive view*. Columbia University Press.

[60] Ibid, p. 3.

[61] Bitgood, S., Ellingsen, E., & Patterson, D. (1990). Toward an objective description of the visitor immersion experience. *Visitor Behavior*, 5 *(2)*, 11-14, p. 11.

[62] Ibid, p. 20.

[63] Von Simson, O.G. (1952). The Gothic cathedral: design and meaning. Journal of the Society of Architectural Historians, 11 (3), pp.6-16.

God, the symbolism – everything together – the light coming through, the walls with the stories showcased in the icons. Similarly, symbolism is present in exhibition design and is covered in symbols – colors, shapes, tone of voice in texts, way of laying out the information for the visitors, structure of the information – in order to transmit an idea or a mood of the narrative, the space design is symbolic and the objects are usually transmitting the intangible content.

The design of how the cosmos was shown in the cathedral is the experience which invites visitors to immerse. Von Simon makes the analogy of the cathedral with a computer explaining that the whole world was in access to people who knew the codes. He also writes that the pointed-arch of the ceiling worked as a frame: "a locus, a place for viewing functioned something like a frame in modern paining"[64], and the shiny objects with the light falling onto them helped to create the presence of God. And the culture of viewing and perception of the people in different cultural and historical times should be taken into the consideration as a context which affects the way people view the world[65]. In the medieval times everything was looked at as if it has the hidden meaning: "The medieval mind was preoccupied with the symbolic nature of the world of appearances".[66] In those environments with the interpretation of the symbols, the spectators felt co-present. Griffins notices that both the church and the cinema have the culminating moments which make them both immersive, however, not all of the movies have a culmination in the story while the experience is still immersive. The culminations in the church experience and in cinema are different as they unfold differently over time. The culmination in the whole cinema can be considered as reaching of a full immersion in into the film while culmination in the experience of the church could be standing near the altar or being present for the mess when also the sound contributes to the whole experience of the architecture and its symbolism. The trick in identifying the culmination in museums is in that the culmination can happen anywhere in the museum space – in the café which appears as a comfortable space, in the entry hallway due to its captivating scale, in front of an artefact which resonated with a visitor. However, narrowing down to the exhibition design which can be considered as a more structure visitor experience, the culmination can refer to the iconic experience which will be discussed in the chapter *Space and Narrative in Exhibition Design*[67].

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[64] Ibid, p. 10.

[65] Crary, J. (1992). *Techniques of the observer: On vision and modernity in the nineteenth century*. MIT press; Noordegraaf, J., 2004. Strategies of display: museum presentation in the nineteenth-and twentieth-century visual culture. Museum Boijmans Van Beuningen, Rotterdam.

[66] Griffiths, A. (2008). *Shivers down your spine: Cinema, museums, and the immersive view*. Columbia University Press, p.20.

[67] Chapter *Space and Narrative in Exhibition Design*, pp. 32-65.

Speaking of another historical example of an immersive environment – panoramas. Overall, panoramas were a quasi-cultural institution, it was also educational and it was an alternative to theater at that time. They were not meant to be preserved and, therefore, had no lasting "truths" about history or geography they illustrated. Griffiths posits that panoramas evoke a highly sense of embodiment. Panoramas were popular in mass culture as a visual entertainment and created the feeling of spectator's physical relocation into the center of depicted space unlike the framed paining. Previously discussed definition of immersion by Bitgood points out exactly the aspect of transportation to a different time and space. Panoramas were large scale paintings which allowed the audience to immerse into the artificial reality evoking the sense of wonder. As discussed earlier, Csikszentmihalyi and Hooker suggest that the sense of wonder[68] contributes to immersion being a factor in the ultimate theory of "flow". Also the appearance of panoramas creates a new term "panoramic" which starts to be used in literature. Early panoramas represented a singular temporary situation which Griffiths refers to as "naturalistic" panoramas. Later came the "composite" (usually action/ battles) panoramas usually depicting the battles, they combined several incidents of an event. The orientation maps accompanied the "composite" panoramas to help identify what the spectator was looking at which appears as an interpretational context which is always used in museums. Panoramas quickly developed into large-scale moving panoramas which in the conceptual idea remind of a photographic camera film – it was a long canvas scrolled between two cylinders and represented a linearly sequenced narrative which was unrolled for the audiences. This added the time factor which changed spectatorship – people could not in that case have an overview of events and choose their own pace and order in which they were looking at the panorama. They were presented with a linear progression of events that was timed to the speed of the people rolling the long canvas to scroll through the whole story. The moving panorama was popular in the US after 1846[69]. Griffiths describes the experience of the panoramas as the "reenactment mnemonic function – the ability to stimulate the memory sensors and transport spectators metaphorically (and phantasmatically) back to the depicted scene."[70] The idea of being elsewhere is a perceptual game that a spectator is invited to play, the spectator divides into two "theres"[71].

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[68] Hooker, C., & Csikszentmihalyi, M. (2003). Flow, creativity, and shared leadership. *Shared leadership: Reframing the hows and whys of leadership*, 217-234.

[69] John Banvard "The Mississippi River" panorama, Griffiths, A. (2008). *Shivers down your spine: Cinema, museums, and the immersive view*. Columbia University Press, p.47.

[70] Griffiths, A. (2008). *Shivers down your spine: Cinema, museums, and the immersive view*. Columbia University Press, p.73.

[71] Ibid.

The creators of panoramas were afraid that the empty space in the panorama will bore people and, therefore, inserted the characters of the events in a close-up view. This is an interesting note if it is to be compared with why some exhibitions today have excess of multimedia components which might not fit well together in aesthetics and communication the information. Often this contemporary problem of overcrowding the space with digital tools of interpretation comes from two reasons. The first one is the idea that "multimedia = immersive" – the headline which has reached many museum professionals without any details explaining this equation. The second one is the consequence of the first one and it is museum professionals' belief that digital tools means "modern", it will "attract visitors" and it is "immersive".

While tracing the history of modes of spectatorship designed for entertainment is crucial to the understanding of immersive, considering what immersion means in a museum setting is helpful to pinpoint to examine the specifics of immersion in exhibitions. Mark Wigley[72], the Dean of Columbia University's Graduate School of Architecture, who in his talk has applied the concept of a framework to immersion and argued that it is the institutional framework that makes immersion possible in museums has directed this research towards theoretical body of knowledge of framework and lead to the discovery of liminality and threshold as important factors of immersion which will be discussed in the next chapters.

Wigley brought up the concept of a frame to think about immersive exhibitions at the symposium *"Between the Discursive and the Immersive"* at the Louisiana Museum of Modern Art in Humlebaek. He raised an essential question[73] about distinguishing what immersive is: "Under what condition is an exhibition understood as immersive or discursive?". He pointed out that a museum creates a certain institutional framework and an immersive exhibition at the museum breaks out of the institutional framework, however, without an institutional framework, the exhibition would not be perceived as immersive: "Immersion is experienced as a loss of limits, no lines, but to be experienced as such. I feel like I no longer have any sense of where I am, actually, requires an outside which is held back"[74]. He further suggested that immersive is pushing the walls, the floor, the guards – all the elements of the system - the frame to allow the "forbidden things" which the "white cube" museum has eliminated: "Immersive show suggests to leave the museum behind, enter the work. And the aspects such as color, texture, sound, smell - "forbidden things", become

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[72] Wigley, M. (2015). The Museum is the Message, Symposium 'Between the Discursive and the Immersive'. 3 – 4 December, 2015. Louisiana Museum of Modern Art in Humlebaek, Denmark. Available at <http://research.louisiana.dk/videos/mark-wigley#.Vyy322M4lZ1>.

[73] Ibid.

[74] Ibid.

important aspects of immersive because they enter the museum space where they should not be. The immersive puts the whole museum behind the scenes."[75] Wigley's reasoning grounds immersive exhibitions into the museum system and context, and, moreover, into the culture of spectatorship which makes his contribution valuable for both researchers and practitioners to consider.

One of the first works in Russia specifically tackling immersive exhibition types was published in Russia in 2011 as a Doctoral thesis *Method of immersion as an actual method of museum exposition creation"* conducted by Chuklina[76]. In 2011 she claimed immersion to be a new popular method applied to exhibition creation which she suggested to name "submersive". She studied this subject from the perspective of history of representation and scenography rather than exhibition design practice[77]. Chuklina described exactly the same notion of immersive which American and Swedish researchers have referred to as "immersive" already in the 1990s. Chuklina's research contained only the references to the Russian authors eliminating the link to already existing research on the notion of immersive in the United States and Sweden. The finding and establishment of immersion as a new popular approach to exhibition design by Chuklina, which is identical to the already identified approach in the Unites States about two decades before her research, in the unawareness of its existence, speaks for the fact that immersive is a common tendency which is being recognized today internationally in the museum and exhibition design. In Russia, where the traditions of exhibition design were abrupt by the World War II and then by the economic crisis of 1991 and 1999 following the fall of the USSR, the development of the exhibition design field has really picked up only in 2012. The experience economy has also pulled immersion in museums as a new way to experiencing and designing exhibitions. Chuklina's work was very timely in respect to the hype of immersion.

Moreover, today it is asked in the design briefs to create fun, exploratory and immersive experiences for their visitors. These terms often challenge designers as "immersive" is often understood differently among designers and curators. Designers trained in designing spatial narratives may see "immersive" as a visitor path through a combination of elements which make a space particular: lighting, materials, enforced paths, scale, sound. And curators, for example, trained in research on a particular topic, may rather consider technological elements like interactive tables or large projections immersive.

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[75] Ibid.

[76] Chuklina, T. (2011). Method of immersion as an actual method of museum exposition creation. (Doctoral dissertation, Saint Petersburg State University, Saint Petersburg, Russia).

[77] Ibid.

While this is not always the case, it still remains an obstacle in many projects. This may be due to the fact that immersive has been widely discussed from the perspective of implementation of new technologies in museums[78] and immersion through a set of spatial parameters has been moved away out of the scope of attention as it appears challenging to underpin its effect on visitors. During the design process, it can also be difficult to communicate the effect of not yet built but imagined space through the commonly used by designer's tools: visual references, architectural models of the space, color palette and material samples.

In conclusion, the range of the term "immersive" is wide. These definitions developed by the researchers which contribute to immersion cover a wide range of elements used in non-immersive exhibit spaces too. In order to get closer to understanding the methods of designing effective immersive exhibitions, it seems necessary to rather look into the creation of visitor mental paths and experience created by collaborative efforts of all stakeholders of the exhibition design process who would really contribute their expertise with personal experience to the table.

Designing Immersion

Immersion is a complex concept which spirals through the notions and fields of storytelling, architecture, psychology and perception, the culture of spectatorship, interface design, philosophy. It seems almost impossible to grasp how theoretical concepts of immersion will successfully work in practice. While in theory, immersion sounds fascinating, it is rarely translated into built environments in its full complexity[79]. The simplification of translation of immersive into practice is the reason why I suggest considering the design of immersive spaces as a network of not only spatial and conceptual parameters but also as a network of stakeholders' relationships and effective contribution to the creation of an exhibition. Effective here refers to using both professional expertise and intuition as the combination of both can contribute to embracing the experimentations and eventually further the development of immersive in practice. It may happen when all stakeholders will freely share their imagination and intuition for the design of space and narration, it is not anymore that the design can solely be developed by a designer. While for several years already collaboration has been encouraged in the field of

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[78] Ciolfi, L., & Bannon, L. J. (2005). Space, place and the design of technologically-enhanced physical environments. In *Spaces, spatiality and technology* (pp. 217-232); Stogner, M. B. (2011). "The Immersive Cultural Museum Experience--Creating Context and Story with New Media Technology". *International Journal of the Inclusive Museum*, *3* (3).

[79] Gander, P. (2005). *Participating in a story: Exploring audience cognition* (Vol. 119). Lund University.

exhibition design[80], in practice many museums still act as clients expecting designers to create an exhibition based the brief without further effective engagement. The issues of translating immersion into practice and pinpointing the exact design technique which help to create immersion, as well as, design processes including ways to collaborate on an exhibition design project will be addressed throughout the thesis in the following chapters.

Just like immersion is laying on the intersection of the different fields spiraling through them, the exhibition design process is a group of stakeholders' who exchange ideas which, if implemented effectively[81], can contribute to the creation of a carefully thought through exhibition structure, conceptual and spatial narrative which orchestrate visitors' attention in such a way that it leads to the feeling of immersion. Professionals have the skills to create exhibitions but often fail to let go of the professionalism and break through the pattern of well-established solutions in order to open up to experimentation, re-evaluate the approaches which are often used. Moreover, not all institutions also would support the risk of experimentation, hence a lot depends on a particular museum policies and visions rather than on the design teams.

At the moment there are different techniques which designers use to discuss exhibition design with other stakeholders[82]. For example, they widely use architectural models to demonstrate the three-dimensionality of space, and storyboards illustrate a two-dimensional representation of visitor experience. However, while these tools are illustrative, they may not always be engaging stakeholders into contributing a new input.

Measuring Immersion

While measuring of immersion is out of the scope of this study and the focus is on understanding what design practitioners know about immersion, how they define and design in, it is nevertheless, worth giving a context and showing how immersion is studied from the visitor studies perspective. Immersion has truly triggered researchers' interest in the past decade, and research on measuring visitors' experiences in exhibitions started to emerge.

Some studies have attempted to study visitors' perception of exhibition spaces through visitor surveys rather than their responses to the artworks. For

[80] McKenna-Cress, P. and Kamien, J. (2013). Creating exhibitions: collaboration in the planning, development, and design of innovative experiences. John Wiley & Sons.

[81] McDonnell, J. (2012). Accommodating disagreement: A study of effective design collaboration. Design Studies, 33 (1), pp. 44-63.

[82] Dernie, D. (2006). *Exhibition design*. Laurence king publishing; Macdonald, S. (2007). Interconnecting: museum visiting and exhibition design. *CoDesign*, *3*(S1), 149-162.

example, during the popularity of Bitgood's theory of immersion, in 1998 the Denver Art Museum has conducted a study[83] of visitor perception of old and new museum galleries. A survey *"Experience Sampling Form"* originally developed by Csikszentmihaly (1991)[84] in his theory of optimal experience "flow". It has been borrowed and adopted for the study within the museum contexts. The Denver Art Museum study has proven certain aspects of exhibition design contributing to feeling immersed but in full it has shown to be limited. Its characteristics are a sense of wonder, individual interpretation, factual information, intense concentration, complex mental activity, goal-directedness, a presence of challenge, the interplay of knowledge, memory, emotion, sensation, and perception. It is a wide and complex set of characteristics which is difficult to apply to exhibitions and traces the aspects of immersive, nevertheless, researchers draw onto some factors from this theory. Lankford (2002)[85] notices among the aspects of immersive concentration, complex mental activity, challenge, memory, emotion, and sensation. These factors of perception are difficult to study in a complex environment of an exhibition setting, however, some studies have been conducted.

There also methods which use technology to track how human body responds to artworks instead of using visitor surveys. One of such research projects has focused on measuring the aesthetic experience, among those are two European projects - *eMotion* and *SYM*. The *eMotion*[86] project has been funded to conduct a three-year research of visitors' aesthetic perception of the artworks through measurement of their physiological state. It appears as the first study to provide statistical data of a large sample of participants that illustrates the embodiment of aesthetics as priorly the research on visitor perception was conducted through visitor surveys only. Moreover, aesthetic perception was not measured in the museum environment. The measurement was conducted with a glove with sensors which the participants wore so that the skin conductance levels and cardiac activity could be registered. The process was as follows: participants wear a glove; fill out the entry survey in which they describe their motivation to visit the exhibition, they knowledge of art, current emotional state; the data is being collected as the visitors are

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[83] Harvey, M. L., Loomis, R. J., Bell, P. A., & Marino, M. (1998). The influence of museum exhibit design on immersion and psychological flow. *Environment and Behavior*, *30* (5), 601-627.

[84] Csikszentmihalyi, M., & Csikszentmihaly, M. (1991). Flow: The psychology of optimal experience (Vol. 41). *New York: HarperPerennial.*

[85] Lankford, E. L. (2002). Aesthetic experience in constructivist museums. *Journal of Aesthetic Education*, *36* (2), 140-153.

[86] Tröndle, M., Wintzerith, S., Wäspe, R., & Tschacher, W. (2012). A museum for the twenty-first century: The influence of 'sociality' on art reception in museum space. *Museum Management and Curatorship*, *27* (5), 461-486.

exploring the exhibition, exit survey is conducted to identify which artworks attracted more interest and which ones cause higher skin conductivity. These methods collect sociological, psychological, physiological and behavioral data. As stated earlier, the interest in understanding the perception of art has been explored by Arnheim, Gombrich, Dorner which in the 1920s and in 2012 researchers were able to start measuring it by collecting physiological responses of people. This study aimed to illustrate per say not the perception in its all complexity but the spectator's presence and, therefore, immersion: "In addition in the newer media studies, the term *presence* has lately been used to describe the moments when emotional reactions are caused and the beholder is immersed in another world."[87]

A more recent project *SYM (Spot Your Mood)*[88] focused on identifying visitors' response to art by tracking their pupils' movement is another example of growing interest to understand how visitors respond to art on an emotional level measuring the moods. The study was a prototype of not disruptive piece of technology which with the help of visitors could provide data on the state of mood. Instead of measuring emotions, researchers focused on asking visitors to spot their moods. *Emotion* – response to internal or external stimulation. However, there are disagreements in the body of research on what emotion is – 38% is considered a psychological reaction and 62% is considered a psychological one, as the authors state. According to them emotion is not possible to measure on a macroscopic time scale, because it transmits through the physiological nature (heart rate, blood pressure) and psychological – (feeling), which therefore means that emotions are "too volatile, too transient"[89]. During literature research they found out that emotions "[…] are inaccessible to the conscious mind […]"[90] and found more coherence in the research on mood:

> "Hence, the mood stands for a state, at a given time, in a given situation, that is linked to the framework of the whole organism by the attention given to its sense-making and cognitive processes. Thus, mood is seen as the psycho-physiological substratum of any situation; whenever we are in a certain situation - in other words, all the time - we are in a certain mood (very similar to Heidegger's concept of "stimmung") even though we are only able to be conscious of that state if we focus

[87] Tröndle, M., Wintzerith, S., Wäspe, R., & Tschacher, W. (2012). A museum for the twenty-first century: The influence of 'sociality' on art reception in museum space. *Museum Management and Curatorship*, *27* (5), 461-486.

[88] Yvart, W., Delestage, C.A. and Leleu-Merviel, S., 2016, March. SYM: toward a new tool in user's mood determination. In Proceedings of the 2016 EmoVis Conference on Emotion and Visualization, pp. 23-28. Linkoping University.

[89] Ibid.

[90] Ibid.

our attention on it."[91]

So the authors set on the Lane and Terry's definition[92] of the mood: "a set of feelings, ephemeral in nature, varying in intensity and duration, and usually involving more than one emotion"[93] and considered emotion as a disturbing element in the mood. Their prototype has provided the field with another tool which more simply than in the *eMotion project* – glasses with eye-tracking technology and visitors willing to participate to spot their moods – contributed knowledge on trying to explain visitor responses and moments of immersion with the statistical data.

A similar to the Denver Art Museum and more recent research conducted by Forrest in 2015 also focused on measuring visitors' perception of exhibition spaces. Her research drew from the field of environmental psychology. She created a visitor survey called *Perceived Atmospheric Environments*[94], which aimed at identifying four factors: vibrancy (dramatic, active, vibrant, striking, dynamic, colorful, energetic, three-dimensional), spatiality (wide, spacious, open, uncluttered), theatricality (winding, modern, asymmetrical, targeted lighting, dark), order (ordered, organized, structural, flowing). Even though this study uncovers how visitors perceive a certain gallery space, it still is limiting due to the nature of subjectivity in survey creation and data interpretation. Her study will be addressed in detail in the next chapter on the factors of exhibition narrative and environment.

[91] Ibid, p.24.

[92] Lane, A. M., & Terry, P. C. (2000). The nature of mood: Development of a conceptual model with a focus on depression. *Journal of applied sport psychology*, *12*(1), 16-33.

[93] Yvart, W., Delestage, C.A. and Leleu-Merviel, S., 2016, March. SYM: toward a new tool in user's mood determination. In Proceedings of the 2016 EmoVis Conference on Emotion and Visualization, pp. 23-28. Linkoping University, p. 24.

[94] Forrest, R. (2015), *Design Factors in the Museum Visitor Experience*. (Doctoral dissertation, University of Queensland, Brisbane, Australia), p.60. Retrieved from https://espace.library.uq.edu.au/view/UQ:348658/s4254715_phd_submission.pdf.

SPACE AND NARRATIVE IN EXHIBITION DESIGN

This chapter presents the intertwining relationships of space and narrative in exhibition design which is a crucial aspect for any museum exhibition and can be broken down into a number of details. Narrowing down and bringing in the complexity, these details can be viewed from different perspectives – visitor and designer ones. Visitor perspective refers to how the audience perceives exhibition spaces, i.e. visitor studies, and designer perspective refers to how designers work with interpretation and creation of exhibition spaces for visitors. This research is focusing on the designer perspective and draws on some visitor studies, however, they are not the subject of this investigation. Space refers to spatial parameters of existing galleries and elements designs specifically for exhibitions.

The *narrative* part relates to the content – the story, which needs to be communicated spatially throughout the exhibition. It can be communicated with a variety of different means such as text, graphics, sound, light, digital multimedia. The *space* part refers to the structure of the visitor experience – when in the space each part of the narrative is presented. The *space* and *narrative* part of the chapter will examine practices which prevail today. The next chapter *Imagination* will discuss an important, yet not integrated into the exhibition design practice, studies on imagination. And the *imagination* part relates to both visitor cognitive processes in response to what they experience in exhibitions and to what exhibition design practitioners posit as imaginative factors in exhibitions[95].

The goal of this chapter is to demonstrate how space and narrative correlate in exhibition design from the point of view exhibition design and to indicate further and in-depth examination of the design approaches to cover the immense amount of factors related to space and narrative design and those factors which can trigger imagination. At the moment research on cognitive processes which trigger imagination in the exhibition environments is not well integrated into the research on exhibition design and yet remains under-investigated.

The importance of visitor studies in the museum field has been constantly growing reaching its peak today and will probably continue growing in the future. This is not only driven by the shifts in perception of information due to the change of everyday interactions over time and channels but also by museums' gradual shift from museum as guardians of collections to museums as

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[95] Achiam, M. F. (2016). The role of the imagination in museum visits. Nordisk Museologi, (1), 89; Dufresne-Tassé, Colette et al. 2006. "L'imagination comme force dynamisante du traitement des objets muséaux par des visiteurs occasionnels." In Colette Dufresne-Tassé (ed.). Families, Schoolchildren and Seniors at the Museum. Research and Trends. Québec: Éditions MultiMondes, 160–176; Scheersoi, A. (2015). Catching the visitor's interest. In *Natural History Dioramas*. Springer, Dordrecht. pp. 145-159.

disseminators of knowledge and active providers of cultural resources. The focus on the receiver – the visitor, has shadowed the importance of studying the provider side – the design team and design production carefully and concretely. Educators tend to collect information about how visitors behave in exhibitions and analyze it to make exhibitions more effective learning environments. And within the experience economy also create such exhibition spaces which evoke emotions at first place. Frank den Oudsten in his 1995 paper "The exhibition as theatre" made a clear distinction between the visitor studies approach which he referred to as being developed by the "enthusiastic educators" and designer approach – "ambitious creators"[96]. The International Laboratory for Visitor Studies at the University of Wisconsin was the leading center for understanding visitor learning styles and identifying how to present content in a way which was most effective for learning. The progressive "ambitious creators" according to Oudsten was the Camini Foundation in the Netherlands[97] which was not fond of basing exhibition design on the statistics and recommendations drawn from visitor studies. In fact, Camini Foundation has introduced dramaturgy to exhibition design in 1989 which is an approach focusing on working with narrative spaces rather than didactic recommendations developed from visitor data. Their research has become a foundation of the Scenographical Design course taught by Frank den Oudsten in Zurich as an invited lecturer at the Hochschule für Gestaltung[98]. He is the adherent of the dramaturgical method practiced by who he refers to as "ambitious creators" and argues that the design approach purely based on visitor studies increases professionalism but "destroy[s] the "bite" in the work"[99]. In the paper "The exhibition as theatre", however, there is no explanation of the dramaturgical approach developed by the Camini Foundation. Current research posits that the topic of narrative environments and immersion needs solid foundation and identification of particular techniques and factors which are prevalent for narrative spaces.

It is also true that much can be learnt when interpreting and understanding visitor responses and behavior to the texts written by curators, exhibition concepts developed by the whole team of designers. However, such results can be used as partially guiding principles, exhibition creators need to incorporate their intuition and creative skills to create exhibitions that are contributing something to the visitors. Today the desire to implement the result of visitor studies into the exhibition development prevails and is also supported by the shift to user-centered approach in design and consequently visitor-

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[96] Den Oudsten, F. (1995). The exhibition as theatre. *Museum International.* (UNESCO, Paris). No. 185, 47 *(1),* pp.14-15.

[97] Ibid, p.15.

[98] Ibid, p. 11.

[99] Ibid, p. 15.

centered approach[100] in museums. And this leads the tendency to create didactic exhibitions rather than exercising artistry and experimentation in exhibition design. In current practice it is impossible to decline making informed design choices based on visitor studies, however, it is crucial to combine them with intuitive and, perhaps, dauntless interpretative design techniques.

Space and narrative

Space and narrative are prominent features of exhibition design and are difficult to separate from each other. Often exhibition design is identified as a sub-category of Interior Design or Interior Architecture disciplines which leads to conclude that exhibition design considers aesthetics, spatial layout and, perhaps, even a visitor flow.[101] This sub-categorization is related to the professions which practiced exhibition design which has developed into a field which requires more diverse expertise than the "[…] classical abilities of conventionally trained curators, architects and interior designers no longer sufficed."[102] Today, indeed, museums hire people with User Experience background, game development, neuroscience[103] backgrounds because the representation of content and approaches to exhibition design have shifted.

Narrative is an essential factor in exhibition design because objects of collections are either interpreted or displayed for visitor interpretation to form a coherent storyline which conveys an exhibition message[104]. Exhibition message is a term used by designers, it refers to the main ideas of the exhibition topic which visitors walk away with whether they have run through an exhibition or thoroughly engaged with the content. Exhibition message is conveyed through both narratives and space design, it is an overarching and connecting element. Sometimes though narrative space can also be referred to as *scenography*. There is not a detailed and precise vocabulary used by design professionals, curators and other stakeholders of the exhibition design process. Terms vary from country to country even though many terms have been borrowed from the studies

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[100] Samis, P., & Michaelson, M. (2016). *Creating the visitor-centered museum*. Routledge.
Falk, J. (2016). Museum audiences: A visitor-centered perspective. *Loisir et Société/Society and Leisure*, *39* (3), 357-370.

[101] Dernie, D. (2006). *Exhibition design*. Laurence king publishing.

[102] Christian Barthelmes and Frank den Oudsten (eds.), Scenography/ Szenografie: Making Spaces Talk/ Narrative Raume/ Projekte 2002 – 2010 (Ludwigsburg: avedition GmbH, 2011), p. 17.

[103] Mansky J. (2018), *"The Neuroscientist in the Art Museum"*, Smithsonian.com, June 19, 2018. Available: [https://www.smithsonianmag.com/arts-culture/neuroscientist-art-museum-180969388/]. Accessed: June 19, 2018.

[104] Lake-Hammond, A., & Waite, N. (2010). Exhibition design: Bridging the knowledge gap. *The Design Journal*, *13*(1), 77-98.

developed in the US. Moreover, terms may vary slightly from one museum to another and one design company to another, though overall, design professionals will understand the differences in terminology while the terms *scenography* or *narrative space* or *theatricality* can often create misunderstanding among and between designer and non-designer stakeholders on the exhibition projects. *Scenography* and *narrative space* are usually used among German-speaking professionals while *scenography* and *theatricality* would mostly be used by Russian-speaking professionals. English-speaking professionals would use *theatricality* in most cases referring to an exhibition environment in which objects are supported with the designed elements to help transmit the narrative line through the objects themselves. *Narrative space* is the term which became most popular today among exhibition design professionals across various geographical and cultural contexts they are working in and is used in reference to the synthesis of an exhibition concept and purpose with the physical context in which the exhibition is set up and its correlation to the narrative. While *scenography* and *theatricality* refer to the unity of the exhibition space which is transmitted through installation-like design, often metaphorical spatial installations[105] and the completeness of the conceptual narrative, the *narrative space* points and highlights at the foremost the completeness of the narrative no matter what visual design choices are made to support the narrative in order to make the most compelling impression on a visitor.

There is an interesting parallel between narrative spaces, scenography and immersion in museums and empirical studies of visitor perceptions of immersion – both refer to ignition of imagination as an important factor which leads to feeling immersed. However, those studies do not yet merge in the contemporary research – visitor immersion is studied outside of the context of exhibition design and exhibition design does not reflect on the visitor studies related to cognitive processes which trigger imagination. Enquires into merging those studies could shed light onto what are the aspects of immersive exhibition design in the 21st century. This chapter will delve into the factors of narrative spaces and scenography.

James Gardner

The importance of the narrative as a core and a holding-everything-together element has become prominent from the 1980s when the attention shifted to creating a holistic experience rather than creating a set of separate displays. While the change is noticeable in the 1980s, during nearly the whole 20th century an exhibition designer James Gardner has been creating exhibition projects which mixed in themselves educational and artistic aspects.

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[105] Chandler, D. (2007). Semiotics: The Basics London, Routledge

James Gardner worked predominantly in the UK from the 1920s to 1990s but also undertook a number of international projects in Europe and in Asia. The Design Archive at the University of Brighton holds the archive of James Gardner with the immense amount of stakeholder communication, exhibition sketches and documentation deserves a project of its own who has yet not been realized by anyone.

James Gardner (1907 – 1995) started his career working as a jewelry maker, then a graphic designer, then during the Second World War he was affiliated with the Army Camouflage Unit. In that period, he was noticed for building a fake cardboard tank which has appeared as a real one to the military general who was checking his work progress.

> "James Gardner (1907-1995) was one of Britain's most imaginative post-war designers. Best known for his exhibition work, he applied his skills in a variety of contexts; from illustration to ship design. The archive comprises works on paper that describe individual design projects together with business correspondence and private papers. Original plans and drawings relate to major overseas exhibition projects, among them, the World's Fair, Brussels (1958) and the Museum of Tolerance, Los Angeles (1993)."[106]

During the War he was designing some aircraft interiors and ships as well. Then came a large project for Philips Project called Evoluon (1962 – 1981), in fact, this is the only project of James Gardner on which there are a few publications. Gardner worked on large museum projects which can all be found in his archive well-documented: meeting-minutes, original plans, sketches, budgets and management plans. From such full documentation, it is clear and can be confidently stated that Gardener with his small team of a researcher and a graphic designer created exhibitions which used scenography, he focused on creating a coherent environment interpreting the exhibition content through 3-dimentional aids and considering the visitor flow.

One large international project completed by Gardner was the National Museum of Natural Science *(illustration 1)* in Taiwan (1986 – 1988). Gardner was invited to create the display for one museum wing opening in 1986 and the second one opening in 1988. One perk of this Natural Science Museum was that there was no collection, everything had to be fabricated. The director of the museum Pao-Te Han was searching for designers who would be capable to create new museum displays from scratch and also be engaging for wide audiences. It was long that Han was not finding a suitable designer because

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[106] James Gardner Archive, Arts Brighton, University of Brighton,
[http://arts.brighton.ac.uk/collections/design-archives/archives/james-gardner-archive]. Accessed: August 3, 2017.

either he would get portfolios which focused on scientific displays and not considered the environment or purely creative ones which lacked the museum aspect. Finally, Gardner's work comprised of both – creative approaches to communicating the content and the ability to work with complex interpretations of the scientific topics. Gardner was already in his 80s when he was hired for the National Museum of Natural Science project in Taiwan[107].

Throughout the 20th century, James Gardner practiced exhibition design which was grounded in creating narrative spaces, he connected the existing spatial parameters with the content and designed exhibitions considering visitor experiences of the viewed content and objects. However, his work is not represented in exhibition design books for students and professionals while his archive offers exhibition management and design aspects to reflect on.

Illustration 1. A piece of installation for National Museum of Natural Science in Taiwan (1986 – 1988). Taiwan Review (1989), "Scientific Artistry", Taiwan Today, November 1, 1989. From *https://taiwantoday.tw/news.php?post=23027&unit=12,29,33,45*

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[107] Life on Earth – made in England. (1988, September 22). *New Scientist*, p. 67.

Scenography or exhibition design?

Frank den Oudsten has written a timely book dedicated to space, time and narrative in post-spectacular exhibitions which focuses on the relationships between things, themes and objects rather than objects themselves and how these relationships form a narrative. There is a distinction pointed out by Oudsten which highlights the importance of studying and working with space and narrative in the exhibition design discipline. He writes: "The theatre and the exhibition invite the visitor to their worlds. The Internet and television bring the world to his or her home. The distinction is a matter of who and what is moving."[108] This distinction is quite literate and might not anymore be the absolute truth because a large number of museums now bring exhibitions through their websites and social media, e.g. Internet to people's homes. However, the focus here will be on the physical exhibition spaces and, therefore, talking about the aspects of spatial narratives where both physical and mental presence is essential. A factor which is important in the narrative space according to Oudsten is attention, attention which immerses visitors to be in the now.

What is scenography[109] in exhibition design and is scenography exhibition design? We may posit that today scenography and exhibition design could be synonymous because of the shift from didactical to experiential exhibitions, however, exhibition design is a process of creating an exhibition or a field concerned with various aspects of displaying and interpreting of information and objects while scenography is an exhibition design approach which uses symbols to create meaning-making. In a way scenography is visual representation of ideas unlike the didactic display which is more a collection of things. Moreover, scenography is a common term in Germany referring to exhibition design while in the United States and Russia, for example, "theatrical" is usually used to describe spatial installations in which the objects of the collections are displayed rather than a structured approach to developing exhibitions. "Szenografie" is a term widely applied to exhibition design in Germany by professionals. *Exhibition design* is a term which is widely used in the US, Australia and the UK. In Russia, *scenography* is associated with theatrical exhibitions which tend to be typical to literature museums which are often the apartments where a famous writer or poet lived.

As Uwe Brückner explains, scenography has become an established term in the early 2000s in Germany and implied that it is a discipline which is explicitly dedicated to the representations in a staged environment. However, it

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[108] Den Oudsten, F. (2016). *Space. time. narrative: the exhibition as post-spectacular stage*. Routledge, p. 1.

[109] The etymology of scenography has the roots in the Greek concept of the "skené" (shed, tent, hut) the wooden shelter behind which the actors changed their costumes, later "skené" has become a building which allowed various transformations. Bibliography on scenography is vast, however, the focus of this research is on the exhibition design practices and the history of scenography is outside of the context of this investigation.

is not scenography which conveys the meaning in the "bourgeois common-sense"[110] but scenography which aims to constitute a meaning with artistic means. There was a theater boom in Germany which influenced scenography, because Germany had large funding to support theater in the 1980s. Exhibition has been an independent from the 1980s and in the 1990s exhibitions showcasing specific themes became tremendously popular. According to Atelier Brückner the term *scenography* has established itself at the Expo 2000 in Hannover, 19 years ago. It is important to highlight here that in 2000s there was an establishment of the term – its acceptance by wider audiences which does mean that scenography in exhibition design was not practiced prior to that.

The statement made by Brückner that scenography started to establish itself in 2000s can be questioned. First of all, evaluating the type of the book where it is stated – it is not an academic book or a book chapter written by an exhibition design professional aimed to share their best practices with the wide community of museum professionals, it is a book which does go in-depth about creating scenography but it also tends to promote the company as the pioneer of using scenography for creating exhibitions. While having a tint of self-appraisal in stating that Atelier Brückner was the first who applied scenography to creating exhibitions, the description of the process and strutting of scenography in the book *Scenography/ Szenografie: Making Spaces Talk/ Narrative Raume* (2011) is of utmost validity to both practitioners and design researchers because it describes how one can approach spatial parameters and ideas so that they are shaped into an exhibition experience. Additionally, the 2011 dissertation of the Russian researcher Chuklina[111] shows that a similar to scenography method "museum-imagery"[112] was described by Rozenbloom[113] in 1974. The particularity of this method is in creating an interpretative environment for the displayed collection and imbedding them into that environment so that they obtain meaning due to being positioned into an installation which visitors can interpret. And scenography is guided by the same principle. Both methods can be literal and metaphorical, i.e. they can recreate a literal real life environment as the setting for the objects or they can create a metaphorical setting for the objects which aims at communicating an

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[110] Christian Barthelmes and Frank den Oudsten (eds.), Scenography/ Szenografie: Making Spaces Talk/ Narrative Raume/ Projekte 2002 – 2010 (Ludwigsburg: avedition GmbH, 2011), p.12.

[111] ᵃChuklina, T. (2011). Method of immersion as an actual method of museum exposition creation. (Doctoral dissertation, Saint Petersburg State University, Saint Petersburg, Russia), p. 28.

[112] "museum imagery" is a direct translation from Russian for the exhibition design approach which has not yet been drawn parallels with methods used in Europe or in the US.

[113] Rozenbloom, E.A., 1974. Artist in design. Translated from Russian: Розенблюм, Е.А., 1974. Художник в дизайне.

atmosphere rather than a certain place and time. Chuklina's research supports that scenography was not invented and integrated as an approach to designing exhibitions by the Atelier Brückner. Germany must have offered preceding to Brückner's scenography experiences which were either using the same methods but not named "scenography".

In the 1990s there was a tendency to create exhibitions with more elements which are native to theater. For example, there are two examples of such exhibitions designed by the American exhibition design company Ralph Appelbaum Associates. First one is the redesigned by Ralph Appelbaum Associated Hall of Biodiversity at the American Museum of Natural History in New York in 1988 for which they received numerous awards[114].
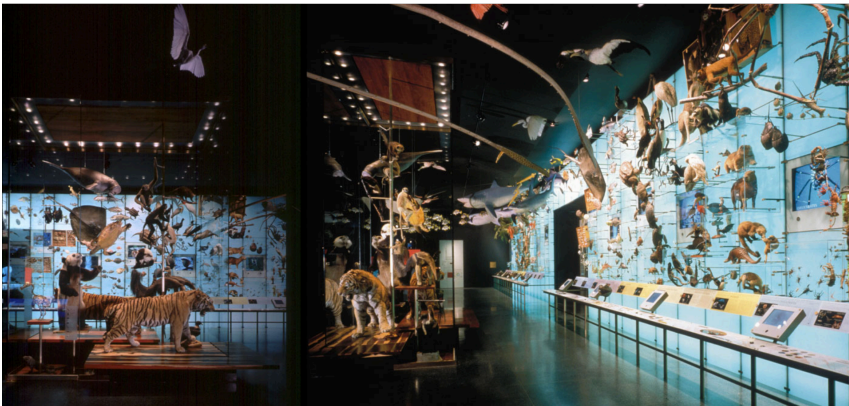
Illustration 2. Hall of Biodiversity, American Museum of Natural History, New York. Exhibition project created by Ralph Appelbaum Associates in 1998. From http://www.raany.com/commission/hall-biodiversity/

And the second one is the United States Holocaust Museum in Washington D.C. which they designed in 1993. Both examples are still included into the exhibition design curriculum as references for design choices which attract visitors' attention and tend to create an emotional response. Another example is the "Expedition Titanic" designed by the Atelier Brückner in 1997 which will be discussed further in this chapter[115] for its theatrical effect in which the narrative speaks through the design rather than is being told through interpretative labels.

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[114] [http://www.raany.com/commission/hall-biodiversity/]

[115] Chapter *Space and Narrative in Exhibition Design: Scenography or exhibition design?* pp. 38-55

Ralph Appelbaum Associates and Atelier Brückner were two giant exhibition design companies which worked in this exhibition design style and still continue, however, they are now overshadowed by the newer companies which respond to the demands of the audiences with fresh solutions shifting the trends.

And finally in 2000s there was the audiences' need for the new museum space: "authentic spatial experience"[116]. Exhibition designers and museum professionals picked up on it.

> "Whereas the work of art purports to be enigmatic and ambiguous, scenography brings about elucidation, resolution and clarity. Where art irritates and is disturbing, scenography is concerned with orientation and insight; it is craftsmanship and theory, technique and technology at the same time. Scenographic design involves processes of original artistic conception and creation. The scenographer is an author of designs."[117]

Here the author makes a clear accent on the creator of scenography not being a designer but rather being a director of a staged experience. The highlight on what the role of a scenographer is contributes to the understanding of how

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[116] Christian Barthelmes and Frank den Oudsten (eds.), Scenography/ Szenografie: Making Spaces Talk/ Narrative Raume/ Projekte 2002 – 2010 (Ludwigsburg: avedition GmbH, 2011), p. 16.

[117] Ibid, p.12.

exhibition design in the United States and scenography in Germany can be quite different though very similar disciplines. And most importantly this statement demonstrates that design approaches do not exist abstractly from their creators but are strongly driven by them. In the United States exhibition design is taught and promoted as a collaborative process where designers are the communicators and translators of the content developed by curators. It is moreover seen as a process without hierarchies where designers, curators, researchers, education and marketing specialists contribute evenly to the exhibition ideas at the initial stages of project development and at the later stages they contribute specifically to the area they are responsible for. In the way Atelier Brückner is narrating the process, it appears that a scenographer is an important and even authoritative figure in the process of creating exhibition scenographies. Here it is important to remember that there can be several scenographers on one project and all of them will be contributing to the creation of designs. The explanation of the approach continues: "Exhibitions are always spatial installations. We therefore plan and design them in and with space from the very beginning."[118] From a first glance it might seem that exhibitions can be spatial installations, however, it is important to make a distinction here of installations from exhibition installations to avoid possible confusions. An installation is a piece of art in itself while an exhibition as a spatial installation is an environment which helps to communicate stories about the objects and visually place objects within a context of the exhibition message. Atelier Brückner describes scenography:

> "Scenography creates form from content, endowing the latter with meaning and attitude. It generates narrative spaces from ideas, things and stories and conveys their contents as messages. Scenography re-contextualizes, makes things talk and imbues them with relevance for the presence. From content to narrative spaces – from the form to the message."[119]

At this exact point it appears interesting to compare back-to-back the views of two prominent in the field of exhibition design and scenography practitioners and researchers – Uwe R. Brückner and Frank den Oudsten. This is what Frank de Oudsten write about scenography:

> "Scenography is not concerned with things but the relationship between things. Where design still remains absolute due to its focus, scenography is always relative. Scenography is everything that design is but is framed in a centripetal field of force. The new

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[118] Ibid, p. 116.

[119] Ibid, p. 59.

parameter is proximity. How far apart are things? The crucial criterion is how close one is to events or, vice versa, to what degree of proximity does the dramaturgy of the narrative space invite the recipient."[120]

Uwe Brückner, a designer and the founder of a German exhibition design company Atelier Brückner[121] which has become famous for its scenographic exhibitions which appear as spatial installations with prominent narrative(s) on the topic of an exhibition where the designed interpretative elements help objects to communicate, where the objects carry not only the factual information but also sentiment. The company claims that they have developed a structured approach to designing scenographies which they presented to the public in the 2010 book[122]. On one hand, this statement is valid because they have published a book with the step-by-step process of their exhibition design and background information about scenography. On the other hand, this process has a lot in common with an exhibition design process which is used by numerous museums and exhibition companies in the United States and the United Kingdom for over 30 years.

Some of the most recognizable to the wide audiences of museum professionals as well as museum goers for their narrative space project of the Atelier are the BMW museum[123] in Munich, CERN – Universe of particles[124] in Geneva, Expedition Titanic[125] in Hamburg. Uwe Brückner also teaches scenography at Fachhochschule Nordwestschweiz FHNW and Tongji University in China. It is the only exhibition design company which has published a book showcasing all of the projects which the Atelier has worked on and describing the methodology which the design process is guided by. This resource is a valuable contribution to the field of exhibition design because it describes the aspects of creating spatial narratives, connecting collections to spaces through design and an over-arching story unlike other handbooks on exhibition design which tackle the stages of the project and technicalities project management, it puts emphasis on connecting collections with spaces and visitors.

Moving on to the foundations of scenography which is practiced by

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[120] Ibid, p. 60

[121] [http://www.atelier-brueckner.com/en/projects?tag=12]

[122] Christian Barthelmes and Frank den Oudsten (eds.), Scenography/ Szenografie: Making Spaces Talk/ Narrative Raume/ Projekte 2002 – 2010 (Ludwigsburg: avedition GmbH, 2011).

[123] [http://www.atelier-brueckner.com/en/projects/bmw-museum]

[124] [http://www.atelier-brueckner.com/en/projects/cern-universe-particles]

[125] [http://www.atelier-brueckner.com/en/projects/expedition-titanic]

Atelier Brückner, we posit that they use the three factors as a foundation for exhibition design - space, time and narrative in the structure they have developed. They refer to these factors in a visitor journey as "routing"[126] and always base their exhibition designs on them. So what does it mean to use "routing" as a foundation for designing an exhibition? When starting to think about a new exhibition design, it is to think about how to utilize the existing space for a visitor journey. In fact, in the exhibition design terms in it referred to as "visitor journey" or "walkthrough" – planning what visitors will see in the space and at which point, where they will spend more time engaging with the content, where to place most important objects of the exhibition, what associations will be evoked and how they want visitors to feel. It can be thought of it as composing the space using a certain rhythm, pauses, suspension. The Atelier considers "routing" as the key feature of the exhibit and it comes in handy when the architectural parameters are being synchronized with the narrative: "It becomes a walk-through materialization of content as spatial experience. […] It is a search for a continuous line of narrative, a choreography of experiencing or a choreographed sequence of perceptions."[127]

Practicing designers who were interviewed for this research also highlighted the importance of thinking about the space as a landscape when designing an exhibition. Juri Nishi, exhibition designer at the V&A museum in London finds importance in using composition and harmony[128] when designing spaces. She thinks of a musical or choreographic composition and applies it to both – visitor trajectories in the space and object positioning. Dinah Casson from CassonMann uses the landscape[129] analogy to explain how the approach developing the walkthrough which places the attention not on the objects themselves but when, where and how they are placed in the space so that the form a coherent spatial narrative for visitors' perception. In alignment with the space, the time factor is thought through – speeds, chronologies and durations. And the third factor being a narrative is thinking through the stories, themes and content which will unfold in the space. Poetically Atelier Brückner refers to the "routing" as "both backbone and cardiovascular system of scenography"[130] emphasizing the important of these three interconnecting factors.

These three factors in the "routing" which are so important to the creation of exhibition scenography also exist in the exhibition practices in the United

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[126] Christian Barthelmes and Frank den Oudsten (eds.), Scenography/ Szenografie: Making Spaces Talk/ Narrative Raume/ Projekte 2002 – 2010 (Ludwigsburg: avedition GmbH, 2011), p.131.

[127] Ibid, p. 117.

[128] Appendix, *Interview with Juri Nishi*, pp. 139-150.

[129] Den Oudsten, F. (2011). *Space. Time. Narrative*. Ashgate Publishing, Ltd., p. 164.

[130] Ibid, p.131.

States. The terminology is different, for example, a "visitor journey" refers to the considerations of time in relation to space and narrative. I make these comments in order to draw attention to the fact that scenography as established by Brückner is not a whole new approach to exhibition design but rather an approach which highlights and works around those factors to ensure the coherence of the narratives across time and space.

Uwe R. Brückner questions how large design companies can sustain their flexibility and improvisation within the rigid structures of project management, which raises a topic worth thorough investigation in the future, and also brings us back to the differences of exhibition design in the United States and Germany. In the United States, indeed, there is a strong rigidity of an exhibition design process which includes the following stages: concept development, design development, development of technical drawings, fabrication and production, and installation. This is a logical and chronological structure to bring a project from conception to execution. What is important to look at here in more detail is the two initial stages of concept and design development which refer to the most creative part of the project. Very often, and this has been pointed out as a problem and become the main topic of investigation of Dr. Toni Roberts' dissertation[131], still existing in the field, that designers are integrated in the process of exhibition creation after the exhibition concept and narrative have already been developed and roughly laid out throughout the space. This illustration available on the website of Denver-based exhibition design company Studio Tectonic is an example of the result of developing concept and content for the gallery space. The information which the museum team wants to present to the visitors should eventually coherently fit into the given gallery space. At the very inception such gallery plans are messy, but over the process of the exhibition development, they become more solid, more detailed and more coherent.

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[131] Roberts, T. (2013). Interpretation design: building knowledge from practice. (Doctoral dissertation, Swinburne University of Technology, Melbourne).
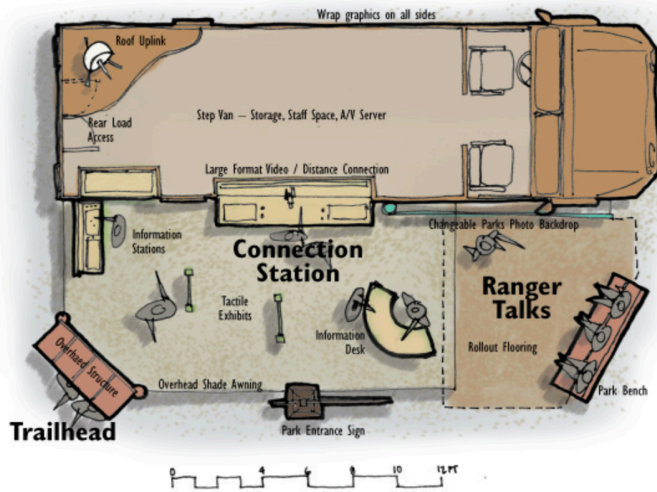
Illustration 4. Example of a content layout plan. From
http://studiotectonic.com/portfolio/national-park-service-mobile-exhibit-
master-plan#!prettyPhoto[single_port] /1/

The problem is that often such content layout onto the space gets already
developed by the museum team before the designers are invited to work on the
project. Often it results in incoherency of presented information, poor connections
between the exhibition sub-topics and discrepancy between content and space.

Neglecting to work with designers from the very beginning brings out two
main issues. The first is not reaching the highest creative points of conveying the
exhibition topics to the museum visitors and also moving exhibition design
forward as a field. Creative points in the scope as exhibition design would mean
presenting visitors with slightly more daring exhibitions which are not boring. In
the recent years much attention has been brought to the use of technology which
is a logical turn when technology provides solutions to multiple problems but it is
rather short-term than long-term. For example, technologies offer quick
adjustments of content which are otherwise costly if the texts have to be
restructured and reprinted, if the story told in the exhibition has to be changed.
And the second issue it creates is designer dissatisfaction due to the fact that
designers are often hired to realize, i.e. visualize and materialize an already
written and developed exhibition scrip. However, the main role of an exhibition
designer in the process is creation of an exhibition narrative together with the
curators, researchers, museum educators and marketing specialists. Exhibition
designers are also audience advocates as they design considering the end-user

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and making often complex material accessible to the wider audiences.

 According to Atelier Brückner's vision, scenographers are the generalizers among the designers, "[…] storytellers, seducers, abductors, agents of conviction; they are translators, decoders and, hopefully, visionaries – whereby the result is left open. Scenographers are designers and authors, and narrators, architects and generators of concepts."[132] While the idea of the role of a scenographer is to be communicating the information presented in the exhibition in the way that resonates with the audiences, this statement appears to create an image of a person who is capable to be the main driver of the process as well as the executor of the project. It requires to be a researcher who will is inspired by the information to create new concepts and connections between the concepts and topics, to be the person who can also translate these concepts into exhibition installations and, finally, put those installations into one coherent exhibition. Scenography is marked as an important element of an agreement for a delusion when both parties – the audiences and the actors – both know that one is being deluded and are watching stages stories and the other one as being the deluders and making the audiences believe what is staged is real:

> "The uninterrupted maintenance of this collectively agreed act of delusion, the unconditional trust in the integrity of the performance, the certainty that what is shown is nothing other than what is perceived – these are essential conditions for the emotion of the addressees and their willing submission to the illusion."[133]

The aspect of delusion is prominent in feeling to be immersed. When the audience chooses to go to museums and exhibitions to experience whether intellectually through connecting to the content by reading the labels and explanatory graphics and booklets or whether purely visually through connecting to the built environment, they chose to perceive the interpreted and fabricated by the museum team small world on a certain topic.

 Regan Forrest in her research[134], in fact, borrowed some tools from the field of designing retail environments to structure her visitor questionnaires and has developed the Perceived Atmospherics Instrument, she explored visitor relationships with exhibition environments in her doctoral thesis to create an instrument which could help different museum professionals to measure the exhibition design and also communicate using a shared vocabulary. Forrest

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[132] Christian Barthelmes and Frank den Oudsten (eds.), Scenography / Szenografie: Making Spaces Talk / Narrative Raume / Projekte 2002 – 2010 (Ludwigsburg: avedition GmbH, 2011), p.12.

[133] Ibid, p. 12.

[134] Forrest, R. (2015), *Design Factors in the Museum Visitor Experience*. (Doctoral dissertation, University of Queensland, Brisbane, Australia), pp. 150-151.

developed a Perceived Atmosphere Instrument basing off the theories of spatial perception, in fact, she is one of the researchers in the museum field who has drawn from the methods used in retail design. Kotler[135] identified two different atmospheres: intended and perceived. The intended atmosphere is what designers planned to communicate with the spatial design and perceived atmosphere is how audiences understand and feel it. Forrest was interested in measuring of how a designed atmosphere is perceived by spectators, users, or museum visitors in the case of museum research. During her candidature at the Queensland University, she conducted a study at the South Australian Museum in which she collected quantitative and qualitative data using visitor questionnaires. Forrest then quantified and analyzed visitor experience of exhibitions using statistical methods. From the raw data of 602 interviews with the participants, Forrest has screened the variables from the raw data with the Bartlett's Test of Sphericity[136] which showed correlations between the parameters to be examined. The four factors were chosen through the application of Principal Axis Factoring[137], which helps to identify the least number of factors representing the correlation of latent variances, and then the scree test criterion[138], which is applied to reduce the variables of factors to only three to five of them. After identifying the main correlating factors emerging from raw data, the Varimax orthogonal rotation[139] was applied to produce the most clear separation of factors: vibrancy, spatiality, order and theatricality. For each of the factors, Forrest chose adjectives which visitors could relate to when describing the environment:

> "**Factor 1: Vibrancy** ➔ *Dramatic, Active, Vibrant, Striking, Dynamic, Colorful, Energetic, Three Dimensional*
> **Factor 2: Spatiality** ➔ *Wide, Spacious, Open, Uncluttered*
> **Factor 3: Theatricality** ➔ *Winding, Modern, Asymmetrical, Targeted Lighting, Dark, New*
> **Factor 4: Order** ➔ *Ordered, Organized, Structured, Flowing*"[140]

Forrest tested this tool in her fieldwork collecting 602 visitor responses for the qualitative part of her doctoral research and 12 accompanied visits to collect qualitative data on the factors of exhibition environments. Now in the exhibition design field we are moving to a more profound and complete understanding of

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[135] Kotler, P. (1973). Atmospherics as a marketing tool. *Journal of retailing*, *49* (4), 48-64.

[136] [https://www.statisticshowto.datasciencecentral.com/bartletts-test/]; Ibid, p.150-151.

[137] [https://stats.idre.ucla.edu/spss/output/factor-analysis/]; Ibid, p.150-151.

[138] Forrest, R. (2015), *Design Factors in the Museum Visitor Experience*. (Doctoral dissertation, University of Queensland, Brisbane, Australia), pp. 150-151.

[139] [https://www.statisticshowto.datasciencecentral.com/varimax-rotation-definition/]

[140] Ibid, p. 151.

museum visitors, even so much that the designer side of the coin happens to be underexamined. This Perceived Atmospheres tool is one of the surveys which can help museum professionals to evaluate tangible properties of exhibition spaces which they work with on daily basis trying to meet visitors' expectations. The Perceived atmosphere tools allows to evaluate exhibitions from the visitors' perspective, however, the visitor perspective inquired with the help of self-reflecting survey with questions which ask visitors to describe their experience according to the predetermined set of choices, might not shed light on what it is exactly that visitors are experiencing. Forrest's research identified that visitors use exhibition cues or spatial parameters in order to navigate in the space and also to make meaning of individual objects. Lighting has been proven as an aspect which has a high contribution to the perception of space and how visitors feel in it. The study also revealed that vibrancy (factor 1) and spatiality (factor 2) are factors which are strongly perceived by the visitors and therefore, correspond to high engagement as vibrancy is related to cognitive and affective engagement. In terms While the Perceived Atmospheres tool is an important addition to understanding of how visitors experience the complex exhibition environment which provokes visitors' responses to narrative and space, it might still be more informative to use qualitative data analysis. Qualitative data analysis might use interviews as a method which are retrospective of the experience visitors had, however, might provide more opportunity to describe the details of the experience. Returning to the design practices how they are done and perceived by the creators.

Another aspect which Atelier Brückner considers as a step in the exhibition design development is *content.* "Content", one of the most commonly used terms in our everyday life, is a relatively new idea in the sense of referring to something that is enclosed within something else."[141] The Atelier states compares scenography with the Bauhaus movement and changes their famous quote "form follows function" to "form follows content" in application to the specificity of exhibition design. They see an exhibition as a thing which incepts from museologists and curators, then gets developed by designers and scenographers and is being finalized by the visitors, i.e. recipients. It is interesting that they define particularly designer and scenographer as two positions which play a different role in the exhibition design process. The scenographer is not a separate position in exhibition design unless a theater scenographer is hired to develop an exhibition.

The content is presented in a spatial configuration. The thing (fact or a collection object) which is presented in a context becomes an object of curiosity of the visitor. This process involves a visitor into a "spatial system of

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[141] Christian Barthelmes and Frank den Oudsten (eds.), Scenography/ Szenografie: Making Spaces Talk/ Narrative Raume/ Projekte 2002 – 2010 (Ludwigsburg: avedition GmbH, 2011), p. 60.

reference"[142] – the border crossing which Mortensen identifies as factors which help immersion in exhibitions but she is making this statement not referencing the system developed by the Atelier. This system is supposed to evoke all of the senses of a visitor, and if a visitor accepts the situation, then the two-way process happens:

> "In this field of tension, the content of the things becomes available. It is the relationship between object and subject, between thing and observer, that creates this tension and transforms the content of the things into narrative and plot. Once set in scene, the thing fully unfolds its potential as an object filled with meaning – as an exhibit, in fact. The aura of the things becomes free, accessible and readable and can therefore be experienced. The aura itself becomes a field of force of experience and imagination."[143]

Atelier Brückner makes this statement based on their practice of creating exhibitions and Mortensen[144] makes the same statement in her practice in education in museums. She posits that the *resonance*[145] visitors are those who engage their imagination, i.e. are creating relationships with content and objects. While the *rejection* visitors do not create relationships with what they see, therefore, do not activate imagination and do not build this relationship.

The mention of the experience by means of all the senses refers to being immersed according to the definitions Bitgood, Lankford[146], Hooker and Csikszentmihalyi[147], and Weaver[148]. Therefore, scenography creates immersive environments mainly by taking a visitor inside the narrative. "Storytelling is a communicative technique that conveys explicit and, above all, implicit knowledge in the form of metaphors, gestures and images. The addressee is integrated into a narrated story due to a performative act and himself becomes part of this story and associated narrative process. The content is thus not

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[142] Ibid, p. 61.

[143] Ibid, p. 61.

[144] Mortensen, M. F. (2010). Designing immersion exhibits as border-crossing environments. *Museum Management and Curatorship*, *25* (3), 323-336.

[145] Chapter *Imagination*, p. 60-74.

[146] Lankford, E. L. (2002). Aesthetic experience in constructivist you have to define what constructivism means in your research field museums. *Journal of Aesthetic Education*, *36* (2), 140-153.

[147] Hooker, C., & Csikszentmihalyi, M. (2003). Flow, creativity, and shared leadership. *Shared leadership: Reframing the hows and whys of leadership*, 217-234.

[148] Weaver, S. (2012). *Creating great visitor experiences: a guide for museums, parks, zoos, gardens & libraries*. Left Coast Press.

merely heard but is experienced with all the senses."[149] The scenographical approach described by Brückner is a truly immersive environment in theory, however, when applied to practice can result in a number of diametrically opposite solutions. The following situation in the quote appears as a perfect immersive exhibition but when the questions "how does one design an exhibition in such a compelling way?" and "why does the re-contextualization engage visitors?", it can be found that specifics and empirical research is lacking to support this statement.

> "The scenographer re-contextualises objects by setting their roots, origins, cultural significance, former purpose, societal function and value in scene and conveying all this in a narrational, if possible self-explanatory manner. […] The aura of the objects becomes alive and the distance between the exhibit and the recipient is minimized – the observer acquires an awareness of the exhibit's world."[150]

The problem is in how to exhibit in such a way which allows visitors to explore, self-explain and imagine. It is possible that the research on cognitive processes and mechanics of imagination conducted by Dufresne-Tassè and Mortensen, which will be consider in detail in the chapter *Imagination*[151], can help to answer the questions which raise when examining or trying to follow the Atelier Brückner ideas. At the moment, let us focus on the *self-explanatory* as it can be a key to immersive because if there is too much explanation, the feeling of exploration might be lost. Note that exploration is a factor which means that the content should be presented in such a way that information is not given plainly up-front. An explanation can create an understanding in a visitor that the information (labels, panels) is created by the institution (an expert), thus highlighting the artificial environment (museum) of the objects.

> "The narrative space is not an illustration or decoration of contents. It is a walk-in milieu, the subject for everything that is to be conveyed informatively or emotionally. It enables the visitor to participate and allows him to become part of the created setting. A consistent narrative space looks for and enable

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[149] Scenography / Szenografie: Making Spaces Talk, Projects 2002-2010 Atelier Brückner March 16, 2011 by Atelier Brückner (Author), p. 67.

[150] Ibid, p.67.

[151] Chapter *Imagination*, p. 66-81.

a dialogue between space and content, between artifact and recipient."[152]

Beautifully put together words into pleasantly sounding phrases but how to distinct a decoration from real narrative space which Brückner is describing? The Atelier creates immersive spaces through contextualization. For example, the **"Champagne room"** designed to tell the story of Titanic. The "Champagne Room" is a spatial installation in which a complex message of the Titanic tragedy is communicated with seemingly simple means – color, light and one object, however, the focus on just everyday objects used on the ship instead of lengthy explanatory texts helps visitors to create associations and imagine the situation. The fact that the Titanic story is widely known, permits to use one object in a designed space to evoke associations which create a mental scenario worth 100-200 words of explanatory labels. The blue light means to create a colder atmosphere and a reference to the water, an audio blocks the quietness of the gallery space and helps to imagine being out on a ship. Focusing visitor

> "The extremely bright light eliminates the dimensions of the space which this becomes a diametrical reflection of where the objects were found, namely a cold dark place, hostile to life, deep in the west Atlantic Ocean. At the same time, the room denotes the "beyond" and serves as a metaphor for death as a class-less event. The subliminal bass note is a reminder of the unimaginable water pressure at a depth of four kilometers and of the vulnerability of the gigantic machine that the supposedly unsinkable ship was. The compacted nature of the created setting is what generates the aura and makes it "speak".[153]

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[152] Christian Barthelmes and Frank den Oudsten (eds.), Scenography/ Szenografie: Making Spaces Talk/ Narrative Raume/ Projekte 2002 – 2010 (Ludwigsburg: avedition GmbH, 2011), p. 69.

[153] Ibid, p, 72.

Illustration 5. "Champagne Room", exhibition "Expedition Titanic" designed by Atelier Brückner in 1997. From http://www.atelier-brueckner.com/en/projects/expedition-titanic

attention on the everyday objects used by the people who took were on the tends to evoke powerful effect of contemplation. Objects that are nothing special in daily experiences but which become filled with meaning, nostalgia or mourning when the human life abrupts. This coherence and consistency which

> "When intuition and intellect pursue the same goals and the methodical use of dramaturgical principles determines the design process, when the choice of means is coherent and their application is consistent, a conception is on the right track to achieve a surprising, memorable scenography."[154]

Brückner is describing, in practice is reached with thinking about the space one designs as a composition in which there is harmony in the relationship between displayed objects and designed space and coherency in overall designed visitor walkthrough.

Atelier Brückner uses a method called "Creative structures" to design an exhibition. It was developed as the Atelier's guidelines which aligns with the philosophy their "form follows content". The method borrows principles of dramaturgy, film, literature, theater and opera[155], which appears as the German

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[154] Ibid, p, 111.

[155] Ibid, p. 72

term *gesamtkunstwerk*[156], however, Brückner does not refer to it directly. The guidelines were developed to help the employers with a single training in something to embrace the multilayered process of exhibit creation. This process has been applied for more than 10 years in the Scenography course and also for research at the University of Applied Sciences (FHNW HGK) in Basel where Uwe R. Brückner teaches.

The work on an exhibition starts like any research project with the research of the exhibition topic, finding relevant information and analyzing texts. After the collection of information, designers start thinking how to present this information in the three-dimensional space – that is where the reference images come in to illustrate the aesthetics and coherency of the whole space which they want to design. At the stage of the development of the themes in the content, it is common to be focusing on finding cross connections. Space is the central medium and it is used as an instrument itself.

Considerations of multiple parameters of space have come into the exhibition practice as well as research on exhibition design since the shift to more experiential exhibitions. The choices of height and length, texture and color – all, indeed, play a prominent role in immersion along with the narrative building and is referred to as atmospherics. As was discussed earlier, the atmospherics imply color, temperature, light, and the feeling which all these factors tend to evoke.

Light and color are essential design tools in the creation of an atmosphere. The black box approach to exhibition design brought a liberation for using light and color more freely and extensively because the need to rely on the interference of the lighting from the windows has disappeared. Since there was no more tie to the light sources and considering the light as a constraining spatial factor for a narrative, it has become possible to plan the content in space in more variations as light sources could be added anywhere where designers would want to make an accent on an object. Ralph Appelbaum Associates famous for the theatricality of their designs prefer to work with black box spaces and often purposefully block the windows in order for the daylight not to interfere with the narrative space of exhibitions.

Blocking any references of our daily experiences with the aid of this black box[157] approach is what tended to be in favor among exhibition designers who wanted to create a fuller feeling of immersion. For example, Atelier Brückner sees black box as an advantage to highlight important things and hide the ones which should not be seen: "The black box suggests the absence of

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[156] translated as "total work of art" and implies that the synthesis of different art forms is creating a unifying whole; Finger, Anke and Danielle Follett (eds.) (2011) *The Aesthetics of the Total Artwork: On Borders and Fragments*, The Johns Hopkins University Press.

[157] Macleod, S. (Ed.). (2005). *Reshaping museum space*. Routledge, p. 26.

physical space in favor of imagined space."[158] Today many museums use the black box approach and, indeed, have the absence of everyday physical spaces and offer entirely new atmospheres, especially natural history and science museums. Blocking of the natural light and generally making the space darker helps to more easily create highlight on any object with the help of artificial light and also place it anywhere in the space according to the designed conceptual and narrative plan of the exhibition. Often times in gallery spaces which have architectural constraints such as windows or walls where artworks cannot be hung, for example, the narrative design is developed within the framework of these constraints and might be not an ideal design for the narrative flow, however, optimal. Black box is basically an empty canvas for exhibition designers. Moreover, the dark space helps digital interpretative elements like screens to come out as more attractive elements and, at the same time, make the hardware elements less visible if parts are exposed. And such museum environments logically seem to perfectly fit under the immersive exhibitions as they transport visitors to a different time and space[159]. Everything takes a special meaning in the dark. Brückner states that the black box "tends towards reduction, silence and introversion."[160] Similarly Mark Wigley highlights the fact that losing senses and references[161] of the everyday experiences and entering in a museum environment which is different from walking in the street, being at work or in the park, helps to immerse into what a museums presents to the audiences.

These views are strongly pointing on the importance of the sensory and spatial factors as effective aspects of immersion. However, the abundance of black box approaches in museums over time produces tolerance to these factors as being the ones which help to immerse and becomes ordinary, it becomes associated with museums being museums rather than museums being places where one can immerse into a new setting. Therefore, connecting immersion so strongly to the particular setting for a design appears to be rather a tribute to the trend which works well until it becomes over used and loses its powerful effect. This is the reason why this research argues that immersion is not a particular approach and prescription to design spaces with certain toolkits but

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[158] Christian Barthelmes and Frank den Oudsten (eds.), Scenography/ Szenografie: Making Spaces Talk/ Narrative Raume/ Projekte 2002 – 2010 (Ludwigsburg: avedition GmbH, 2011), p. 179.

[159] Bitgood, S., Ellingsen, E., & Patterson, D. (1990). Toward an objective description of the visitor immersion experience. *Visitor Behavior*, *5* (2), 11-14.

[160] Ibid, p. 179.

[161] Wigley, M. (2015). The Museum is the Message, Symposium 'Between the Discursive and the Immersive'. 3 – 4 December, 2015. Louisiana Museum of Modern Art in Humlebaek, Denmark. Available at <http://research.louisiana.dk/videos/mark-wigley#.Vyy322M4lZ1>

it rather argues that immersion can be reached in any exhibition where there these factors are considered in design: threshold, iconic experience, suspension and a trigger for associations, predictions and suggestions.

Scenography is important to immersion because it is an approach which uses visual metaphors to evoke a set of visitor responses. For instance, the white cube is an approach which takes away all the senses and helps the visitor to bring all the focus to the artworks and objects exhibited. However, the white cube and scenography as two counter exhibition set-up approaches can be arguable from the standpoint of evoking imagination. While scenography is believed to awaken multiple senses of the visitor and immerse them through the senses into the exhibition topic, the white cube has no less of a potential for creating the sense of immersion and triggering imagination but much more in a way which requires cognitive processing without sensorial stimulus. This argument will be discussed in the chapter *Imagination* when discussing the work published by Dufresne-Tassè and Achiam. It can be said that, in fact, that it is the white cube approach which truly brings one's imagination forth and that scenography only invokes a response to the cultural queues[162]. Matthias Bauer in his work "Immersive Exhibition Design: Titanic Belfast and the Concept of Scenography" describes scenography as "[…] means of escalating the intensity of experience an sustainability of the creation of ideas at the intersection between perception and imagination, emotion and cognition"[163]. He further continues explaining that scenography is "[…] a tool of intellectual appropriation that tend to not only evoke ideas but also reify and materialist them"[164]. An Italian exhibition design company Studio Azzurro[165] has been working with scenographical set ups and with integration of technology to enhance and support the narrative lines of their exhibitions and envelop visitors into that narrative holding their attention.

Threshold

Cinema and theater experiences start with a threshold which sets up the attention of the audience – dimming of the lights, the opening of the curtain in theatre or the introduction and entering credits at the cinema. It sets the audience to prepare for receiving new information and directs the attention to what is to be presented by cutting off the environment in which they are physically located. Then the storyline unfolds on the stage or on the screen, and

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[162] McKinney, J., & Iball, H. (2011). Research Methods in Scenography.

[163] Bauer, M. (2015). Immersive Exhibition Design: Titanic Belfast and the Concept of Scenography. *Studies in Intermediality*, *9*, p. 378.

[164] Ibid, p. 379.

[165] [http://www.studioazzurro.com]; Valentini, V. (ed.) (2017). Studio Azzurro. L'esperienza delle immagini. Mimesis/ Resilienze.

all of audience's attention is shifted to what is shown on the stage or screen. At museums, however, generally there is no such distinct threshold at the entrance to the exhibition which prepares visitors for a storyline. Usually, any type of exhibition, especially art exhibitions, start with the introductory panel of 2-4 paragraphs on the wall, there are no spatial design factors indicating that one enters a space where particular storylines unfold.

There are some examples of exhibition design in which threshold is prominent, for example, a fashion exhibition at the Metropolitan Museum of Art in New York *"Manus x Machine: Fashion in an Age of Technology"* (2016) and *"Hokusai. Hiroshige. Utamaro"* exhibition at the Palazzo Reale in Milan (2017) which is also one of the case-studies for this research project. These are two exhibitions displaying different types of objects – lithographs and costume, but both showing a spatial narrative through the space using design choices and objects of collection as their tools to convey the story to the visitors.

It is important now, before delving into the understanding of a threshold experience, to make a distinction between the thresholds of the above mentioned exhibitions and *Van Gogh Alive* multimedia exhibition and alike created by Grande Exhibitions company[166]. Grand Exhibitions presents *Van Gogh Alive* in a film-like manner meaning that the paintings are set in motion and are projected on the floor and on the large screens which are placed throughout the gallery space. The threshold in this exhibition is very similar to the cinema threshold because from a foyer space a visitor enters a dark space which immediately creates an understanding that something is going to happen, some story is going to be told. The visitors' attention is directed and driven by the artworks set in motion and projected on the screens.

The company uses what they call SENSORY4™, however, from the standpoint of exhibition narration, SENSORY4™ is not a novel approach, because the structure of how the story unfolds in the space is no different from the structures used in more traditional looking exhibitions. The difference is the medium which allows to blow up in size the digitized artworks and literally surround the visitors creating an affect which seems to allow nearly to enter the artwork. The CEO of Grande Exhibitions, Bruce Peterson, pitches their approach in this way:

> "SENSORY4™ is a completely new media platform. It creates an engaging, full-spectrum exhibition environment like no other. It educates and entertains visitors across all demographics, immersing them in the subject matter in a truly unique

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[166] [http://grandeexhibitions.com/van-gogh-alive-the-experience/]; Grande Exhibitions company has developed a multimedia approach which can fit many exhibition galleries which can support the technical requirements for the show.

multisensory environment, unrivaled by any other exhibition experience."[167]

While this approach helps to set artworks in motion and gives the possibility to zoom into the details, it gives little room for providing an in-depth information about the artworks and the life of the painter. This approach can evoke the panoramic effect making visitors feel as if they are in the scene. Van Gogh[168] exhibition to a certain extend have used a cinematic approach where even though the audience is moving through the space, the narrative across the space is unified through synchronized video projection on the large screens situated in the gallery and forming one large canvas with the narrative unfolding throughout the space.

Illustration 6. "Van Gogh Alive" exhibition. From
http://grandeexhibitions.com/van-gogh-alive-the-experience

The *Van Gogh Alive* exhibition is far not the only example of exhibiting artworks in a completely new way – giving them motion, changing the scale and creating new visual narratives with the digitized versions of the paintings. For instance, the exhibition *"Uffizi Virtual Experience. Da Giotto a Caravaggio"*[169] created by MondoMostreSkira[170] can be another example of the re-imagining of the representation and interpretation of the original artworks. In this approach

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[167] [http://grandeexhibitions.com/van-gogh-alive-the-experience/]

[168] Ibid.

[169] "Uffizi Virtual Experience. From Giotto to Caravaggio";
[http://www.caravaggiomilano.it/il-progetto-mostra-caravaggio-milano.html]

[170] [https://www.mondomostreskira.it/]

the artworks become both the atmosphere of the whole exhibition and points of great interest.

Illustration 7. Uffizi Virtual Experience. From Giotto to Caravaggio". From https://www.advertiser.it/2016012241807/aziende/canon-e-digital-imaging-partner-della-mostra-uffizi-virtual-experience-da-giotto-a-caravaggio

Illustration 8. Uffizi Virtual Experience. From Giotto to Caravaggio". From https://www.canon.it/iox/uffizi-virtual-experience.html

Now it is essential to illustrate the threshold experiences from the two exhibitions mentioned above because threshold is a reoccurring theme in this thesis and after will explain how these experiences are distinct from the Van Gogh experience exhibition. The first example is the fashion exhibition *"Manus x Machine: Fashion in an Age of Technology"* at the Metropolitan Museum of Art in New York which showcases how man-made and machine-made productions are merged together in the creation of couture. One hundred and seventy pieces were exhibited across he dedicated for this exhibition gallery spaces. The design of this exhibition made the already fascinating costumes, come alive resonating in the space and communicating. The ways in which objects can relate and communicate will be discussed in the chapter *Space and Narrative in Exhibition Design*, holding the focus on the threshold experience for the moment.

Visitor journey to the exhibition starts through the main busy, loud and very spacious foyer of the museum, then it descends down the stairs which feel a little narrow after an airy foyer. At the bottom of the stairs, the exhibition threshold starts. It is an even more narrow hallway than the staircase, it is also darker but one can see that this hallway leads to a lighter space with something shiny (refer to the image below).

Illustration 9. "Manus x Machine: Fashion in an Age of Technology", the Metropolitan Museum of Art (2016). Photo taken by the researcher

This is an entrance – the threshold to the exhibition, from this point can get a glimps of the haute couture wedding dress designed by Karl Lagerfeld for Chanel. All the visitor can see from this threshold point, however, is an enchanting shiny object

This threshold creates a feeling of curiosity and enchantment, a narrow but high arch corridor invites a visitor to walk closer and closer to the displayed dress. The way the corridor was designed and the placement of the most impressive and attention gaining object of the collection has built up to create a threshold experience of the exhibition. Once arrived to the end of the narrow and directing corridor, a visitor enters a spacious dome area with the dress in the middle. After a walk through the dark corridor with the goal to arrive and discover what it is at the end, it seems as if the time slows down in the area where the dress is displayed. This feeling is evoked by the design of the visitor journey. The narrow corridor presents a visitor with a goal – light at the end and a shiny object, and suggests only one direction to get there, therefore without much thinking, the visitor has a set goal. The opening of the space and creation of air around an impressively crafted object compositionally helps to draw more visitors' attention to the object.

Illustration 10. "Manus x Machine: Fashion in an Age of Technology", the Metropolitan Museum of Art (2016). Designer Karl Lagerfeld. Photo by Slaven Vasic, copyright Getty Images. From https://www.ilpost.it/2016/05/03/manus-x-machina-met/manus-x-machina-1/

In museums narratives unfold over time and space in which visitors move on their own pace, and most of the time there is not just one single narrative but are several or one narrative is divided into layers (topics and sub-topics) of information from broad to more detailed. Often the layered approach to unfold one narrative consists of main exhibition graphic panels in larger

fonts which refer to main ideas presented in the exhibition, and the layer with more detailed information is presented as smaller graphic panels with smaller fonts on the aspects of the topic and the last more detailed layer is usually object labels with information about the artist or dates, materials and location of where an object was made or found.

Therefore, it is vital for museum professionals to collaboratively develop immersive exhibitions to avoid copying the techniques which work in theatre or cinema but need thoughtful adjustments to be effective in museums where visitors are not sedentary but moving through spaces and are free to choose their paths. Visitors in exhibitions are not only engaging cognitively with the content but also physically to a different extend depending on the exhibition[171]. Science exhibitions are usually known for being highly interactive while art exhibitions least physically engaging, however, the element of visitors walking through the space exists in all types of museums. Some exhibitions are designed in such a way that there is only one linear path, other exhibitions can be open floor plan or suggest visitors multiple paths. Making a visual example below will bring more clarity to understanding just a few varieties of exhibitions plans.
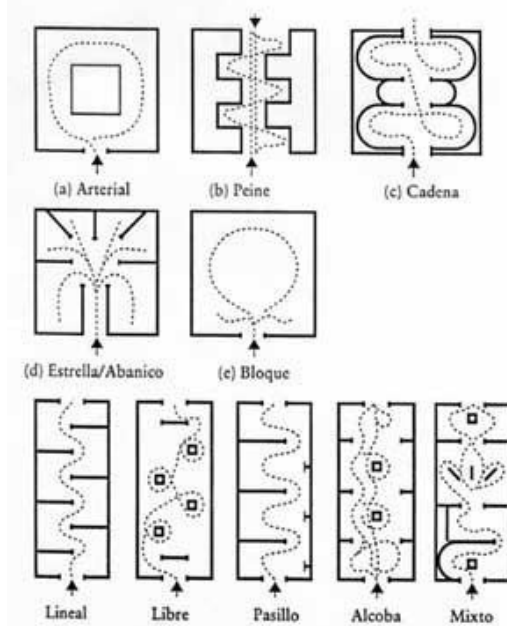
Illustration 11. Examples of visitor flows illustrated by Belcher in 1991. From Belcher, M. (1991). Exhibitions in museums. Burns & Oates

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[171] Gibson, J. J. (1966). *The senses considered as perceptual systems.*

Multimedia & Transmedia

The difference between multimedia and transmedia here will be appropriate to clarify as there will be references to both terms throughout the text. Exhibitions have for a long time been multimedia environments, meaning that the information about the objects and the topic of exhibitions was communicated to the visitors through a variety of different media, however, often museum professionals refer to multimedia exhibitions as those which only use videos. For example, text and graphic design is used for panels, additional information about the objects can be conveyed through digital tools such as QR-codes, interactive panels or augmented reality, the atmosphere of the exhibition is usually transmitted through the parameters which change the space such as lighting design and spatial design. The Cambridge Dictionary gives several definitions of "multimedia":

> Multimedia *(noun)*[172]:
>> the use of a combination of moving and still pictures, sound, music, and words, especially in computers or entertainment
>
> Multimedia *(adjective) in Business English, IT and Communications*[173]:
>> communicating or sharing information in the form of sound, pictures, and video as well as text
>
> Multimedia *(noun) in IT and Communications*[174]:
>> the use of many different types of media to communicate and share information, especially using computers as well as traditional media

Today multimedia is often limitedly referred to only digital aids such as videos and video projections, touch tables and videos on iPads, digital interactives which are the same touch tables with an interface programmed to demand an action to get the information bits on the topic. This is a narrow and superficial way to refer to multimedia, because multimedia in exhibition design is a combination of various media not only digital but also analog. The first definition of "multimedia" should be used by the exhibition stakeholders in order to avoid miscommunication and limit the range of media choice which at the end greatly results the final exhibition look and feel.

Exhibitions can be transmedial combining text, audio, video, props and cross-connect within the designed environment to strengthen the exhibition

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[172] [https://dictionary.cambridge.org/dictionary/english/multimedia]

[173] [https://dictionary.cambridge.org/dictionary/english/multimedia]

[174] [https://dictionary.cambridge.org/dictionary/english/multimedia]

message[175] or can also mean to layout the exhibition content throughout the platforms. An exhibition space can be the main platform where a visitor gets the most comprehensive story, a museum website and social media can be additional platforms which provide additional information about the exhibition subject. Transmedia approach does not apply to immersion as a factor which can increase it in some cases in can become an engaging point of entry to the exhibition topic. In this research, the point of entry is considered as threshold in exhibition design terms. And threshold in exhibitions is liminality in theoretical terms. The way liminality came into this research was through the work of one of Australia's distinguished opera conductors Kevin J. Purcell and his work on transmedia storytelling. Purcell has written his doctoral dissertation at the University of Melbourne on the topic of sound design in musicals in 2005 and in 2015 has published a book called "Transmedia storytelling: relocating the Broadway musical across the digital domain as scalable enterprise"[176]. The title of the book was both fascinating and perplexing as it seemed that entertainment like operas, ballets, performances and exhibitions are transmedial in nature and also have narrative elements.

Jonathan Hill and Gianni Vattimo connect liminality to user experience explaining it is the conceptual and ephermal relationship between people and built environments. It connects to user experience field as it refers to human-centered approach. Usually user experience is referred to as web design and creation of digital experiences such as mobile applications and websites, however, user experience is a large field the core of which is focus on what is the people experience with anything that is designed physically or digitally, it considers a holistic experience of people in engagement with certain services. It includes the aspects of usability not only from the technical and practical sides but also from psychological.

According to Catherine Smith states that the concept of liminality is underconsidered in architectural discourse. It is not recognized in exhibition design at all while it is a central aspect in creating immersive experiences. It is due to the fact that the concept of liminality is difficult to apply in practice. Smith tries to explore how liminality can be used in architecture however without attempting to suggest a definite framework.

Installation art is, perhaps, one of the most illustrative examples that can transmit the idea of liminality. And exhibition design is, in fact, an installation it is though created by designers, not by the artists. Atmospheric experience is central to an installation or scenography, therefore, the design has to fully support these ideas about the ambiance. The ambient context is central in

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[175] Utvich, M. (2004). Write a Story as a Building. Interactive Dramaturgies. In H. Hagebölling. Berlin: Springer-Verlag, p. 231.

[176] Purcell, K. J. (2015). Transmedia storytelling: relocating the Broadway musical across the digital domain as scalable enterprise.

immersive exhibitions because it acts to transport visitors into a different space and time. Ambience becomes the tool which creates a liminal space - a virtual space where visitors are present mentally. This is, however, not possible without the full participation of the viewer. In order for this liminal space to be active, visitor's imagination needs to be activated. The activation happens when visitors have the three cognitive processes: associating, predicting and suggesting[177].

Liminality has not appeared in the literature analysis for this research within the field of museum and exhibition design, neither did the threshold. The threshold is an aspect of exhibition design which is brought up as part of exhibition structuring within the exhibition design curricula[178]Liminality, however, during the literature research on theories which related to the foundations of immersive exhibition structuring, liminality was found in Purcell's work in relation to transmedia and opera set designs. However, the concept of liminality, even though a complex one and is originally identified in anthropology, it also translates to built environments and experience of them. Liminality in exhibition design practice is threshold, a threshold which has to be carefully and thoughtfully designed in order to act as a point of entry into a different mood or mindset for visitors. An introductory section with an introductory panel cannot be considered a deliberately designed threshold experience. Then liminality in visitor experience is the activation of their imagination which allows visitors to immerse cognitively into the worlds or contexts presented in the exhibition. Cognitive processes related to sparking visitor imagination are examined in the next chapter.

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[177] Chapter *Imagination*, p. 66-81.

[178] Exhibition design curricula for the MFA course "Exhibition Planning & Design" at the University of the Arts in Philadelphia, USA.

IMAGINATION

Only a few authors have focused on the aspects of visitor imagination in museums. One of them is Bitgood mentioned earlier in the text and who published his most cited and known research on design in museums and particularly on the factors of immersion in design and education. Much less noticed research within the museum field, is the one of the Canadian visitor studies researcher Dufresne-Tassè[179]. She has decoded and brought imagination from an intangible concept to a concrete concept which could be applied in the exhibition design field. Dufresne-Tassè has demonstrated that imagination is related to several cognitive ways of how people perceive information. This research provides design practitioners with solid arguments to reason about their design choices and about how exactly their choices might engage visitors into the exhibition's content, however, practitioners appeared to be unfamiliar with this research.

Denmark-based researcher Marianne Mortensen has picked up Dufresne-Tassè's study and applied the analytical framework to visitor learning in science exhibitions[180]. An American museum researcher and consultant Leslie Bedford[181] also mentioned imagination in her 2014 book *"The Art of Museum Exhibitions: How Story and Imagination Create Aesthetic Experiences"*[182] but as a learning parameter in museum visits. She was basing her arguments off the work of Canadian scholar Kieran Egan who has founded Imaginative Education[183]. Imaginative Education is a philosophy and it takes the ability to think about the possible[184] as the main factor in effective learning. Thinking about the possible means creating different scenarios and new situations. This is exactly what Mortensen pointed out in her study by applying the analytical framework of Dufresne-Tassè to museums. We will look more closely at the details of Mortensen's and Dufresne-Tassè's research

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[179] Dufresne-Tassé, Colette et al. (2006). "L'imagination comme force dynamisante du traitement des objets muséaux par des visiteurs occasionnels." In Colette Dufresne-Tassé (ed.). Families, Schoolchildren and Seniors at the Museum. Research and Trends. Québec: Éditions MultiMondes, 160–176.

[180] Mortensen publishes under the last name Achiam in her latest publications.

[181] Bedford, L. (2004). Working in the subjunctive mood: Imagination and museums. *Curator: The Museum Journal*, 47 (1), 5-11.

[182] Bedford, L. (2016). *The Art of Museum Exhibitions: How story and imagination create aesthetic experiences*. Routledge.

[183] Centre for Imagination in Research, Culture and Education (CIRCE). Retrieved from [http://ierg.ca/]

[184] Egan, K. (1997). *The educated mind: How cognitive tools shape our understanding*. University of Chicago Press.

in the following paragraphs as they are the only empirical studies which exhibition design could draw from now. Bedford's study is valid and is based on the education theory of using imagination for learning, precisely using narrativity, metaphor and embodied experiences, but her findings generally fit the concept of immersive exhibitions in this study while Mortensen's and Dufresne-Tassè's contribute more precisely to the techniques which designers can use and keep developing.

As it appears there has been lack of research up to today on how visitor imagination works particularly in relation to exhibition design practices in museums. In the meantime, design practitioners in the presentations of their projects at the conferences have been referring to designed exhibition environments which stimulate visitors to enter the imagined worlds. However, those projects are based on professional experience and hypothesis, reliability on the trends in cultural consumption and perception and rather lack thorough research inquiries in the field of exhibition design. Over the course of the interviews with design practitioners conducted for this research, it has been noticed that practitioners are simply not familiar with scientific literature on the constructs of imagination. That is a normal and an understandable situation that professionals lack time or resources to do extra research in addition to the research on their projects. And that is the reason why this thesis is timely and necessary – it brings to light specific knowledge on how imagination can be approached in museums and allows design professionals to use it in their practice. For the improvement of the exhibition design research in the future, it would be essential to consider the promotion of topics which examine contemporary exhibition design processes in alignment with theoretical research to cross-verify inquiries from the disciplines of design, museology, psychology, neuroscience and sociology with the practice. Research into current state of the art rather than retrospective research would also be irreplaceable as it would document design thought and processes are they are, not by means of archival research, but by means of a researcher as the collector of information from the practicing professionals.

Of particular interest for this research are two articles by Mortensen: one from 2010 *"Designing immersion exhibits as border-crossing environments"* in Museum Management and Curatorship and another one from 2016 *"The Role of the Imagination in the Museum Visits"* in Nordisk Museologi. The article from 2010 on immersion as border-crossing environments has more of an educational stance while the article from 2016 applies the research of Dufresne-Tassè into the exhibition context. Since this chapter is about imagination in museums, I will start with the 2016 article on imagination to then explain how it is connected to the immersion the author was talking about in the 2010 article.

In this paper Marianne Achiam[185] discusses a framework for observing and describing the influence of imagination in museums. She also suggests that the design plays a role on the imagination and offers some perspectives on implications of the discussed framework. Achiam looks at imagination as a capacity and a tool which helps visitors to create mental representations of something drawing from one of the imagination states noted by Gendler (2013)[186] – "imagination and mental imagery". The article presented an analytical framework which Achiam borrowed from Dufresne-Tassè and adapted it for studying imagination in museums. She ran the testing with six people in the dioramas and discovery rooms to trace how, according to this framework, imagination guides visitor choices and engagement in museums. The participant sample appears to be low to be valid and generalized and further considerations of the application of Dufresne-Tassè's method are necessary to prove the concept. However, this research considers the study as an important step in applying the framework to museums.

Dufresne-Tassè's analytical framework adapted for museums

While from the beginning of the 1920s Arnheim and later Gombrich brought the foundational contribution to the theories of perception arguing about its mechanics of visual perception, few decades later in 1958 Beneker[187] published an article which states that exhibitions can spark the imagination of visitors ("fire the imagination")[188]. This work contributed to knowledge on the design techniques – the topic which is still scarsly unorganized in relation to the concept of immersion in exhibition design – rather on the psychology of perception which has been studies thoroughly by philosophers, psychologists, art theorists and historians. Imagination comes through research in the exhibition design field as a thin thread and one of the researchers to take it further is Achiam suggests that the design plays a role on the imagination and offers some perspectives on implications of the discussed by Dufresne-Tassè framework.

First, let us have a look at the definition of imagination which she Achiam uses:

"[...] the capacity of visitors to evoke or represent something that

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[185] Achiam, M. F. (2016). The role of the imagination in museum visits. *Nordisk Museologi*, (1), p. 89.

[186] Gendler, T. (2013). Imagination. The Stanford Encyclopedia of Philosophy. https://plato.stanford.edu/archives/fall2013/entries/imagination/

[187] Beneker, K. (1958). Exhibits—Firing Platforms for the Imagination. *Curator: The Museum Journal*, *1*(4), 76-81.

[188] Beneker, K. (1958). Exhibits—Firing Platforms for the Imagination. *Curator: The Museum Journal*, *1* (4), 76-81.

is not with them in the exhibition, but that may be from the past, exist contemporaneously with the visit, be from the future, be potential or even virtual."[189]

The constructivist approach by Falk and Dierking[190] and, perhaps, other researchers in the museum field, have promoted much emphasis on the fact that there is individual meaning-making[191]. In the history of engaging the imagination, there were two main periods that can be traced: meaning-making through looking at objects, then in the 20th century - meaning-making through viewing objects in relation to an individual "object based *discourse*"[192]. The latter situation points on fictive situations generated by visitors during their exploration of exhibitions.

Achiam posits that imagination is new knowledge because people construct fictive situations based on what they observe, read – they add new situations mentally or virtually to what is present. She brings up a distinction with memory, which is useful to mention here. Memory is a process of imagining something that has happened in the past while imagination, in relation to museum environments where visitors are presented with narrative spaces, refers to virtually reconstructing situations which have never or will never take place. This refers exactly to the definition of imagination shaped by Achiam and mentioned above.

When designers create interpretative environments, whether they are immersive or not, they use metaphors to engage visitors into the process of recognizing those visual metaphors and imagining the situations with this visual aid. This research aims to answer the question - what are the concrete factors which help to create immersive exhibitions? The cognitive processes which use imagination have become an essential part of recipe which designers can use in their practice. The concept "narrative space" and "scenography" have become too vague at this point of the development of the exhibition design field and it is necessary to merge design-creation techniques with empirical research.

Now after the explanation of what concept of imagination Achiam has worked with, it is the time to refer to the analytical framework of Dufresne-Tassè. She has identified 14 kinds of mental operations, five utilize only

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[189] Achiam, M. F. (2016). The role of the imagination in museum visits. *Nordisk Museologi*, (1), 92.

[190] Falk, J. H., & Dierking, L. D. (2018). *Learning from museums*. Rowman & Littlefield.

[191] Ingold, T. (2013). *Making: Anthropology, archaeology, art and architecture*. Routledge.

[192] Achiam, M.F. (2016). The role of the imagination in museum visits. *Nordisk Museologi*, (1), 90.

cognitive or affective aspects, only three of them require imagination, and six of which require the use of both the imagination and cognitive aspects[193].

1st family of mental operations (only cognitive):
Exclaim, observe, identify, verify, judge

2nd family of mental operations (require imagination):
Associate, predict, suggest

3d family of mental operations (possible without the use of imagination but can also be using imagination):
Justify-explain, resolve, compare, grasp, clarify, modify

Effect of imagination in a museum has a holding power, e.g. makes visitors stay longer because of "enrichment of semantic universe created by the visitor around the object"[194], states Achiam. The components of imagination can be divided into reproductive and creative. Reproductive component is used to integrate what is seen in the exhibition by the visitor, for example, make associations or comparisons - using imagination to link what is seen with what visitors already know[195]. Creative component is activated for deepening, structuring and enriching of the meaning of what is seen. For example, to predict, suggest, justify-explain, resolve, grasp, clarify, modify - these are actions create mental scenarios. These categories are handy both for exhibition text writing and analysis of designed exhibits. Based on the three families of mental operations, it is possible to test what kind of questions spectators raise when viewing the exhibit or reading an exhibition text to identify whether viewers use one of three mental operations solely related to the activation of imagination.

According to Achiam imagination builds a relationship between what a visitor sees and the background information about the content using the reproductive imagination, i.e. associating or comparing what is presented to them with their knowledge and experience. Such idea is emerging from the existing knowledge on the perception of information and specifically mentioned by Gombrich[196] influence of past experience on the perceived,

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[193] Dufresne-Tassè, C., & Lefebvre, A. (1994). The museum in adult education: A psychological study of visitor reactions. *International review of education*, *40* (6), 469-484.

[194] Achiam, M. F. (2016). The role of the imagination in museum visits. *Nordisk Museologi*, (1), 94.

[195] Gombrich, E. H. (1982). *The image and the eye: Further studies in the psychology of pictorial representation* (pp. 40-62). Oxford: Phaidon; Mitrović, B. (2013). Visuality after Gombrich: the innocence of the eye and modern research in the philosophy and psychology of perception. *Zeitschrift für Kunstgeschichte*, *76*(H. 1), 71-89.

[196] Ibid.

"correlation between the optical word and the visual the world of our visual experience"[197]. The creative imagination allows visitors to have further investigation through the actions of modifying, for example. It is essential to mention that this framework developed by Dufresne-Tassè lays within the constructivist epistemology perspective on learning, the main position of which is that people create meaning-making according to their past experiences and knowledge. Imagination as an active component of perceiving information which can positively affect visitors' experience in museum settings is engaging with the content actively rather than passively using only the 1st family identified by Dufresne-Tassè. This aligns with primary hypothesis of this research that imagination is the driver helping visitors to imagine new scenarios instead of consuming information through the actions of exclaiming, judging, identifying, verifying. These findings help us understand the conclusions made in exhibition design practice and mentioned by Brückner that giving visitors space to imagine, i.e. use associations and predictions, will help visitors to immerse: "leave enough latitude for perception and the observer's own interpretation are among the doubtlessly most exciting and lastingly immersive narrative spaces."[198]

Achiam states that imagination is "[…] a kind of meaning making "engine" because it drives the initial reproductive establishment of the relationship between the object and the visitor by synthesizing a conscious conception of what is seen, and the subsequent creative mobilization of the person's background beliefs, memories, and expectations in order to create what is not seen. Taken together, the notions of imagination and constructivism thus explain how museum visitors' various repertoires influence their processes of meaning making in exhibitions."[199] However useful it might sound that the interpretation developed by the museum team and design professionals is processed by visitors to various extends, repertoires are difficult to observe because those are unconscious decisions of visitors and, therefore, empirically they are challenging to be traced. Before having used the analytical framework of Dufresne-Tassè, Achiam six years prior to that has published a paper focusing on science museum designs in which form and content as strongly aligned. She suggested the examination of an educational theory which specifically uses the notion of border-crossing in order to create immersion. A hypothetical exhibition was used for the purposes of demonstrating the application of this education theory.

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[197] Quote in Mitchell, M. (1993). Situational interest: Its multifaceted structure in the secondary school mathematics classroom. *Journal of Educational Psychology, 85,* 424–436, p. 73; Ingold, T. (2013). *Making: Anthropology, archaeology, art and architecture.* Routledge.

[198] Scenography / Szenografie: Making Spaces Talk, Projects 2002-2010 Atelier Brückner March 16, 2011 by Atelier Brückner (Author), p. 201.

[199] Ibid, pp. 94-95.

Mortensen's[200] idea is that immersive exhibitions are constructed interpretations through the means of concept and form. These interpretations form a system of symbols which is perceived by visitors according to their prior knowledge, which fits the constructivist epistemology under which also the work of Dufresne-Tassè fits. Mortensen refers to these systems of symbols as *microcultures* and *border-crossing* to visitors' ability to easily be immersed into the exhibition environment. Those visitors who make a smooth transition into the world of an exhibition are called *resonance visitors*. *Distance* or *rejection visitors* are those who have a traditional or *conservative* view according to Mortensen. She highlights that immersive exhibitions are systems of symbols rich with meanings, i.e. *microcultures*, and those *microcultures* require a certain level of visitor engagement in order to decode the symbols and create meanings to then be immersed. This certain level of interaction she is talking about in the paper was finally reflected in her 2016 paper based of the analytical framework of Dufresne-Tassè and discussed above. It illustrates which cognitive processes correlate with the use of imagination and, moreover, how they can be studied empirically.

Nevertheless, Mortensen tried to understand what makes exhibitions immersive using the concepts and data which she had available at that time. Moving on, one of the aspects which she highlighted is content + form. In the exhibition design terminology, it can refer to narrative and space which have been discussed in the previous chapter. What is interesting to trace here as a parallel is that very similar and, perhaps, same ideas are being investigated in the exhibition design research and practice, however, they have not been profoundly combined together. Mortensen puts forward her understanding of immersive exhibitions as *microcultures*[201] and that the notion of border-crossing is necessary to be engaged in order for the visitors to have the effects of immersion.

Mortensen brings up the fact that the roots of immersive exhibitions are in diorama because they are referencing the real-world environment. Unlike the taxonomy, which is not considered immersive because the audience cannot understand what they are looking at, dioramas are considered immersive because they put objects into the context. Scheersoi's article on the holding power of dioramas[202], based on the case studies at three natural history museums in Germany, suggests that dioramas attract attention and therefore jolt visitors to opening and receiving new knowledge. However, dioramas

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[200] Mortensen publishes under the last name Achiam in her latest publications.

[201] Sewell Jr, W. H. (2005). *Logics of history: Social theory and social transformation*. University of Chicago Press.

[202] Scheersoi, A. (2015). Catching the visitor's interest. In *Natural History Dioramas* (pp. 145-159). Springer, Dordrecht.

spark situational interest[203] meaning that they activate visitors' attention if the dioramas are relevant their interests, to their experiences and immediate emotional feedback. The context makes it accessible for understanding due to the ability to illustrate connections by placing objects into the environment and giving the visitors more clues, it also creates and element of familiarity.

> "The diorama exhibit is thus based on an analogy where the exhibited objects form an image that resembles a given reference world - the real environment. In contrast to earlier exhibit forms, where collections of objects were displayed according to a system such as taxonomy, and thus intellectually accessible only to scholars who understood the system, dioramas attempt to build upon commonly shared and recognizable references to situate the visitors in known and familiar territory."[204]

Contemporary large-scale and 180 or 360 degrees video projections incept from the 18th century dioramas which with its illusion effects keep holding spectators' interest in this form of presentation[205]. The first dioramas in Paris were made as a set of narrative paintings[206] on semi-transparent canvases which moved and were accompanied with the lights and music. This film effect has caught audience' attention and the same technique is used today, however, in a digital form – the effect and the idea have remained the same, it is the technology of creating such effect which has changed. Due to the high and maintained over three centuries public interest in this medium, immersion is often referred to have the inception only in dioramas and is, therefore, limited to large-scale projections as a tool which created immersion in exhibitions. However, while this widely spread opinion that immersion in museums starts from the inception of dioramas is quite common in research as well as positing that the history of immersion initiated from Lascaux caves[207], this research focuses on the foundational and structural factors of immersion in exhibition design today

[203] Mitchell, M. (1993). Situational interest: Its multifaceted structure in the secondary school mathematics classroom. *Journal of Educational Psychology, 85,* 424–436.

[204] Marandino, M., Oliveira, A. D., & Mortensen, M. F. (2009). Discussing biodiversity in dioramas: A powerful tool to museum education. *ICOM Natural History Committee Newsletter*, *29*, 30-36.

[205] Huhtamo, E. (2013). *Illusions in motion: media archaeology of the moving panorama and related spectacles*. MIT Press; Oettermann, S., & Schneider, D. L. (1997). *The panorama: history of a mass medium* (Vol. 2, pp. 22-32). New York: Zone Books.

[206] Daguerre, L-J. M. (1969). An Historical and Descriptive Account of the Daguerreotype and the Diorama. Facsimile of London: Nutt, Bookseller, Fleet Street, 1839. Reprinted New York: Kraus; Gernsheim, H., Gernsheim, A. (1968). L.J.M. Daguerre: The History of the Diorama and the Daguerreotype. New York: Dover Publications, Inc.

[207] Griffiths, A. (2008). *Shivers down your spine: Cinema, museums, and the immersive view*. Columbia University Press.

rather than techniques or mediums – tools - which visualize the immersive structure. For example, the structure of the book can have the foundational elements which create the sense of immersion because of the way hot repetitions or culmination is designed. And the words can be seen as tools which help the reader visualize the narrative. These tools are of importance, however, for this research it is essential to understand the mechanisms behind the tools of immersion in the exhibition design in the first decades of the 21st century.

Mortensen posits that immersion starts from including the visitor into the displayed objects, e.g. when a visitor becomes a participant rather than a spectator. We could even imagine a visitor who is cognitively an active spectator. Inclusion or invitation of visitors into display has happened due to the change in representation in museums and competition of museums with other entertainment industries or institutions[208]. The focus on experiences and building off the understanding from the previous knowledge started to prevail over the passive observation. There are three models which are identified to being immersed: reconstruction, creation and interpretation[209].

Reconstruction "refers to an existing world and reproduces it within the museum in the most authentic way possible"[210].
Examples: nature dioramas, urban environment as a context for objects.

Creation "is based on the principle of metaphor. The reference world has no reality but is created in the exhibit; the logic governing a creation-type exhibit is thus generated by the exhibit itself"[211].
Examples: "sensory tunnel" in order for visitors to experience their all senses.

Interpretation "refers to a world which exists or has existed, but is not reproduced in an authentic way"[212].
Example: scaled human body - logic of the existing reference world which is interpreted into an analogical way.

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[208] Pine, B. J., & Gilmore, J. (1999). The Experience Economy (Boston: Harvard Business School Press).

[209] Belaën, F. (2003, October). L'analyse de l'apparition d'un nouveau genre culturel dans les musées des sciences: les expositions d'immersion. In *CIFSIC Bucarest 2003*.

[210] Mortensen, M. F. (2010). Designing immersion exhibits as border-crossing environments. *Museum Management and Curatorship*, *25* (3), 323-336.

[211] Ibid.

[212] Mortensen, M. F. (2010). Designing immersion exhibits as border-crossing environments. *Museum Management and Curatorship*, *25* (3), 323-336.

Mortensen notices that interpretation is applied when the content which is exhibited is not possible to show in human-scale or is abstract. The development of interpretation is an indicative symbolic relationship with the real world. Basically, all the listed types of immersive exhibitions are systems of symbols and meanings which have been created by the design team in order to illustrate a concept, situation or a set of facts. In the framework of this research, it is right to both agree and disagree with Mortensen. In fact, interpretation is not different from creation as creation is one-way interpretation.

While this research looks at the structure and mechanisms behind the immersive narrative, independently of whether the narrative is communicated through the tools of diorama, digital technologies, only text or only objects, it nevertheless, is important to note that Mortensen brings up three examples of immersive exhibitions which, in the scope of this research are identified as approaches to communicating content rather than immersive tools: ambiance, participation when visitor takes up on a role, and virtual reality. If an immersive narrative structure is applied to all three of these kinds, the exhibition should be immersive, but if the narrative of an exhibition is not coherent, does not have a moment of surprise, resolution and an "iconic" experience, it might just be a virtual reality experience, a role-playing experience and a nice environment. Mortensen, however, falls back onto the definition of immersive exhibition by Bitgood which was drawn in the introduction of this research as the most relevant to the examination of the immersive structure: "Immersion exhibits mediate their message by creating the illusion of a time and place, and by integrating the visitor in this illusion."[213]

There are two types of visitors identified in Mortensen's research based on how they use their imagination. *Resonance* visitors are those who use their imagination to a high degree and *rejection*[214] and *distance* visitors are those who fail or reject to use their imagination which constitutes 30-40% of all visitors according to Dufresne-Tassè's study. Visitors for whom immersion does not work belong to the rejection category because they do not grasp the meanings of an exhibition form. Mortensen explains that visitors should also be able to accept the immersion, and rather accept the interpretation in order to really put aside the current reality and step into the world suggested by the museum designers, whether it is a diorama or an ambient space or analogical representation. The level and extend to which visitors engage with the meaning of the exhibition content and environment depends on whether they accept what is presented to them, whether they are willing to take a certain role in the

[213] Bitgood, S., Ellingsen, E., & Patterson, D. (1990). Toward an objective description of the visitor immersion experience. *Visitor Behavior*, 5 *(2)*, 11-14.

[214] According to Phelan, Davidson and Cao (1991) rejection visitors are experiencing immersive exhibitions just superficially without engaging with its content; they usually do not feel comfortable in the environments where norms are in opposition to what their life experience is.

proposed exhibition experience according to Belaën[215].

> "It follows that the extent to which the visitor understands the meaning and message depends on whether they recognize and accept the represented world and the role given to them. This undertaking requires a certain suspension of reality, and not all museum visitors are willing and/or able to do this. Common reactions to immersion exhibits range from 'resonance', where visitors willingly surrender themselves to the immersion principle, to 'distance', where the visitor considers the exhibit form to be disproportionate to its content, and finally to 'rejection', where the visitor figuratively and sometimes literally fails to enter the immersion environment."[216]

Visitors' intention to accept the queues which help them to reach immersion in exhibition topics and environments, according to Mortensen, are also related to border-crossing[217]. Border-crossing in general terms relates to helping visitors to connect with the exhibition content through interpretation which is familiar, which relates to everyday issues. Cultural border-crossing phenomenon or what I would refer to refer to as *meaning-making* in this research is an explanation of why or how people make meaning of an interpretation based on their cultural background. Symbols create a representation and, therefore, a reference to the everyday world. The *microculture*, which Mortensen refers to, is form and content - the system of symbols or interpretation which translates content through visual or textual forms.

> "When a person employs symbols in cultural practice, that person may be expected to accomplish a certain goal because the symbols carry certain meanings. These meanings are defined by the relationship between the symbols in question and other cultural symbols - the system."[218]

Mortensen further argues why she considers exhibition as a microculture:
"Viewing immersion exhibits as microcultures affords a holistic and intuitive appreciation of the museum visitor's experiences which considers both content

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[215] Belaën, F. (2003, October). L'analyse de l'apparition d'un nouveau genre culturel dans les musées des sciences: les expositions d'immersion. In *CIFSIC Bucarest 2003*.

[216] Ibid, pp. 326-327.

[217] Originally presented by Aikenhead in science education. Aikenhead, G. S. (1996). Science education: Border crossing into the subculture of science.

[218] Sewell Jr, W. H. (2005). *Logics of history: Social theory and social transformation*. University of Chicago Press, p. 85.

and form."[219] These microcultures in exhibition design are referred to as "exhibition narrative" – a skeleton which holds together the exhibition concept with all the exhibition topics and sub-topics illustrated through text, visual aids such as exhibition graphics or three-dimensional installations. Border crossing is referred to not as a physical act but as a mental readiness to explore new, to create links between the exhibition content and life experiences, those visitors who are open to engage have a successful rate of immersion presumably. Also having no expectations and going along with what is suggested can be a factor which allows a visitor to activate that border crossing. The successful crossing can also be related to prior interest in the exhibition topic and thus enhance the experience and alignment with the exhibition.

Building bridges or border-crossing or really making links that are based on familiarity:

"Anchors or founder notions, such as the example of the spring described in the quotation above, may set the stage for the experience to come by providing a frame of reference for the distance visitor that is rooted in their everyday life. [...] Once the initial transition has taken place, i.e. the visitor has accepted the premise of the exhibit form, it is then important for the design to follow through by forming a framework of meaning sufficiently strong and consistent that the visitor's imagination can be constructively supported to clarify and deepen the subject matter in terms that are personally meaningful to them (Dufresne-Tassè et al. 2006)."[220]

This statement appears easy to comprehend, however, difficult to apply in practice and the practical applications of that will be discussed in the chapter *Practitioners on Immersion*[221] which discusses how practitioners work with evoking imagination. The main reflection on this theoretical encounter by the exhibition design practitioners is that it all boils down to working with subtlety with the techniques and tools such as details, light, composition, and harmony.

Comments on Mortensen's tips for creating immersion

Mortensen used education theory and namely the notion of cultural border crossing to analyze design guidelines for immersive exhibitions. The list of the exhibition tips from her research and our comments and additions:

1. Symbols have to be easily recognizable by the visitor in order to

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[219] Mortensen, M. F. (2010). Designing immersion exhibits as border-crossing environments. *Museum Management and Curatorship*, *25* (3), p. 327.

[220] Dufresne-Tassè, C., & Lefebvre, A. (1994). The museum in adult education: A psychological study of visitor reactions. *International review of education*, *40* (6), 469-484.

[221] Chapter *Practitioners on Immersion*, pp. 108-125.

decode it quickly (i.e. introduction panel, titles)

Comment: this proves to be true especially when symbols are used to create context for the story or as a backdrop for objects. "Easily recognizable" does not mean trivial, in-the-face or literally a set of symbols which are associated with the exhibition content. Those symbols can be subtle and refer to evoking a feeling through light, texture and color, for example.

2. Recognizing the scale. For example, a large-scale prop of the bug which is crawling on its legs to resonate with the younger audiences aged 5-15 years old because they see bugs as large crawling creatures with huge legs.

Comment: the scale is also important as part of composition, rhythm and creating an impact on a visitor in a certain way. For example, placing the objects of a collection in a way help visitors to understand the grand size of the building where the architectural details are from. This example is from an exhibition design of Riveaulx Abbey Museum (UK) by All Things Studio where they used the original heights at which the architectural details were positioned as the only context and reference for these archeological pieces. There was no recreation with the help of video, virtual reality or built pieces.

Illustration 12. Example of working with scale and context. Riveaulx Abbey Museum, design by All Things Studio. From https://www.allthings.is/rievaulx

Illustration 13. Example of working with scale and context. Riveaulx Abbey Museum, design by All Things Studio. From https://www.allthings.is/rievaulx

3. Challenging title of the exhibition (often in a form of a question in order to relate to familiar concepts and engage audiences into answering a question and, therefore, creating scenarios)

Comment: The title does not affect immersion; but it can attract their attention to thinking about the topic in a certain way and, therefore, start using imagination about what the exhibition might present.

4. "[...] design should have a depth that acts as an imaginative space for the visitor to constructively explore their conceptions of the subject matter"

Comment: This could be an essential tip for exhibition designers, however, it does not explain what exactly the "depth" is and what kind of "imaginative space" it could be.

5. Interpretation should be done in a guided-tour manner in order to connect people to the content through the lens of their everyday life - *Comment:* This appears to suit approaching label writing and structuring of the content throughout an exhibition.

6. Design coming into the visitors' pathway rather than being at a distance suggesting that this is part of the museum display which cannot be touched (for example, a spider web)

Comment: This tip relates to the sensorial aspects which are prescribed to immersive exhibitions. In case science and natural history museums, this tip is valid due to emphasized learning. However, sensorial aspects are not necessary for exhibitions to be immersive.

7. Exhibit should have a tableau (i.e. infographics) about the types of animals in order to create an entrance point for the rejection visitors or those who are just not familiar with the topic

Comment: Infographics is just one way of creating an entry point – laying out the information on a timeline or a graph which helps visitors visualize the information in different ratios whether it be time or quantity. However, infographics is rather applicable when we talk about interpretation. What are the entry points for rejection visitors in terms of spatial narration rather than interpretation? This question can only be answered on a case by case basis as it will depend on variables such as how to best design and communicate the threshold into the exhibition topic and its following spatial experience.

8. Video screens with depictions of animals corresponding to that infographics (for example, milking a cow and ant 'milking' an aphid) in order to build a bridge between the rejection time through common analogies

Comment: in this tip it is unclear why the video screen is chosen as a tool for communicating this particular message. While the theoretical background of Mortensen's research appears to be worth the investigation, the practical applications suggested based on this research seem to lead to evoking the same issues which designers are faced with today – they were given a set of guidelines which they apply in each project, but each project is different from the standpoint of content, gallery space, location of the museum and, therefore, needs customized approach.

9. Ideally, all the exhibited objects should coherently support the representation in order to facilitate the immersion of the visitor.

Comment: an important comment for the scope of this research, because creating a coherent interpretation or representation is part of designing of the composition of an exhibition. Composition and rhythm[222] are one of the crucial details to initiate immersion on a structural level.

There is no particular mention of audio stimulus in this article on immersive elements in exhibitions which can also be considered as a factor which triggers immersion, however, audio is an aid and it can add to the immersive structure – threshold, iconic experience, scale, rhythm, and harmony. Audio can potentially be the founding element of an immersive exhibition but only in the case if it either enhances the main narrative as in the case of the Tate Sensorium[223], the interpretational experiment in 2015 at Tate Modern, or if it is a narrative itself and includes the aforementioned structural

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[222] Appendix, *Interview with Juri Nishi*, pp. 139-150; Den Oudsten, F. (2016). *Space. time. narrative: the exhibition as post-spectacular stage*. Routledge, p. 170.

[223] Tate Modern. Tate Sensorium (2015). Retrieved from https://www.tate.org.uk/whats-on/tate-britain/display/ik-prize-2015-tate-sensorium

elements of immersion, i.e. threshold, iconic experience, scale, rhythm, and harmony, from the standpoint of sound as a spatial narrative.

These two studies – Achiam's adapting Dufresne-Tassè's framework to museum learning – were found to be the only studies which tackle imagination from a technical point of view, that is to say how it works cognitively. In the future, it would be beneficial to find more studies which are relevant to imagination as a response to built environments, to narrative spaces which could be contributory to the understanding of immersion and the idea of threshold as a liminal space in exhibitions.

PROBLEM

The first identified issue is scarcity of literature on the foundations of building immersion in exhibition design which this research aims at improving by providing an analyses of the exhibition designer practices to shed light on the basics of the structuring of immersive exhibitions and factors which contribute to immersion. As discussed in the literature review, there are studies on measuring immersion, on digital interactives which are believed to be immersive, however, it limits the understanding and consideration of immersion to the development and implementation of digital technologies in museums. And, moreover, repeating this from the Introduction - technology does not equal immersion. This research aims to discuss what immersion in exhibition design is, how it is viewed by the design professionals, how it thought of and constructed. This contributes to the gap in the literature on designing complete immersive exhibitions rather than designing pieces of technology as a goal to make an exhibition immersive.

Another identified issue is that of difficulty of pin pointing of the theories which relate to immersion and could be considered, tested or applied in exhibition design. This research proposes the theory of liminality[224] and the idea of frame. The theory of liminality is difficult to apply to space, however, in exhibition design it corresponds with t*hreshold* as the entry point which designers use to help visitors to immerse in to the exhibition narrative. The idea of frame[225] relates to the framing of the exhibition experience with the help of all those factors which will be identified as contributors to immersion.

This research also aims to bring clarity on how designers and curators can approach thinking about designing experiences around the wording "compelling, exciting, engaging, memorable" which often is used in the exhibition design briefs. This observation comes from the exhibition briefs for some of the UK projects which were examined for the purposes of this research, however, the materials were available only for researcher's examination without the further right to publish and quote those materials. People who write exhibition design briefs are probably exposed to the literature in the field and conferences where new research is disseminated, therefore, they might draw on the most discussed issues and trends as the most desirable final exhibition design solutions. For instance, engagement as an important feature in exhibitions refers to designing learning interactives which are experiences

[224] Sfinteş, A. I. (2012). Rethinking liminality: built form as threshold-space.

[225] Wigley, M. (2015). The Museum is the Message, Symposium 'Between the Discursive and the Immersive'. 3 – 4 December, 2015. Louisiana Museum of Modern Art in Humlebaek, Denmark. Available at http://research.louisiana.dk/videos/mark-wigley#.Vyy322M4lZ1

through which visitors learn something about the exhibition topic[226]. "Memorable" and "compelling" are the words often used in the museum field and museum professionals in reference to best practices, however, it appears difficult to pin point what exactly "engaging, memorable and compelling" means in a designed environment as it can take many different approaches.

The main difficulty related to having a full account of how exhibitions are created and constructively discussing why certain choices were made is the limited or denied access to information – design briefs, designer-curator-client (museum) communication, evolution of design solutions and reasoning behind each choice. Design briefs indicate the framework within which designers create exhibitions- goals, objectives, topics, preferences, budgets. Designer – curator – client (museum) communication can provide substantial information on decision-making, use of vocabulary and understanding of it by different stakeholders. Having access to that information can help researchers understand how immersion is actually created by the exhibition design teams. Currently, most of research on immersive exhibitions is retrospective, i.e. it analyzes an already installed exhibition or it tackles the use of technology. It is necessary to look investigate into the design process of an exhibition to document which built solutions correspond with which design process, decisions made, scope and goals, team's expertise. There are multiple factors to be studied in regards to understanding how the design process and all stakeholders, as creators of the experience, affects or contributes to the immersion of the exhibition.

This research addressed confusion around the term *immersion* in the literature review, introduced how the concept of liminality translates to threshold spaces in exhibition design and how visitor imagination can be evoked in order to help visitors pass the threshold and immerse in to the exhibition narrative. The following chapters will discuss the factors which contribute to the creation of immersion in exhibitions according to the views and expertise of exhibition designers who were interviewed for the purposes of this project and will present researcher's study of three Hokusai exhibitions in three different locations designed by three different teams and will evaluate the structure of these exhibitions, their visitor experience and factors contributing to immersion.

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[226] Black, G. (2005). *The engaging museum: Developing museums for visitor involvement*. Psychology Press; Basballe, D. A., & Halskov, K. (2010, November). Projections on museum exhibits: engaging visitors in the museum setting. In *Proceedings of the 22nd Conference of the Computer-Human Interaction Special Interest Group of Australia on Computer-Human Interaction* (pp. 80-87); Shaffer, S. (2011). Opening the doors: Engaging young children in the art museum. *Art Education*, *64*(6), 40-46; Scott, M. K. (2012). Engaging with pasts in the present: Curators, Communities, and Exhibition Practice. *Museum anthropology*, *35*(1), 1-9.

METHODOLOGY

Research Design

The initial questions and conceptual frameworks were studied through literature examination and archival research of James Gardner archive at the University of Brighton Design Archives[227]. James Gardner was a British exhibition designer who worked on various design projects from the 1920s until the middle of the 1990s, his most known museum projects are the Evoluon Museum for Phillips in Eindhoven (1966) and the Museum of Natural Science in Taiwan (1988), and his most researched and reflected in academic publications project is the Evoluon Museum. Many exhibition design project, however, remain stacked in an array of exhibition documentation at the Design Archive and are not yet researched. Gardner has also published his autobiography[228] in 1993 which stands as a lively and humorous documentation of him as a designer and for future research is an irreplaceable resource to the archival documentation.

Ontological orientation is constructivism because this research looks at how exhibition designers work with immersion in exhibition design. It supports the main inquiry of this study to test unapplied theoretical concepts and draw understanding of it through the process of exhibition development with the design team. The study takes interpretivism and critical inquiry[229] as a theoretical framework to create understanding of the concept of liminality in order to examine how these concepts contribute to approaches in exhibition design practice.

The methodology of this research is grounded theory[230]. The exhibition design field keeps developing due both to practice and theory, some aspects of practice are theorized and some theoretical aspects are applied, the latter happens rarely. The methodological approach follows Friedman[231] who described the correlation of theoretical and practical knowledge as an iterative process in which practical knowledge is constantly theorized and theories are constantly tested and applied in practice. The exhibition design process is yet rigid, therefore, restructuring of the exhibition design process may foster new dynamic relationships among stakeholders across all stages of exhibition

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[227] James Gardner Archive, University of Brighton Design Archives. (n.d.) Retrieved from http://arts.brighton.ac.uk/collections/design-archives/archives/james-gardner-archive
[228] Gardner, J. (1993). *The artful designer: ideas off the drawing board*. Lavis Marketing.

[229] Swann, C. (2006). Action research and the practice of design. Action Research, 18 (1).

[230] Glaser, B., & Strauss, A. (1967). Grounded theory: The discovery of grounded theory. Sociology The Journal of The British Sociological Association, 12, 27-49; Charmaz, K. (2009). Shifting the grounds: Grounded theory in the 21st century. JM Morse et al. (2009).

[231] Friedman, K. (2003). Theory construction in design research: criteria: approaches, and methods. *Design studies, 24*(6), 507-522.

design[232] Therefore, it supports the main inquiry of this study to indicate unapplied theoretical concepts and draw understanding of it in the process of exhibition development.

Inductive theory is chosen to answer the research questions and build knowledge from the conducted research and collected data, without predetermined hypothesis on definitions of immersion and its construction. Through empirical findings it contributes new understanding of fundamentals of immersion in practical exhibition design field. Themes arising from the interviews with design professionals are traced to create an understanding of the state of immersion by those who create the experiences and not those who reflect on already installed experiences

The research used a qualitative approach[233] to provide a comprehensive understanding of the topic. The methods included semi-structured interviews, observation of the work process at the design studio and analysis of installed exhibitions. The semi-structured interview approach was chosen for this study in order to acquire a full account of current exhibition design practices from a few practitioners and reveal first-hand knowledge inadequately presented in the museum literature. The observation method has integrated me as a researcher into the culture and context of the organization. Workshops at key stages of the design process helped me to integrate as a design researcher ensuring that the outcomes feed back into the tested conceptual framework allowing for adjustment through an iterative design process.

Documentation

Documentation of exhibitions and their designs for this study consists of photo documentation in order to illustrate the exhibition layout, interpretation (labels and explanatory panels), artworks and artifacts on display. This documentation is aimed at providing visual aid to the analysis of the visitor experience and what it means within the framework of immersion examined in this research.

Three examples of the exhibition on the same topic showcasing the works of the Japanese artist Hokusai in three different locations across the world – Milan, London and Melbourne - were chosen to demonstrate how immersion depends on the way the exhibition structure is created within a given physical space and that it does not have result in a technology heavy exhibition. Photo documentation was not possible to execute in all of the

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[232] Waite, N. (2016). Learning Design Histories for Design Futures: Speculative Histories and Reflective Practice in: Modes of Criticism 2, Modes of Criticism, Porto, Portugal; Lake-Hammond, A., Waite, N. (2010). Exhibition Design: Bridging the Knowledge Gap. The Design Journal. 13 (1). 77–98. doi:10.2752/146069210X12580336766400.

[233] Creswell, J. W. (2009). Research design: Qualitative, quantitative, and mixed methods approaches (Third ed.). Thousand Oaks, California: SAGE.

exhibitions due to the restrictions on photography at the British Museum, therefore, images of the exhibition from open access were used.

Observation

With the goal to investigate immersion in exhibition design in the 21st century, it deemed crucial to observe the current situation, conduct interviews with designers who practice now and are often working on creating immersive environments to collect information first-hand rather than create historical reflections. In order to gather knowledge from practice in the multidisciplinary[234] and dynamic process of exhibition development which is little theorized[235], it was essential to observe the process and to question current status quo of immersion and apply proposed theoretical concepts. Having faced forced approaches to designing immersive visitor experiences in my own practice as a designer, i.e. a prescribed list of digital and physical interactives, films and scenographies to fill up the gallery spaces, I felt the urge to question and provoke the existing ways of designing immersion and studying it as a system of experiences which can be layered over the systemic thinking.

Interviews

Semi-structured interviews were chosen as a method for this study in order to acquire a full account of designers' ways of working with immersion or thinking about this concept. Interviews were conducted over the period of several months from August 2017 until January 2018. Participants were contacted by email with a short introductory to the project and asked whether they could contribute to this study. In total seven exhibition designers agreed to participate. Five designers were interviewed in person, the interviews were audio-recorded and transcribed using the online transcription software. Two designers could not participate in the interview process and contributed to the questions in the written form over email. This format appeared constricting as it did not allow for the follow up and adjustment of the questions as the semi-structured interview process allows. The in-person interviews were substantial in volume and contents because the format provided the ability to have follow up and clarifying questions which helped to unfold the topic of creating immersing exhibitions.

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[234] McKenna-Cress, P., & Kamien, J. (2013). Creating exhibitions: collaboration in the planning, development, and design of innovative experiences. John Wiley & Sons.

[235] Roberts, T. (2013). Interpretation design: building knowledge from practice. (Doctoral dissertation, Swinburne University of Technology, Melbourne).

Analysis of interview texts allowed to trace the themes which designers relate to immersion and collide it with the theory of liminality. Exhibition designer were approached by email and asked whether they could contribute to the study and talk on the topic of immersion in exhibition design. The interview material came out to be rich in content, it has contributed to the research questions on the construction of immersion in design, however, it has also provided new material which is out of the scope of this research to discover. New topics arising from conversations should be considered for further research on the broad topic of exhibition design which includes design process, design techniques and team dynamics.

Limitations of data collection

Three issues regarding the data collection and its use for this research are of utmost importance to highlight here. Initially it was planned to collect comprehensive data on several case studies – the three exhibitions displaying the work of Hokusai which are examined in the next chapter. In order to understand which factors contribute to creation of immersive exhibitions and how immersion is understood among the various stakeholders of the process it was planned to:

1. Conduct interviews with exhibition designers and curators
2. Analyse exhibition design briefs, initial designs and communication among the stakeholders
3. Analyse the exhibition scope: physical space, timeline, budget, collection, goals and objectives
4. Photograph each exhibition in detail in order to illustrate the findings

The issues of planned data collection arose due to the limitation of access to the design documentation in two of three cases, limitation of access to conduct interviews with curators and designers who were involved into the exhibition design creation in two of the three cases, and limitation of permission to photograph the exhibition space in one of the three cases.

Due to the museum policies and access to information, it was not possible to conduct interviews with the employees of the National Gallery of Victoria in Melbourne and the British Museum to talk in-depth about the creation of the exhibition. The Milan exhibition was designed by the contractors – an exhibition and graphic design company Dinamomilano which was not affected by the museum policies and, therefore, agreed to give an interview about their work on the exhibition. Same museum policies have affected access to design briefs and exhibition scope. Photo documenting of the exhibitions was not permitted only in one of the three cases - the British Museum had "no photography" restriction.

Since it was not possible to collect all the data related the examples of exhibitions to make up the case studies, the exhibitions which were meant to be

used as case studies are presented as examples of how different exhibition design structural approaches can create immersive or non-immersive visitor journeys using the concepts discussed in this thesis. The examples are evaluated and examined by the researcher against the exhibition design techniques and theory of liminality which contribute to immersion.

The interviews presented in this dissertation are conducted with exhibition design practitioners whose designs reflect the exhibition topics in the most intuitive way, whose designs are not over designed and precisely respond to the narrative of the exhibition and, most importantly, who have mentioned or referred to immersion in their practice.

EXAMPLES

Three exhibitions displaying the same art pieces for the most part[236] of Hokusai and focalizing on the "The Great Wave" were chosen to trace and compare immersion which is built through the spatial narrative. These exhibitions were shown in 2016-2017 in three different locations (not simultaneously): Palazzo Reale in Milan, the British Museum in London, National Gallery of Victoria in Melbourne. Each exhibition was developed, adopted and designed by different exhibition design companies or in-house museum teams, therefore, the concepts slightly differ as well as the design, especially, considering the constrains of each particular gallery space. The visitor experience of each exhibition was different. The observations of all three exhibitions were made for this study to experience the visitor flow and the spatial narrative and to provide subjective researcher's reflections within this study on immersive exhibitions.

In each exhibition the narrative culmination was on the "The Great Wave", however, the path to this culmination in each exhibition was different. The exhibition "Hokusai. Hiroshige. Utamaro" at the Palazzo Reale in Milan had a long in terms of time build up for the experience of "The Great Wave". However, the peak experience, in professional design language referred to as the "iconic experience", in this exhibition has been the strongest one in comparison to the other two exhibitions in London and Melbourne. This effect was reached due to the overall composition of the exhibition, its coherency from the standpoint of ambience and content.

Due to different rules applied to the confidentiality of the projects at each of the museums, it was possible to conduct an interview only with one of the designers of the exhibition at the Palazzo Reale in Milan. The British Museum and the National Gallery of Victoria's rules did not permit for collecting unpublished data through an interview method for research purposes, therefore, the exhibitions at the British Museum and at the National Gallery of Victoria are analyzed based solely on the observations of the space.

The final exhibition result, undoubtedly, depends on the existing gallery spaces, on the financial resources and design and curatorial visions of an exhibition. Each exhibition, even on the same topic, will always be different if created by a different team of people. The three "Hokusai" exhibitions in three different locations were perfect case-studies for examining the narrative spaces, tracing immersive techniques if applied and comparing each case within the context of this research of immersion in exhibition design.

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[236] Most of the artworks were the same, some pieces rotated due to the conservation regulations on the exposure of art to light.

"Hokusai. Hiroshige. Utamaro", Palazzo Reale, Milan

"Hokusai. Hiroshige. Utamaro" exhibition took place at Palazzo Reale in Milan from the 22nd of September 2016 to the 29th of January 2017. The design team who worked on the exhibition consisted of the graphic design company Dinamomilano[237], the architect Corrado Anselmi[238] and lighting designers Barbara Balestreri[239], and the curator Rossella Menegazzo[240].

Illustration 14. Exhibition threshold, the entry way from the ticket office in to the exhibition. From https://www.corradoanselmi.com/filter/2016/Hokusai-_-Palazzo-Reale

The exhibition entrance is the threshold *(illustration 14, 15)* into the world of the exhibition's subject matter, therefore, as discussed before in the chapter *Space and Narrative in Exhibition Design*, it is one of the factors which can create an effective immersion. The threshold at the exhibition at the Palazzo Reale was well thought-through in terms of spatial design. The quality of the Japanese paper-like walls and soft warm lighting immediately sets a mood for a new type of environment. The associations which this exhibition evoked were not literal and affected the mood and the reading to perceive new information rather than directly engaging associations related to the subject. The mental readiness which is connected to the physical state is essential in order for a

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[237] [http://www.dinamomilano.com/]

[238] [https://www.corradoanselmi.com/]

[239] [https://www.luceweb.eu/2018/02/21/barbara-balestreri/]

[240] [https://www.unimi.it/it/ugov/person/rossella-menegazzo]

visitor to be open for perception of new information[241], for absorbing and engaging on an emotional level.

Illustration 15. Exhibition threshold continues with a long corridor leading to the first gallery with artworks. From https://www.corradoanselmi.com/filter/2016/Hokusai-_-Palazzo-Reale

Visitor flow was structured to moving along the winding corridors where the artworks were positioned one after another at the same height and leading a visitor further and deeper into the galleries of the palazzo. Illustrated below *(illustration 16, 17)* on the images are the narrow windings paths keeping a visitor close enough to the artworks – exactly the distance at which these artworks can be best to view. This creates an enforced interaction with the artworks unless one decides to skip the whole section and move on. This designed attention drawing power, which is not leaving a visitor a choice to interact with the artworks differently, but look closely or ignore and walk by, can be viewed as a through-through design trick. However, as Bruno Stucchi from the design studio Dinamomilano shared in the interview, the gallery space was a challenging one to work with and dividing the gallery spaces to

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[241] Achiam, M. F. (2015). Immersive Exhibitions. *Encyclopedia of Science Education*, 485-487; Bedford, L. (2016). *The Art of Museum Exhibitions: How story and imagination create aesthetic experiences*. Routledge.

create a zig-zagging path was the most appropriate solution. In the case of this exhibition, the choice to create winding pathway was a natural resolution to enliven the existing square gallery space of the palazzo with a visitor flow.

Illustration 16. Winding pathway. From
https://www.corradoanselmi.com/filter/2016/Hokusai-_-Palazzo-Reale

The team used multiple design tools and strategies in order to deliver a memorable exhibition, however, they were constrained with the lay out of the rooms in the palazzo which could not be changed. The team who worked on the exhibition project composed of an architect, graphics designers and a lighting designer decided to change the enfilade of palazzo rooms with additional separation walls, contrast background colors and thoughtfully designed lighting for the space, textures and colors. There is a designed coherence of narrative space and order in this exhibition which makes it easy to navigate in as a visitor and allows to save all the attention for the examination of the artworks. The space is not overly designed, it acts to support the content rather than add to the content as it is often the case in scenographic exhibitions of exhibition design companies which practice scenography as their exhibition design approach.

Once arrived at the end of the long zig-zagging journey, the visitor turned out to be in a spacious and open-floor section of the exhibition with larger artworks and contrasting dark blue backgrounds against them which were lit only from the bottom *(illustration 18-20)*. After the long journey through the entrance, the narrow windings pathway among relatively small artworks, which had to be examined from a closed distance, could lead a visitor to losing energy and attention. However, the arrival to the large rooms with larger and

Illustration 17. Winding pathway. From
https://www.corradoanselmi.com/filter/2016/Hokusai-_-Palazzo-Reale

more colorful artworks, as well as contrast lighting on the dark blue walls worked as an equivalent of a fresh breath. The change of scale, both in artworks and gallery space, is the aspect which creates a moment of recharge of attention and a certain level of surprise. Surprise in exhibition narrative spaces is not necessarily an unforgettable discovery, it can and, perhaps, should be at times subtle in exhibition design in order to avoid becoming grotesque. Such grotesqueness may echo other types of entertainment which are not suitable for all museum exhibition experiences.

Examining the color of this exhibition, it is important to notice that color in this case is also shaped by light design. The combination of dark blue and sienna make a soft and, at the same time, contrasting background for the artworks. This sits the artworks on the wall and helps the colors to come out unlike against hanging the artworks on the white background. Large prints of the artworks or pieces of the artworks appear here and there in the space visually concluding the gallery *(illustration 18)*. Such large prints delicately placed throughout the exhibition fit well into the color and texture scheme of the space, the material chosen for the prints aims to be similar in look and feel quality to the Japanese paper. In the British Museum exhibition, we will see a completely different choice for the large-scale print creating a context.

Illustration 18. Larger room situated after the winding pathway. From
https://www.corradoanselmi.com/filter/2016/Hokusai-_-Palazzo-Reale

Illustration 19. Large room with contrast lighting and colors. From
https://www.corradoanselmi.com/filter/2016/Hokusai-_-Palazzo-Reale

Illustration 20. Large room with contrast lighting and colors. From
https://www.corradoanselmi.com/filter/2016/Hokusai-_-Palazzo-Reale

Illustration 21. "The Great Wave" room. From
https://www.corradoanselmi.com/filter/2016/Hokusai-_-Palazzo-Reale

Finally, after a long walk through the corridors filled with small prints, a visitor enters into a spacious round room with an entirely different layout to the previous rooms. After a close and forced interaction in the zig-zagging spaces, as there was no other choice but to look closely or move by, visitors turned out to be in a large room surrounded by the thirty six prints of the views of the Mount Fuji and facing "The Great Wave" *(illustration 21)* which was positioned in the middle of the room on the dark blue wall. Such design

choice acted to restart the visitor attention again. How to move around in the space which does not guide? Which Mount Fuji view to come to first if there are too many visitors looking at "The Great Wave"? Walk clockwise or counter clockwise? Visitors had to make choices. This is the "iconic experience" of the exhibition – the arrival to the main artwork which was used in the exhibition marketing and also a recognized piece by the wide public. It can be argued that the spatial narrative in this "iconic experience" is immersive because surrounding a visitor thirty six views of the Mount Fuji set a continuous non-interruptive with words reference to the landscape which Hokusai was depicting in his works. Being positioned in any point of the space, a visitor could glance from afar at several views of the Mount Fuji simultaneously. Even when looking closely at "The Great Wave", a couple of the views of the Mount Fuji would appear in the background. This exhibition is precisely the case when the space is not overly designed and leaves room for visitors' imagination. They are stimulated to imagine anything, the design guidance in application to immersion here suggests looking at the "Wave" closely and seeing the Mount Fuji in the back. And the vice-versa – looking at one of the illustrations of the Mount Fuji and noticing the "Wave" from afar. Logistically for the visitor flow this is a perfect solution considering that "The Great Wave" could gather around multiple viewers at the same time and it could be rare that there was no one standing next to it. This way the visitor traffic is distributed and offered to look at the views of the Mount Fuji while other visitors are gazing at the "Wave". This decreases the congestion of people and visitor disappointment of being stuck in a crowd of visitors and waiting to come close to the artwork. The "Wave" spatial design solution at the British Museum, which will be discussed in the next subchapter, offered the opposite experience.

After the "iconic experience" of the "The Great Wave", the exhibition smoothly lead the visitor through other works of Hokusai, Hiroshige and Utamaro to the final but smaller than the "iconic experience" peak of the finale. Like in a narrative structure in writing, this exhibition appeared to have a rising action leading to the climax at "The Great Wave" and the resolution after the experience of the main artwork. This exhibition is not immersive in the way accepted widely – it does not have a large number of media tools to communicate the content or 360-degree media projections accept for one last room *(illustration 22)* and one video in a small room with chairs about the process of making prints. The largest part of the exhibition, however, is the artworks and brief explanatory panels and labels. What makes this exhibition immersive is the narrative and spatial structure well intertwined together and within the existing space of the palazzo. The coherency of the narrative with the spatial design made this exhibition accessible to interpretation as the visual choices for the design have helped to indicate the exhibition sections and

themes. Immersion in this case correlates with the rhythm and composition mentioned as aspects of immersion in exhibition design by Juri Nishi[242].

Illustration 22. The last room with the projection. From https://www.corradoanselmi.com/filter/2016/Hokusai-_-Palazzo-Reale

The line between the institutional museum framework and the world of Hokusai is slightly blurred[243] in this exhibition due to the spatial narrative and overall design choice of materials and lighting. The visitor walk through the narrative space is involving into the exhibition themes, the spatial design giving associations of Japan acting to transport visitors to a different place and time[244].

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[242] Appendix, *Interview with Juri Nishi*, pp. 139-150.

[243] Wigley, M. (2015). The Museum is the Message, Symposium 'Between the Discursive and the Immersive'. 3 – 4 December, 2015. Louisiana Museum of Modern Art in Humlebaek, Denmark. Available at <http://research.louisiana.dk/videos/mark-wigley#.Vyy322M4lZ1>

[244] Bitgood, S., Ellingsen, E., & Patterson, D. (1990). Toward an objective description of the visitor immersion experience. *Visitor Behavior*, *5* (2), 11-14.

"Hokusai: Beyond the Great Wave", British Museum, London

The exhibition "Hokusai: Beyond the Great Wave" took place at the British Museum in London from the 25th of May to the 13th of August 2017. The museum gallery scale and layout for this exhibition were different from the Palazzo Reale space. The scale was smaller, therefore, an already small size existing gallery space had to be designed to host a large number of artworks. The look and feel of the British Museum exhibition was "clean" and traditional in comparison to the immersive into the world of Japanese prints exhibition at the Palazzo Reale. Apart from the gallery sizes of the exhibitions, the narrative has unfolded differently through the space. The British Museum exhibition had many angles in its design *(illustration 23)* which made the space uncomfortable to walkthrough, the angles seemed unwelcoming and bulky. The visitor traffic was high, and the angled space made it more difficult to move around the exhibition smoothly. The threshold to the exhibition was not prominent – one entrance panel with the introductory information about the exhibition. The so essential threshold which is so essential to prepare visitors to experience somethings new, to be open to process visual and textual information and, after all, to immersion, was abrupt. The threshold which could help immersion was not thought through for this exhibition.

Illustration 23. The wallpaper Mount Fuji in the first room of the exhibition. From https://www.nippon.com/en/views/b02336/beyond-the-great-wave-hokusai's-deep-old-age-at-the-british-museum.html, titled "Hokusai's wave decorates the museum entrance; Mount Fuji looms la

Public interest in this exhibition was high, therefore, the space was overly crowded on an evening of a week day. There were many congestion

areas in the exhibition space, especially at the entrance and the first room. "The Great Wave" was presented to the visitors early on – at the end of the first room after one makes their way passing by the wallpaper Mount Fuji *(illustration 19)* and around the designed angled walls *(illustration 20, 23)* on which the artworks are displayed. The wallpaper of Mount Fuji in material that was chosen for the print of this large-scale photograph was different to the material choice in the exhibition in Milan. The Milan exhibition look and feel was built around the quality of the Japanese paper – warm, fiber, semi-transparent and light. Even the walls colored in sienna and dark blue had slightly rough texture, not smooth and glossy, to support that paper feel. In the British Museum, the quality of the wallpaper aligns with the smoothness of the white walls. And again, not only in the material quality, but also in the type of the representation for creating the context in this exhibition, a visitor is presented with a realistic photograph of the mount Fuji juxtaposing the hand-crafted views of the landscapes in the print at the British Museum while at the Palazzo Reale the exhibition supporting context was the pieces from the artist's prints scaled and printed on large fabric. The difference of the materials (gloss paper vs. fabric), the finishes of the materials (textured vs. smooth walls) and lighting played a tremendous difference in the perception of the space.

The realistic representation of the Mount Fuji at the British Museum, while bright and sharp as an image, has taken away that space in which visitors could interpret and imagine the real Mount Fuji by looking at the artist's prints and suggesting scenarios[245] of how it really looks like as according to Dufresne-Tassè associating, predicting and suggesting are the cognitive actions which use imagination.

Photography inside the exhibition was not allowed and it made it impossible to illustrate the space with the visitors in it engaging with the exhibition's content. In comparison with the Hokusai exhibition at the Palazzo Reale where the design of the space and visitor experience was created to be maximally coherent, the British Museum exhibition lacked spatial coherence which would allow for the flowing gaze with accents on certain artworks. The space was homogenous, that is to say, too similar compositionally – white walls, angles, artworks hung by one or two. The space lacked transition areas and pauses which are needed for the visitors to restart their attention once in a while in order to be able to more easily perceive more information presented in the exhibition.

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[245] Dufresne-Tassè, C., & Lefebvre, A. (1994). The museum in adult education: A psychological study of visitor reactions. *International review of education*, *40* (6), p. 475

Illustration 24. The first room of the exhibition. From
https://hyperallergic.com/391035/hokusais-great-wave-was-only-a-drop-in-the-bucket/

The "iconic experience" was not built up as in the Milan exhibition where the shape and scale of the space in relation to the previous rooms as well as the artworks themselves has changed vastly creating a special viewing experience that has not been introduced in the rest of the exhibition. At the British Museum, "The Great Wave" was positioned soon into the exhibition – at the end of the first room. The positioning of the "iconic experience" in exhibitions early on, in the middle or at the end does not affect immersion as long as the "iconic experience" is designed to impress, reflect, gaze, and provides enough space to do so. "The Great Wave" was hung at the very beginning of the corridor between the first and the second rooms *(illustration 25).* The amount of visitors and the positioning of the artwork in the transition space have created the "Mona Lisa" affect when it is difficult to come closer and look at the "The Great Wave". By "Mona Lisa" here I create an analogy with the painting at the Louvre which most of the time gathers large crowds of visitors so that it makes it impossible to come closer to the paining and examine it. The "Wave" gathered around a crowd of visitors which has blocked the way to the rest of the exhibition and also did not allow for a closer look of the art work. The decision for positioning the piece which expectedly would attract more visitor attention than other ones was unclear. It could be dictated by the limitations of the museum gallery where the exhibition was installed and the flow of the exhibition narrative. However, unfortunately, I can only guess as there was no access to the exhibition design materials and curators. The most awaited "Wave" and Mount Fuji artworks were concentrated in the first room immediately releasing the anticipation built up with the marketing of the exhibition. Such decision to show the artworks, which many of the visitors came to see, in the first room first, risked to exhaust all the visitor's interest in

the very first part of the exhibition, and second, create congestion in one room. The maintenance of visitor interest is important throughout form the beginning to the end in immersive exhibitions. And, as discussed in chapter *Space and Narrative in Exhibition Design*, the narrative space in which the story, the themes, the content intertwine with the designed spatial context for this content, is what tends to create a sense of immersion. The well-structured coherence of designed context which supports the content and is composed of peaks and pauses rather than homogeneity of the whole exhibition space compositionally – structure of the space and visitor flow, and visually – color, lighting, positioning of artworks. The homogeneity of an exhibition could be effective in case of exhibiting

Illustration 25. . "The Great Wave" iconic experience. From https://www.flickr.com/photos/haiku_girl/6660357101/in/photostream/], uploaded by Ali M

one or a few artworks, however, in case of displaying numerous works on paper of different formats and themes, a design choice which makes the perception of a combination of colors and forms within an artwork easier for a

Illustration 26. . Exhibition space after "The Great Wave". From https://hyperallergic.com/391035/hokusais-great-wave-was-only-a-drop-in-the-bucket/

visitor, could be more effective than – easier for a visitor to comprehend visually and also being navigated with the help of the display.

In terms of tools used for the communication of information within the exhibition space, there is no difference between the exhibition in Milan and London. In both exhibitions, the information about the artworks and additional contexts are explained in text on the labels and panels. However, the Milan exhibition is engaging a visitor into the narrative with the help of exhibition design techniques such as threshold and iconic experience making it immersive while the London exhibition is lacking that engagement into the flow. Therefore, we can posit that immersion is not created with the help of technology, the tools such as AR, VR, video projections and touch tables. The exhibition at the Palazzo Reale in Milan is an example of immersive techniques which are the foundation of immersion, these are the narrative techniques which are being argued about in this thesis. These techniques are not traceable at the Hokusai exhibition at the British Museum – there is the absence of the visitor experience flow[246], the spatial interpretation leaves visitors some space to predict, suggest or associate[247].

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[246] Csikszentmihalyi, M., & Csikzentmihaly, M. (1991). Flow: The psychology of optimal experience (Vol. 41). *New York: HarperPerennial*.

[247] Dufresne-Tassé, C., & Lefebvre, A. (1994). The museum in adult education: A psychological study of visitor reactions. *International review of education*, *40* (6), p. 475 Achiam, M. F. (2016). The role of the imagination in museum visits. *Nordisk Museologi*, (1), p. 92.

"Hokusai", National Gallery of Victoria, Melbourne

"Hokusai" exhibition at the National Gallery of Victoria (NGV) in Melbourne took place from the 21st of July to the 22nd of October 2017. On the NGV website people can find the information related to the Hokusai exhibition: a "A conservator's perspective" video[248], "A curator's perspective" video[249], brief information about the exhibition topic in only four paragraphs and the link to download all of the exhibition labels and digital copies of the artworks in high quality[250]. Making exhibition content accessible has been a step-forward for museums. While the information on the exhibition appears extensive, the NGV website provides no information on the exhibition design idea itself. This might not be of interest to museum-goers necessarily, however, this is an important aspect for museum professionals involved in exhibition design, curation, and education. Similarly, the information on the reconstruction of a museum building rarely appears on the website or inside the museum space.

Illustration 27. Exhibition space. "Installation view of Hokusai at the National Gallery of Victoria", photo by Tom Ross. From https://www.broadsheet.com.au/melbourne/art-and-design/article/hokusais-forces-nature

The exhibition space at the NGV was as large as the exhibition space at the Palazzo Reale, however, had a completely different configuration. The gallery was purposed for modern exhibitions and included the lighting tracks

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[248] [https://www.ngv.vic.gov.au/multimedia/a-conservators-perspective-hokusai-北/]

[249] [https://www.ngv.vic.gov.au/multimedia/a-curators-perspective-hokusai-北斎/]

[250] [https://www.ngv.vic.gov.au/exhibition/hokusai/]

on the ceiling and mobile wall structures *(illustration 27)* which can be moved accordingly to the needs of each new exhibition layout. Design approach to the look and feel in this exhibition appears as "clean" and modern – clear contrast between the exhibition design choice of bold white and blue colors as the background for the prints made on the delicate yellowish Japanese paper. Illustrations to this exhibition demonstrate well the contrast of the exhibition surfaces to each other. The NGV's exhibition was not referencing a particular look and feel which would create associations with Japan or printmaking unlike the exhibition at the Palazzo Reale in Milan.

The order and the positioning of the artworks appeared guiding in this exhibition as it is at the Palazzo Reale exhibition. The one continuous line, which is created with the rhythm of the hung at the same level artworks, allowed visitors to move along the walls in two main ways: following the artworks on one wall or making a zig-zagging path between the two opposite walls. Seemingly extremely traditional layout but this is a simple way to organize visitor traffic.
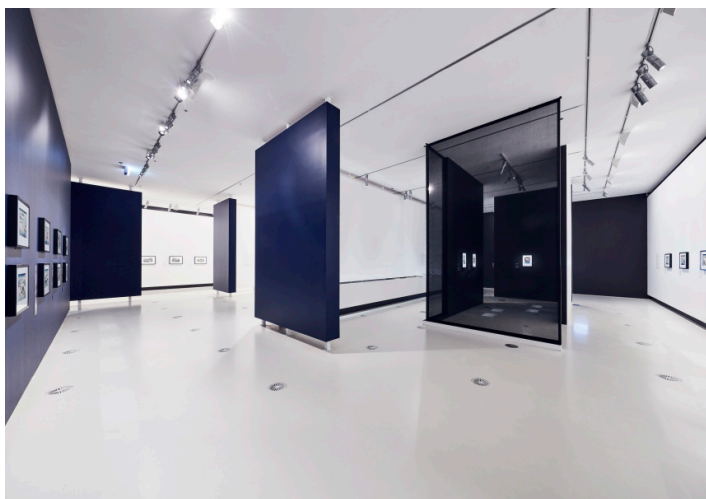

Illustration 28. Prints. "Installation view of Hokusai at the National Gallery of Victoria", photo by Tom Ross. From https://www.broadsheet.com.au/melbourne/art-and-design/article/hokusais-forces-nature

The layout of the exhibition across several large rooms with high ceilings, white, black or dark blue walls communicated the division of the artworks by themes (early work, views of Mount Fuji, waterfalls, ghost stories, bridges, birds and flowers) making the exhibition appear flat and, in a way, two-dimensional which worked well against small-scale textured prints on paper *(illustrations 28, 29)*. However, unlike the exhibition at the Palazzo Reale in Milan, the NGV's exhibition visitor walkthrough was much open plan and not directing. It is mainly related to the existing gallery spaces in both locations – Palazzo Reale had an array of small rooms across which the visitor flow had

to be designed in such a way that the exhibition viewing would not be tiring, and the NGV space has large rooms with an existing mobile wall system, therefore, the more open plan approach is more feasible in this case. This design solution offered viewing and observation as the museum's institutional framework was visible throughout – quite space with wall surfaces purposed for the artworks to be hung, bright lighting, text panels on the walls *(illustration 28)*. These are the attributes which are now used to be associated with museums, the presence of the institutional space can be recognized unlike some loss of the institutional frame in the Palazzo Reale case. Moreover, the exhibition presents no contextual creation tools such as printed photo wallpaper like at the British Museum or the large-scale prints of the Hokusai artworks at the Palazzo Reale making the museum framework as crystal clear as it can be.
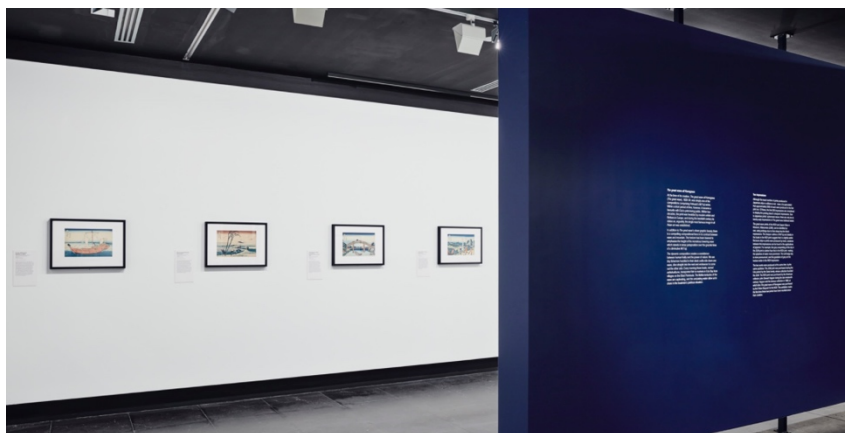
Illustration 29. Exhibition space. "Installation view of Hokusai at the National Gallery of Victoria", photo by Tom Ross. From https://www.broadsheet.com.au/melbourne/art-and-design/article/hokusais-forces-nature

The NGV exhibition was the only exhibition in which two prints *(illustration 30)* of "The Great Wave" were exhibited instead of just one print. Therefore, the iconic experience in this exhibition's case is the comparison of two early prints of the "Wave" which acts to bring visitors' attention to the printmaking technique which is different from painting, for example, where artists create just one unique piece. However, like at the British Museum, there was no build up for the "iconic experience" – a suspense for the much awaited artwork followed by the resolution, the presentation of this artwork in a way which surprises visitors.

Illustration 30. "The Great Wave". "Installation view of Hokusai at the National Gallery of Victoria", photo by Tom Ross. From https://www.broadsheet.com.au/melbourne/art-and-design/article/hokusais-forces-nature

In this exhibition, there was no narrative structure with the features such as suspense-surprise or conflict-resolution of conflict which keeps visitors' attention activated throughout. Lack of such narrative structure and the following features of immersion, according to our findings, indicates that the exhibition is not immersive: a narrative space which activates visitors associations and imagination of scenarios[251], rhythm[252] and composition[253] which visually leads a visitor through the narrative.

The Mount Fuji views in this exhibition were displayed in one rectangular narrow room *(illustration 31)* where the views were hung on the opposite walls and relatively short distance which made it possible for the visitors to compare them, however, there was no similar affect as at the Palazzo Reale exhibition where one was literally surrounded with the Mount Fuji views. Even the rectangular layout, at the NGV exhibition, versus a circular one, at the Palazzo Reale exhibition, created different associations. While the rectangular configuration of the room with the thirty six views of the Mount Fuji communicated the museum context and the sense of being inside an institution and looking at the artworks organized by museum professionals, the circular configuration and dimmed lights created associations of being in the open space, perhaps, exactly afar from the mountain and gazing at it.

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[251] Dufresne-Tassé, C., & Lefebvre, A. (1994). The museum in adult education: A psychological study of visitor reactions. *International review of education*, *40* (6)
Achiam, M. F. (2016). The role of the imagination in museum visits. *Nordisk Museologi*, (1)

[252] Appendix, *Interview with Juri Nishi*, pp. 139-150.

[253] Appendix, *Interview with Matt Schwab*, pp. 133-138.

Incredibly, spatial design choices, and that includes not only sizes of the spaces but also color and light which create shape, change visitor associations

*Illustration 31. Thirty six views of Mount Fuji. "Installation view of Hokusai at the National Gallery of Victoria", photo by Tom Ross. From https://www.broadsheet.com.au/melbourne/art-and-design/article/hokusais-forces-nature*

Having analyzed exhibition designs of the three exhibitions on same topic and displayed artworks, it can be stated that the exhibition "Hokusai. Hiroshige. Utamaro" at the Palazzo Reale has been an immersive art exhibition because is used the spatial parameters to enhance the narrative which evoked from the displayed artworks. Moreover, the design team has managed to create a threshold experience which acted as a transition from the real world and museum entrance into the world depicted by Hokusai. In the case of this exhibition, the spatial narrative makes this exhibition immersive unlike the exhibitions at the British Museum and NGV. Designers in "Hokusai. Hiroshige. Utamaro" used some tools of scenography: "form follows content"[254] – the motto of the Atelier Brückner known for their scenographic and immersive designs, lighting[255] – also one of the tools of scenography, rhythm[256] which helps a visitor to be guided through the spaces at a certain pace, with pauses and with activating attention when it is designed.

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[254] Christian Barthelmes and Frank den Oudsten (eds.), Scenography/ Szenografie: Making Spaces Talk/ Narrative Raume/ Projekte 2002 – 2010 (Ludwigsburg: avedition GmbH, 2011).

[255] Ibid.

[256] Appendix, *Interview with Juri Nishi*, pp. 139-150.

PRACTITIONERS ON IMMERSION

Following the research methodology, this chapter provides discussion of the interviews conducted with the exhibition practitioners for the purpose of finding out first-hand knowledge - ideas and views - on immersion in exhibition design. It deemed essential to engage in the conversation through semi-structured interviews with professionals to gain understanding of current practices related to immersion. What does immersion and designing immersion mean? Are designers at all concerned about the need to make exhibitions immersive? What is immersion in the fundamentals of exhibition design and without digital environments? Answers or reflections to these questions aim to bridge the gap between published research on immersive, which tightly relates to the studies of digital or multisensory environments, but does not cover immersion in relation to the foundations of exhibition design. As it is argued in this thesis that immersion should be established in exhibition spatial and narrative structure by using *threshold* in order to reach the effect of immersion. The interviews with exhibition professionals reveal more strategies for designing immersion.

Some exhibition design practitioners with previous experience working for exhibition design companies which practice scenography as their approach to design were chosen to delve into the details of applying a scenography to exhibitions as the ultimately immersive approach. Other exhibition designers were chosen based on their particular approach to exhibition design such as use of different ways to create a spatial composition and, therefore, a visitor flow corresponding with the built environment and exhibition narrative. And, lastly, exhibition designers who advocated the role of the designer in the exhibition design process as someone who designs, creates, structures visitor experiences rather than visualizes the ideas of others, have also been chosen to be interviewed.

Designing Immersion – space and narrative

Themes that were indicative of designing immersion which arose from the conversations with the practitioners are different and complementary to the theoretical or published research on immersive. Completeness[257] of the whole experience was noticed as an important feature for creating immersion. The holistic experience of the whole exhibition even though they are usually divided into different sections must, nevertheless, be present. It is an overall impression which ties up the impression of the whole visit whether something in particular did stand out or not. Designers notice that completeness of the experience is difficult to achieve and it might not even matter to the museums

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[257] Appendix, *Interview with Matt Schwab,* p. 134.

themselves as museums often get fixated on showing and telling more rather than focusing on one main message.

Details in creating a holistic experience have been marked as important, Matt Schwab refers to details in the exhibition galleries which are serving non-exhibition purpose – signage, fire extinguishers, air conditioners[258]. In fact, when creating immersive experiences, it is important to carefully craft an entry point – the threshold, and maintain visitors in that space which is past the threshold. It implies that all details which do not contribute to the designed experience should be eliminated in order to maintain a visitor in one mental space and avoid pulling the visitor out of their journey with small elements which do not fit the spatial narrative. In fact, Matt Schwab used the analogy of being immersed in water: "You cannot be immersed in water if only one leg is in or if you are half inside, so it is about being fully in."[259] Juri Nishi brought up the same water analogy in association with "immersion" [260], however, she noticed that immersion in design is very difficult to pin point and that it is probably more productive to think of it as creating subtle ways with the tools available for designers like composition of volumes, light and color, design of the visitor pace through the three-dimensional space. Marta Durlej who worked as a designer at the London-based design company CassonMann refers to immersion as an "absorbing"[261] experience which involves visitors into the narrative, however, how it is reached, with which exact tools and techniques, Marta notices, is dependent on the project to project basis. As Matt Schwab she believes that the story can be told just with the help of the displayed objects, which means that textual interpretation or contextual interpretation in the form of scenography is not necessary. Narrating with objects and without interpretation is hard craft which some designers promote and practice. Marta brought up an example of an exhibited suitcase as an object which might not resonate with the visitors, but if a personal element is added to it such as a dress which connects meaning to the object – the utility of the suitcase and a personal story which is evoked through a dress. This communicative technique, in fact, can be seen relatively often in museums Similar but also slightly different associations of immersion shared by the designers offer grounds based on which ideas about the techniques of creating immersion can be extended further.

Designer from the company PLAID interviewed for this project stated that immersion does not mean making an experience holistic, which is an interesting view, considering that it contradicts the views of other designers

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[258] Appendix, *Interview with Matt Schwab*, pp.134-135.

[259] Ibid, p. 138.

[260] Appendix, *Interview with Juri Nishi*, pp. 146-147.

[261] Appendix, *Email questionnaire - Marta Durlej,* p.151.

who contributed to this research. He puts emphasis on creating a visitor experience within the given physical space and project scope which might contribute to immersion: "Immersive doesn't necessarily mean a seamless 360-degree environment where the floor, ceiling, walls and lighting are all connected to a singular aesthetic spatial idea – although does that make for a complete environment?"[262]The views of designers can certainly differ, and the ultimate goal of such research on immersion or any other approach in exhibition design should not to draw only on the findings which support the arguments of research but also draw attention to the variety of perspectives which helps to explore the complexity of beliefs, preconceptions, misconceptions and practices.

The difficult thing for practitioners is trying to push the design so that it reaches its completeness in the actual space, all the considerations about the given space parameters of the galleries have to be considered, also the lightning systems as they might become destructive of the whole experience. A good example of using lighting as part of the design tool for creating of a certain atmosphere is the Hokusai exhibition in Milan[263] which was discussed previously in the chapter *Examples* In that case exhibition designers and lighting designers worked closely together on shaping of the visitor journey, and a visitor journey is shaped through planning of the positioning of the art pieces, planning the approximate timing, considering what atmosphere and interaction will the colors, textures and light will have the art pieces and what they will transmit to the visitors.

The completeness is important in the finalized version of the project, however, of no less importance is the very structure of the visitor experience and how it unfolds throughout the space. Designers pin point different ways of thinking about the design of the exhibition layout and how it is experienced by the visitors in a holistic way – a tying structure which holds the whole exhibition. When thinking about the visitor walkthrough the space in which objects are placed within a narrative structure, some designers draw a landscape analogy – they think of how objects can be presented to the visitors in ways which suggest a certain interpretation or create a certain effect. For instance, an object can be placed in such a way in the space that first a visitor sees it from afar as they walk into the exhibition. If this is one of the key objects that curators and designers want to draw visitor's attention to, interpretation and spatial design can be building up the anticipation of the visitor as they are walking through closer and closer to the object to finally examine it closer. An illustrative successful example of such experience was created at the Manus x Machine exhibition at the Metropolitan Museum[264]. Such technique was, indeed,

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[262] Appendix, *Email questionnaire - Brian Studak*, p.149.

[263] Chapter *Examples, "Hokusai, Hiroshige, Utamaro", Milan* pp. 89-107.

[264] Chapter *Space and Narrative in Exhibition Design*, pp. 60-61.

mentioned by Matt Schwab in the interview as he was pointing out the designers' ability to think about the designed space in motion from the visitor's perspective and think through how a designer can position the artefacts in such a way that the space is almost experienced as a landscape. Designers from CassonMann[265], a London-based design company which completed a number of significant exhibition design projects such Some designers have mentioned the same approach to thinking about the space in their practice and integrate thinking about an exhibition experience as a walking through any sort of landscape.

However, how does one construct a landscape effect in an exhibition? Several factors can contribute to creating a landscape using objects and interpretation within a gallery space: composition, rhythm, scale. When landscape is deconstructed into an experience it can be seen as a composed structure which has to have a rhythm, because it is meant to be experienced by a person walking through this structure at any preferred pace and it has to consider scale in order to create culminations – attention drawers, resolutions – reflective spaces. While it may seem that the phenomenology of the landscape should be unveiled here in regards to the conversation about visitors' responses, research in the field of phenomenology in relation to spaces, such as that of Tilley[266] could be examined in further research on phenomenological aspects of designed spaces, however, within this research's scope of understanding the technicalities of the structured designed experiences it threatens to take the focus away from the real-world and tangible practices which designers exercise on the daily basis.

Frank den Oudsten in his published book with the interviews of the exhibition designers was discussing the landscape aspect of designing exhibitions with CassonMann and also pointed out importance of working with scale and vistas: "I think the rich detail and the narrative landscape are consistent, because if you walk outside in a natural landscape or in a cityscape, this alternation between scales of vision, between close-up and wide-angle view occurs as well. Amongst impressive vistas you might be struck by an astonishing detail. Perhaps the preconditions for structuring perception in an exhibition may be found here?"[267]. Indeed, this thinking is traceable among some interviewed designers for this research and, perhaps, many designers out there could be using the same approach to thinking of structuring of the space. This is worthy of integration in to the exhibition design or museum-related programs curricula in order to emphasize the role of creating of an embodied experience for the visitors in museums.

[265] CassonMann – London-based exhibition design studio [https://cassonmann.com]

[266] Tilley, C. (1994). *A phenomenology of landscape: places, paths, and monuments* (Vol. 10). Oxford: Berg.

[267] Den Oudsten, F. (2011). *Space. Time. Narrative*. Ashgate Publishing, Ltd, p.170.

In this regard, an interviewed for this research designer Juri Nishi, based in London, is practicing such approach in her designs. With the background in choreography, her sensibility to movement in space is traced in her work. The highlighted the importance of the narrative unfolding over time and space – visitor's pace and the exhibition space[268]. Working with time and space in a highly engaging the visual perception and interpretation environment like exhibitions required intricate craftsmanship and knowledge of techniques which, in fact, pace visitors and evoke responses which designers imbed into the environment. The tools which can be used to think about the exhibition experience in motion in the process of its creation are patterns such as repetition of forms, repetition of tones (lighting, color), work with volume[269]. While these can appear as architectural forms[270] to work with, they can also be approached as compositional units for the creation of non-visual experiences such as music composition which also consists of patterns and volumes. Patterns can also be referred to as motifs which repeat throughout the space. Patterns or motifs, in order to create a bodily response to the environment and affect visitors' pace and walkthrough the space, have to be designed three-dimensionally, i.e. with the help of laying out the objects and cases. Those are the exhibition designer's blocks with which they structure the experience and then layer it and enhance with colors, textures and lighting. Thinking about working with all the aforementioned aspects can be imagined as working with harmonies, I assume that if the designed experience is imagined as harmony by the designer, it is more likely to help them put it in the perspective of how holistic of an experience they have created.

Juri's designs are based on her understanding of her own body in relation to space which enhances the experiential quality of the design: "[…] this has been sort of one of my aims in my work and to create something that the body can understand without kind of embellishment of "concept is this" or "concept is that" […] I try to create experiences that are more intuitive. I think you should go to an exhibition and feel something"[271]. So often museums focus on the information that is presented through working with placing of the information throughout the space on a conceptual level – mapping of the exhibition themes on the floor plans. This step is part of the exhibition design process, however, at the beginning and then it has to be mapped on to the physical space by the designers whose responsibility, in the creation of an ideal experience, has to be to map that conceptual unfolding of the exhibition themes

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[268] Appendi, *Interview with Juri Nishi*, p.139.

[269] Ibid.

[270] Mallgrave, H. F. (2010). *The architect's brain: Neuroscience, creativity, and architecture*. John Wiley & Sons.

[271] Appendix, *Interview with Juri Nishi,* pp. 140-143.

in to the space. "[…] I have a wider understanding, perhaps, of how the story can be told through the practice of choreography or dance. But the core is very much more in the understanding of the body so everything I do comes from my body and my understanding of my body to space."[272] Designers should bring the concepts in with the understanding of bodies in relation to space[273] – this is best practice drawn from the interview with Juri Nishi, as her designs while maintaining visual simplicity seem to create natural pacing flows which visitors can easily pick up on to experience an exhibition without being overwhelmed by the content or bored. One of her designs which does not appeal immersive upon the examination of the photo of the exhibition, during the experience of it was one of the most immersive experiences I can mark from the standpoint of exhibition design structuring. While immersion is a subjective experience, this description reflects my personal evaluation of the space as an exhibition design researcher and practitioner. In the exhibition *California: Designing Freedom*[274] at the Design Museum in London, on which Juri Nishi collaborated with an exhibition design company PLAID who was also interviewed for this research, she focused on communicating the sense of place through color – simple concept as it appears but subtle and difficult to execute in practice, just think of how James Turrell[275] has made light and color his whole career.

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[272] Appendix, *Interview with Juri Nishi,* p.139.

[273] Ibid.

[274] Juri collaborated with a London-based company PLAID on the exhibition "California: Designing Freedom" held at the Design Museum 4 May 2017 – 17 October 2017 [https://designmuseum.org/exhibitions/california-designing-freedom]

[275] James Turrell is an American artist who works with light and space [http://jamesturrell.com/]

Illustration 32. California: Designing Freedom, Design Museum, London. Retrieved from https://www.floornature.com/blog/mostra-california-designing-freedom-al-design-museum-london-12794/
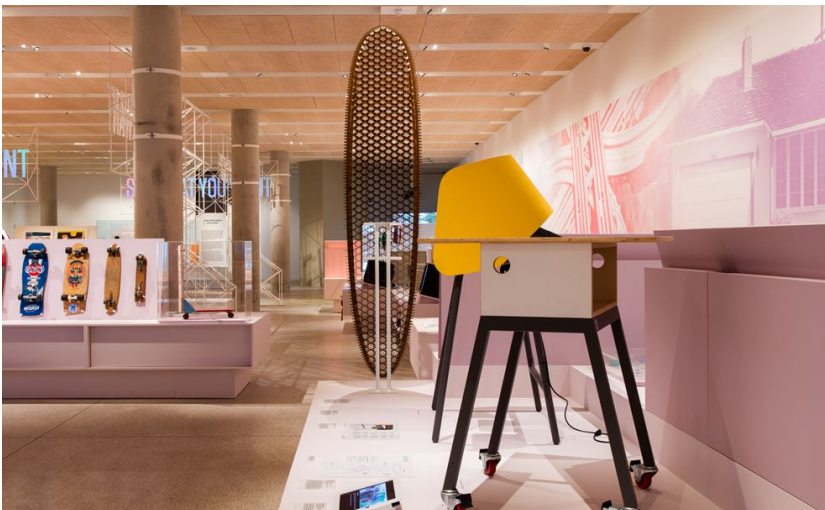

Illustration 33. California: Designing Freedom, Design Museum, London. Retrieved from https://designmuseum.org/exhibitions/touring-exhibitions/exhibitions-for-hire/california-designing-freedom-touring-exhibition

Color was just one layer of the exhibition as another layer or idea was the DIY culture which was shown through non-museum like DIY structures for exhibiting the objects. However, color was the overarching theme which helped the exhibition hold its holism and communicate one big idea of this exhibition which is easy for the visitors to walk away with but, at the same time, which creates mental space for reflection. Thinking through the quality of light and what it communicates was also one the issues Jushi Nishi had to address. The idea was to create a type of light which is reflected by the body of water – a California feel which the designer chose, however, also, she wanted to refer to the type of a mobile phone light – the landscape which we carry in our pockets and the plastic feel of that illumination as she explained[276]. Working with such parameters which appear as intangible but are created with very tangible tools – light, textures, layout of three-dimensional objects - is the type of process required for creation of immersive exhibitions. Another example of working with light and also texture as important factors which contribute to the whole environment is the Hokusai exhibition in Milan. Burno Stucchi, one of the creators of this exhibition, shared that the design team has paid particular attention to the quality of the walls in relation to the quality of the Japanese prints. The team worked with contrast and harmony of the prints against the walls and has chosen to use textile as wall covering instead of paint. Attention to such details and discussion of those choices within the team is a path to creating embodied experiences which resonate with the visitors.

Conversation with Juri Nishi showed her awareness of phenomenology in museum experiences because of her interest in creating embodied experiences and helping visitors perceive and learn through interaction with space[277]. I find it necessary to quote Juri Nishi's explanation of the difficulty of working with all the parameters discussed above – light, pace, pattern, motif – in the three-dimensional exhibition space, because Juri Nishi makes an important point that visitors' perception is much more difficult to control in the space where attention is not directed to just one scene or artefact.

> "[…] it's impossible to define color theory in practice. It's something that is a trial and error. And I'm very much inspired by Bridget Riley's work and her approach and even she says she doesn't know until she paints them. And the thing with painting is that you can control what the perceiver sees. With exhibitions you can't because they have their own journey, their own way of looking at things, their own history, cultural references, etc., and it's three dimensional, there is light and shadow. And also there's so many factors and, of course, on top you've got objects so it's not just a plain, you know. But essentially what I wanted to do was to have a kind of play with a level of the lights and color, so I put a lot of white and its industrial

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[276] Appendix, *Interview with Juri Nishi*, p. 142.

[277] Gibson, J. J. (1966). *The senses considered as perceptual systems*.

paint, isn't it? So I can't get what Bridget Riley does - that kind of level of quality of color, but I put a lot of white on the table so it bounces the light back into your eyes and then the colors on the walls were slightly darker. So all the verticals were slightly darker and muted. But even those colors, I tweaked them - this is where the compositional aspect comes because it's very much about tweaking to see where your pictures are or your volumes are. It's like composing a piece of music basically. For me that's how I see it. And it has to work with what's in that space, so it's not just about the person, but it's also about the artwork, it's also about the light, what's around you. So it's very much really about trying to understand what journey is in three dimensions. I would say that *California* exhibition color scheme was the most difficult color scheme I've done so far."[278]

In this quote the complexity of the work of the designer is traced, often believed as a visual representation of ideas on paper or digitally and then translated into built environment, this experience of Juri Nishi uncovers and proves how many more aspects and intricacies there are in the designers work and how difficult it is to apply theory to practice.

Intricacies can also be evoked from the structure of the exhibition and its composition as it has been discussed throughout this thesis. In the Hokusai exhibition in Milan the design team has planned the visitor experience in such a way that it has to be build up for the "The Great Wave", therefore, making "The Great Wave" an iconic experience of the exhibition which visitors might be anticipating to see or if not anticipated would be intrigued to see. The dedication to making "The Great Wave" the iconic experience has set off the starting point for shuffling the exhibition concepts around throughout the space and understanding which option would help to build up for the experience they wanted to create. They have created the exhibition content of Hokusai's print in very simple themes: prints with landscape theme, waterfall theme, religious theme, flower motifs and the iconic experience of "The Great Wave" and the thirty six views of Mount Fuji. Easy to comprehend and follow for diverse audiences, easy to draw conclusions and comparisons. The combination and development of lighting solutions, graphics solutions and the layout of the content simultaneously from the very beginning has contributed to reaching of the most complete and holistic environment which immersed visitor into the narrative space of the exhibition.

This research shows that exhibition designers who were interviewed for this project think of creating immersion through subtle changes in the environment which include tweaking of the light and working with the light and texture, but also designing the experience with the considerations of structure of the experience - positioning of the objects of the collection in ways

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[278] Appendix, *Interview with Juri Nishi,* pp. 143-144.

which communicate certain messages to the visitors. Immersion discussed with the practitioners has not been about theatricality or multi-sensory experiences or technology – the aspects which immersion is widely associated with. For instance, Juri Nishi brought up the example of the widely popular immersive play "Sleep No More"[279] , which has become of the main references to describing immersive experiences amongst wide audiences. According to Juri Nishi it offers an escape from the real world which modern audiences are searching for. Escapism can also be a complex and multi-layered topic for further research would cover a large in-depth analysis of the theme parks which were out of scope of this current research.

Scenography

According to my assumption, which are based on previous exhibition practice and now some research experience, scenography when applied to exhibition design has to be very carefully crafted to consider a visitor inside its scenography. What I mean here is that scenography tends to be bold, it tends to use metaphors which we also see in the exhibition design practice, even in the example of the *"Expedition Titanic"* exhibition[280] created by the Atelier Brückner. The point that is that not well crafted application of scenography can result in an overwhelming experience. One example of that is the Museum of Political History of Russia in Saint Petersburg. Some of the museum exhibition galleries were redesigned according to the principles of scenography – create an installation which reflects the exhibition topic and puts objects in a metaphorical context. The exhibitions "The Russian Revolution 1917 – 1922" and "Man and State Power in Russia from the 19th to the 21st century" were the topics of those redesigned exhibitions. When visiting the spaces, they felt overcrowded, the colors which were used in the designed had a strong distracting affect, which could be integrated on purposes for the visitors to feel disturbed. However, if that was the purpose, then the amount of interpretation and exhibition narrative communicated through text was too large to be presented in the rooms with red walls and overwhelming non-functional structures – part of scenography – because maintaining attention to the textual information was difficult. Moreover, the intensity of colors in the exhibition, by the way, often used in many examples across museums in different countries, is disturbing the perception of the content. Juri Nishi, in fact, in the interview

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[279] [https://www.punchdrunk.org.uk/sleep-no-more/].

[280] "Expedition Titanic" is an exhibition that Atelier Brückner has designed in 1997 in Hamburg for the Voyager Titanic Exhibition GmbH client [http://www.emee-young- scenographers-contest.eu/en/projects/expedition-titanic]

highlighted that bright or strong colors do take away from the exhibits[281]. Here are some illustrations of the exhibition environment.

Illustration 34. "The Russian Revolution 1917 – 1922", Museum of Political History in Russia, Saint Petersburg, Russia. From http://www.polithistory.ru/en/visit_us/view.php?id=738

Illustration 35. "The Russian Revolution 1917 – 1922", Museum of Political History in Russia, Saint Petersburg, Russia. From http://www.polithistory.ru/en/visit_us/view.php?id=738

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[281] Appendix, *Interview with Juri Nishi*, pp. 143-144.

Saint Petersburg based exhibition design company MusArtTech worked on the redesigning of these exhibitions for the museum, the company states that they provide experiences[282] to visitors with the help of scenographic techniques. One of the founders of the company was trained as a theater set designer and in his practice promotes scenography approach in exhibition design. My critique of that is that ideas from set design cannot just be taken and implemented in the exhibition design space. First of all, because the visitors are moving through the exhibition space and not sitting in one fixed location as they do in the theater. Secondly, the visitors are inside the space and are looking at the installation pieces closely, not from afar like they do in the theater. Sometimes the scale of built installations in exhibitions feels too large. Thirdly, scenography tends to use metaphoric connections, heavily relies on semiotics[283] and often translates exhibition topics through semiotics in spatial design. This can be great if those connections are subtle in exhibitions, however, such metaphoric take on interpretation can also be overwhelming if designed without the considerations of visitor time spent in the space, visitor walkthrough the space and positioning of the points of interest. The latter means that in order for the exhibition space to be comfortable for visiting, positioning of artefacts or points of interest has to be thought through. In regards to how exactly visitors can be the meaning makers[284] of the experience, exhibition designers did not have a particular answer. In practice of some, it boils down how the work with space and the collection – meaning how can the ideas be shown through certain ways of displaying in very concrete physical spaces. Matt Schwab marked working with scale and thinking about the visitor walkthrough as a landscape as design techniques which can potentially contribute to the visitors looking, walking, experiencing and analyzing what they are presented with. It was essential to find out what designers think about the conceptual idea that visitors become the active meaning-makers of the experience. From the designer perspective it is a very subtle shift and, perhaps, visitors do not notice it at all, however, in order to activate them, designers could really think through how exactly the artefacts are positioned in relation to space, in relation to each other and in relation to the visitors.

The interview with Matt Schwab, the exhibition designer and founder of a London-based company All Things Studio was especially contributive to this study in regards to the topic of scenography. Prior to opening his own practice, Matt has worked at the Atelier Brückner, he was imbedded into the work

[282] MusArtTec (n.d.). "Principles of visitor interaction with artefacts, multimedia and interactive objects in modern museums". Retrieved from http://musarttec.ru/texts2.htm

[283] Elam, K. (2002) The Semiotics of Theatre & Drama Routledge, London

[284] Diamantopolou, S., Insulander, E. V. A., & Lindstrand, F. (2012). Making meaning in museum exhibitions: design, agency and (re-) representation. *Designs for learning*, *5* (1-2), 11-28; Griswold, W., Mangione, G., & McDonnell, T. E. (2013). Objects, words, and bodies in space: Bringing materiality into cultural analysis. *Qualitative sociology*, *36* (4), 343-364.

environment and design processes which used scenography as methodology to creating exhibitions.

Reflecting on the differences between theatre and exhibition design Matt Schwab pointed out the consideration of robustness when designing for museums since visitors are having contact with the built environment and moving through it while theater set is untouched by the audiences. Also, scenography has placed the visitor on the spot of the actor[285] which started to imply that visitors can be active in their exploration of the space, engage with it, live it. Whether it is actually so or not, in exhibition design, is a case by case basis. While one of the ideas of scenography is suggesting the visitor to become an actor[286], not all of the scenography exhibitions actually manage to engage visitors.

Imagination

Imagination deemed to be a concept which is difficult to apply in practice and to reason about it with evidence and examples of exhibition design. Some practitioners are exposed to published research on learning styles in museums, however, find it hard to apply those theories. The factors proposed by Dufresne-Tassè[287] and Achiam[288] which spark visitor imagination were brought up the interview with Matt Schwab. The mental activities which spark imagination happen through the actions which make visitors associate, predict, and suggest, because it is necessary to start building scenarios as response to those actions. Combinations of some actions sent to cognition can also evoke imagination, for instance, justify-explain, resolve, compare, grasp, clarify, modify. While in some cases designers might create visitor experiences with the consideration of these factors proposed by Dufresne-Tassè and Achiam, most of the museums and exhibition design companies are unlikely integrate them simply because this research has not been imbedded into the exhibition design processes formally and many exhibition designers have design practice background rather than research background. For instance, exhibition design practitioners are dubious about the validity of learning styles and posit that some might be outdated or that they just not updated on the most recent findings[289].

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[285] Aronson, A., ed. (2018) *The Routledge Companion to Scenography*. Routledge, pp.102-118; Den Oudsten, F. (2011). *Space. Time. Narrative*. Ashgate Publishing, Ltd

[286] Dechelle, A. (2017). Scenography beyond theatre. *The Routledge Companion to Scenography*, 145.

[287] Dufresne-Tassé, C., & Lefebvre, A. (1994). The museum in adult education: A psychological study of visitor reactions. *International review of education*, 40 (6), p. 475

[288] Achiam, M. F. (2016). The role of the imagination in museum visits. *Nordisk Museologi*, (1), p. 92.

[289] Appendix, *Interview with Matt Schwab, pp. 136-137*.

Translating imagination in to the physical experience is important to consider as working with a physical and mental state of the visitors. Transition as a mental state can be evoked by the threshold experience, as discussed in the chapter *Space and Narrative in Exhibition Design*. Juri Nishi refers to the threshold experience as the preparation of the body for an exhibition world which the visitor is going to experience. Threshold is a confirmed and acknowledged concept by the practitioners who were interviewed, it is essential to any exhibition, however, can be an especially powerful tool in immersive exhibitions.

Role of a designer

The role of the designer in the exhibition design process has been brought up in research[290] in regards to how designer's responsibilities in reality are often limited to visualizing of the three-dimensional spaces in accordance to an already developed exhibition plan by the curators. Attempting to discover which processes affect the design ideas which could be interesting to implement and experiment with but which could not be realized, I found the following factors: conservation guidelines, designers not integrated in to the design process from the very beginning of it, and collaborative nature of designer-curator relationships The conservation issue mentioned by Juri Nishi is, of course, something that museums cannot ignore and that is acknowledged by the designers, however, new ways of thinking about working around those conservation guidelines jolt to create new types of exhibition experiences. In fact, the team who worked on the Hokusai exhibition in Milan has managed to work around the conservation issued of Hokusai's work and present a successful result of an immersive exhibition which is discussed in the chapter *Examples.*[291]. The conservation obstacle was that the exhibition collection consisted of around 350 drawings which are sensible to light. The team has gone around this issue by figuring out a lighting solution, thankfully there were lighting designers on the team from the very beginning of the process. Because lighting became a solution to one of the main issues, it has taken a major role in the design planning. Lighting was considered not as an additional element which could be integrated later but as a pillar to creating the right for the space and artefacts visitor experiences. Another issue was the very structure of the building and the rooms dedicated to the exhibition space. The museum is located in an old palazzo in which the typical structure is the enfilade of small rooms connected one to each other – a difficult gallery space

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[290] Roberts, T. (2013). Interpretation design: building knowledge from practice. (Doctoral dissertation, Swinburne University of Technology, Melbourne).

[291] Chapter *Examples, "Hokusai, Hiroshige, Utamaro", Milan* pp. 89-107

for designers to work with. When designing with such spatial constraints, it becomes essential to first start with thinking about the visitor experience and then careful layout of the collection through space. This is exactly what the design team started with for the Hokusai exhibition project. The tendency to start thinking about the positioning of the collection prior to how the visitor experiences the space may lead to failure of maintaining visitor interest and attention, may jolt tiredness and the sense of being overwhelmed. Here I would like to quote Bruno Stucchi as he precisely describes importance of collaboration, what incentives each person has on the team and how they can be considered and were considered in their case:

> "Considering things sometimes like very nonmaterial things like light which was an important part of the idea for a very simple reason - these are drawings. So the light can't be that strong, has certain rules and that usually makes it for rather gloomy exhibitions and so on. So clearly we wanted something more intimate and spectacular at the same time. When it comes to the architectural part apart from Corrado being a super specialist and a great architect but not simply because he's an architect but because he knows you want an exhibition is about. He was turning or transforming the rooms of Palazzo Reale, which are not maybe not the perfect exhibition space, into a journey. And the curator wanted the exhibition to be able to express the content and the story and the narrative and the techniques but, at the same time, to make the emotion really blooming and the ability for a viewer to get into the world represented by Hokusai with one major, if you like, obstacle. When you talk about Hokusai exhibition or these Japanese prints exhibition most of the time you referred to a huge number of artefacts, say 350, which are all the same. They are the same size, most of the time they have similar frames so you can't really rely on a large painting surrounded by small paintings or objects."[292]

In terms of initial stages of the exhibition design process and building up of the communication between the designers, curators and clients, Toni Roberts advised focusing on the *intent* of the project rather than a *form*[293]. Form, in fact, can set the project off with limitations and preconceived ideas while the intent in the exhibition design process can be the guiding principle for addressing the exhibition goals within the particular gallery space. In relation to initiating the work process with the people who are involved in to the exhibition design, Toni Roberts pointed out that if a designer works as a contractor for a museum, then the aspect of educating the client often takes place. Educating about what

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[292] Appendix, *Interview with Bruno Stucchi*, p. 165.

[293] Appendix, *Interview with Toni Roberts*, pp.155-156.

the design process is, what are its stages and what the role of the designer is in this process. As the result exhibition designers lose project time explaining how the design process works in order to ensure that the designer and client are on the same page and to avoid issues related to miscommunication[294]. As one of the issues working with curators, she pointed out the "shopping list" mentality of curators who want to show as many pieces of collection as possible in one exhibition. This often is not possible due to the project scope such as exhibition goals and objects, space limitations, budgets, amount of content in relation to staff's time, budget and space. It is necessary for both designer and curators to be aware of such tendencies and find ways to approaching such arising issues with an open mind and constructive discussion. While this sounds trivial, it is extremely important in everyday practice.

The designer-curator relationship can take different dynamics, the least effective and positive one for the final exhibition designs is when curators are dictating and imposing their visions and as a result diminishing designers' role to a visualizer of their ideas. Marta Durlej pointed out that miscommunication can affect the final results, which can be interpreted as the fact that listening is important as well as precise description of the ideas keeping in mind that one concept can be interpreted differently based on colleague's background and views. An effective dynamic nurtures a collaborative relationship in which designer and curator can openly share and bounce their ideas off each other openly and playfully, that is to say that the expertise should penetrate the mutual exploration of concepts and designs rather than dictate the "how". An example from Juri Nishi illustrates such successful relationship in which Juri Nishi proposed an approach which the curator picked up on and worked with adding and suggesting her visions. Juri Nishi described such working relationship with warmth and excitement for what possibilities the process and collaboration can provide. The loss of the rigidness in the process of conceptual development and some design phases tends to result in more genuine experiences which, hopefully, visitors can detect. I say "hopefully", because this current research has not been concerned with the understanding of this issue, however, further research could shed light on the topic of genuinity of an experience which an exhibition provides.

Reflecting on the designer role in the process within the organization, the insights of Trevor Streader have been valuable to this research. Trevor Streader has been advocating for the role of the designer and has achieved some changes in the organizational structure of the design process at the Melbourne Museum. He advocated for the designers to be seen in the process as contributors to innovation and design thinking rather than technical servants

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[294] Appendix, *Interview with Toni Roberts,* pp.157; Roberts, T. (2013). Interpretation design: building knowledge from practice. (Doctoral dissertation, Swinburne University of Technology, Melbourne).

who create visualization of the proposed three-dimensional exhibition space[295]. Trevor Streader managed to position the design team within the museum's organizational structure from being a technical service area to a fully functioning design studio[296]. And this, in his view, makes a full contribution to the design of the visitor experience. He brought up the same point raised by Toni Roberts on education of the team members about the design process. It is an interesting opinion to hear from the exhibition design practitioners, because from published research on the topic of collaborative design processes[297] it seems that people should have learned best practices, imbedded new approaches into the work of their organizations, however, in practice there is a visible gap between what is published and what is being implemented. Moreover, the shift of the role of the design team from being a technical service to being the co-creators of the content and experience also creates shift in the hierarchical systems of design process where at the top of the hierarchy is the curator or sometimes the director and at the bottom – a designer as a visualizer of the ideas. Hierarchy implies authority and authority does not contribute the development of intuitive and resonating visitor experiences as it is often dictated by the views of a single person or views of a small group of experts. When the weight of authority is taken out of the process, therefore, the fear to be wrong and contribute an invalid idea is not present. This also allows designers to step in as the advocates of the audiences and are responsible for the front-end experiences[298]. Moreover, putting emphasis of the role of design as creation of experiences rather than creation of three-dimensional environments and / or their visualization helps to position design and designers at the core and initial phases of any exhibition design project[299]. Such shifts in the organizational structure also brought some changes to how exhibition ideas are prepares and tested – through testing of prototypes with the targeted audiences and getting their feedback before the exhibition is actually built. This is not a novel practice implemented by the Melbourne Museum, however, it is a concrete example of the repositioned and readvertised role of a designer can lead to the change in the exhibition design process to ensure that resources are used effectively.

The collaborative work between the designers and curators from the very inception of the project has also been marked as an important contributor to the success of the designed project by Bruno Stucchi, the graphic designer

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[295] Appendix, *Interview with Trevor Streader, pp. 161-162.*

[296] Ibid, p. 163**.**

[297] McDonnell, J. (2012). *Accommodating disagreement: a study of effective design collaboration.* Design Studies, 33 (1). pp. 44-63; McKenna-Cress, P., & Kamien, J. (2013). *Creating exhibitions: Collaboration in the planning, development, and design of innovative experiences.* John Wiley & Sons.

[298] Appendix, *Interview with Trevor Streader, p.163*

[299] Ibid, pp. 163-164.

who has worked on the Hokusai exhibition in Milan[300]. He prescribed the satisfying result of their exhibition to sitting down together from the very beginning with the curator, the architect and lighting designer to brainstorm and develop ideas and experience from scratch.[301]

Exhibition design process is an evolving field, of course, types of communication and tools or methods with which team members with different expertise communicate their visions is certainly worthy of continuous investigation in the future. Further research on the tools which designers use to communicate their ideas such as boards with visualizations, scaled models, look and feel images, three-dimensional digital renderings of the space, can be conducted in order to understand how the tools might be constraining and affecting the final results. Juri Nishi showed her interest in this topic by questioning what happens if these well-established into the design practice tools are taken away.

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[300] Chapter *Examples, "Hokusai, Hiroshige, Utamaro", Milan* pp. 89-107

[301] Appendix, *Interview with Bruno Stucchi,* p. 165.

DISCUSSION

Over the course of this research, through the qualitative analysis of semi-structured interviews and email questionnaires with exhibition design practitioners, this research aimed at providing clarity on current exhibition design practices on immersion in exhibition design. The lack of thereof created misconceptions about immersion among museum professionals who often tightly associate immersion with highly technological environments which is not necessarily true because, as this research argues, immersion is imbedded into the very conceptual structure of the exhibition which designers think through from the initial stages of the exhibition projects. The insights from the practitioners provide invaluable material which is not found in publications. The benefit which came out of the limitation of data collection for this research is that honesty of opinions. As it was stated in the chapter *Methodology*[302], one of the limitations was denial of access to talking to the exhibition designers who worked on the exhibitions which were presented in the chapter *Examples*[303] of this research and were initially planned to be used as case studies. Presumably, designers who are affiliated with museums for which they work could provide dishonest opinion on immersion stating the views of a museum rather than their own views as designers, as humans who create exhibition experiences for other humans. Therefore, this limitation has turned out to be the benefit which provided access to rich data and honest opinions of interviewed exhibition designers who were not the museum employees but professionals from independent exhibition design companies.

Exhibition designers from London, Melbourne and Milan have contributed to this study, the findings showed that in many ways their thinking about the structuring of the visitor experience is similar, in other ways they presented different points of view on immersion in exhibition design. For example, several designers from London compared immersion with being immersed in water, being fully in something, however, one designer who was also from London stated that immersion is not about being fully surrounded by something but it rather relates to answering the questions of "what" the goals of the exhibition are and "how" they can be executed in the given physical space. Which points out to the fact that within this study's sample of seven interviewed exhibition designers from three different countries, there is no division or difference in thinking about immersion based on the cultural background and the museum context designers work with.

The findings showed that that the theory of liminality as a consciously applied concept is not used in practice by the designers. Practitioners, however, refer to the importance of creating the threshold

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[302] Chapter *Methodology,* pp. 84-88

[303] Chapter *Examples,* pp. 89-107.

experience in such a way that it helps visitors to enter the narrative world of the exhibition. The findings from the interviews about threshold and what it means in practice confirm the applicability of the concept of liminality to exhibition design. While the terminology is different, the idea behind the philosophical concept and a technique applied in practice correlate. It will be worth is exploring the applications of the concept of liminality to narrative spaces, testing and experimenting with how threshold can feed into the theory of liminality as applied to exhibition design.

Designers also think through designing of the exhibition environments and positioning of the artefacts in such a way that they trigger visitor imagination so that they create an entry point or threshold into the exhibition world. They use techniques related to the structuring of the visitor experience and spatial narrating and those were prominent in the interviews with several designers who drew analogies of exhibitions with landscape design musical compositions, rhythm and patterns in dance. This is one way to creating interpretation by means of spatial parameters and narratives stepping away from the didactic presentation of information.

For instance, Matt Schwab[304], the founder of All Things Studio in London, shared that he creates exhibitions as a walkthrough, a landscape in which unexpected views open up once in a while and highlight the artefacts which are the pillars of an exhibition. This approach of creating surprise to enhance visitors' perception of certain objects is a way to allow visitors to understand and interpret what they are seeing without the need to read object descriptions. Suspense and surprise is also used in narrative structures in games, in literature, in film. Exhibition narratives can also be structured according to the rules of suspense-surprise where surprise cannot be exceed three times[305]. Juri Nishi[306], an exhibition designer from the Victoria and Albert Museum in London, in her practice brings structures from architecture, music and, choreography and uses rhythm and harmony to organize and communicate the contents of exhibitions. Creating visitor experiences as spatial compositions where objects of cultural heritage are in relationships with each other helps visitors to draw their own conclusions just by means of walking around the exhibition and not necessarily engaging with the second level of interpretation presented in the form of graphic panels and descriptive labels.

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[304] Appendix, *Interview with Matt Schwab*, pp. 133-138.

[305] Freakonomics, July 29 2915, How to Create Suspense, podcast. Retrieved from [https://freakonomics.com/2015/07/29/how-to-create-suspense-full-transcript/]

[306] Appendix, *Interview with Juri Nishi*, pp. 139-150.

Matt Schwab[307] pointed out the importance of creating multiple views instead of a creating a singular viewpoint. Juri Nishi highlighted that leaving space for visitors to imagine is crucial to allow them to immerse into the context building because overinterpretation of an artefact might create distance between the visitor and the object. Brian Studak, a founder and designer of an exhibition studio PLAID in London distinguished the importance of sustaining a singular vision in exhibition design and interpretation approach to help visitors locate themselves within a framework of a certain narrative[308]. Cultural heritage interpretation should be subtle in order to allow visitors to imagine the past, placing objects into those environments and enlivening them.

It was also discovered that the main issue in the design and interpretation practice is client's unfamiliarity with the interpretation and design development process. Educating the client who commissions an exhibition about the steps and approaches takes up significant time allocated to the project. Therefore, it is important to create trust within the teams and clearly allocate the roles and tasks of the designer team and the client.

The most prominent issue in the development of immersive design and interpretation for the artefact display in museums is creating coherent subtle experiences which leave space for visitors to imagine, to extend the story provided through the interpretation of an exhibition as suggested in the research of Dufresne-Tassè and Achiam. Changes from the didactic tone of interpretative texts to the tone and structure of writing which would jolt visitors to imagine bits of the story by combining analyzing the objects they are looking at, their own experiences and knowledge with the text created by the museum professionals, could help to address visitors-thinkers, to make start a dialogue with the visitors.

Addressing this issue illustrates the existing gap between practice and theory was confirmed through the interviews data with the design professionals. The gap between theory and practice can be a common issue in many disciplines, however, in museum and exhibition design it is important to feed research into the design practice and vice versa in order to ensure that designers can actually rest the theories which researchers propose and validate them through practice. And in return practice will contribute to the proposed theories. Such approach can also result a format of practice and action-based PhD research, for example, but that format is likely to have a limited impact. Returning to the point of theories which are not referred to by designers in their practice, through literature analysis it was discovered which techniques trigger visitors' imagination, however, the interviews with design professionals that practitioners do not use the theoretical framework of Dufresne-Tassè and Achiam to evoke visitor imagination.

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[307] Appendix, *Interview with Matt Schwab*, pp. 133-138.

[308] Appendix, *Email questionnaire with Brian Studak*, unpublished, p. 114-115.

In the comparative case studies of three Hokusai exhibitions in Milan at the Palazzo Reale, in London at the British Museum and in Melbourne at the NGV, it was noted that aspects such as composition, rhythm of the space as well as the ideas of liminality and frame can be integrated into the interpretative design and used in an art exhibition which uses traditional interpretative tools. The exhibition "Hokusai. Hiroshige. Utamaro" was found immersive because designers have thought of the exhibition narrative as an experience, they used the elements of scenography such as color, lighting and "routing", using the terminology of Atelier Brückner, or a visitor walkthrough, using widely accepted exhibition terminology. Moreover, the exhibition included other important elements of immersion which are the threshold and iconic experience which in the narrative structure constitute introduction, suspense and surprise or conflict and resolution. Elements of immersion were not found in the exhibitions at the British Museum and the NGV.

The limitations of this study indicate how research on validating of certain theories in exhibition design and museum practice can be improved in order to collect the most comprehensive set of data. Particular to studies in exhibition design is limitation of access to the information. The initial plan on data execution for this dissertation was not possible due to the denial of access to exhibition documentation and museum professionals who worked on the exhibitions taken as an example to inquiry in-depth information. Museum policies vary, especially, country to county, however, the information sharing policies around exhibition design documentation have always be considered first-thing when starting the study. Therefore, due to the limitation of access to the exhibition drawings and exhibition designers and curators, this research shows only a fraction of how immersive is designed based on the researcher's expertise in exhibition design practice and its evaluation and on the data from the interviews with the museum professionals.

CONCLUSIONS

Over the course of literature analysis and data collection, this research followed three aims: 1). understand what theories can be applied to enhance immersion through exhibition design, 2). examine how theories can be integrated into design practice, 3). identify what exhibition designers consider immersive exhibition environments in order to document opinions of those who lead the field.

The investigation of theories related to immersion was conducted through literature analysis in the fields of exhibition design, interaction in museums, learning styles in museums, psychology of learning in museum environments, architecture and scenography, digital interactives in museums, liminality and construction of embodied experience in architecture. This research left phenomenology out of the scope of in-depth analysis because it uncovers a large area for investigation which corresponds with the visitor studies on visitor perception and interaction with objects and cognitive processes evoked with the stimulus provided by the exhibition environment which were not corresponsive to the aim of this research to study design technique for evoking immersion. Just two particularly relevant studies on imagination which feed back into the idea of liminality and threshold central to this research were considered within the framework of designer toolbox for immersion.

The answers to the second aim of examining which theories related to immersion are actually applied in practice were sought through analysis of visitor experience of three Hokusai exhibitions and interviews with exhibition design practitioners The foundations of what constitutes immersion in exhibition design were investigated, aimed to find concrete methods and factors which help to create a better understanding of the topic and eliminate rushed conclusions that immersion is created only with an integration of multimedia tools into the exhibition. Immersion which can be created through narratives and spatial design was sought and investigated. Cathedrals, for example, are immersive architectural spaces due also to the sacredness which is created with the scale, materials, light, symbols. Films and books can be immersive depending on their structures. How can tangible architectural places and intangible stories communicated through image (film) or text (books) be immersive? Since exhibitions combine both elements – narrative and architectural, we have questioned what aspects in architecture, films and books create immersion and why. Uniqueness of exhibitions is exactly in the interconnection of spatial narrative and contextual narrative.

The reliance on technology to create immersion should be reconsidered in exhibition design because 1) exhibitions are both spatial and contextual narrative spaces and it is essential to consider the foundations of the embodied visitor experience with the physical space, 2) technology is only one of the tools for interpretation and it is not always the most suitable one for the goals of the

exhibition. This is not the novelty anymore, however, it has to be repeated and brought up to the attention of not only exhibition designers but those who create exhibition briefs and highlight preferences for usage of technology in exhibition design. Since designers often work with exhibition project briefs and submit their proposals for the tender, they have to address all the criteria of the brief and think of what would be a satisfying project proposal to those who will be evaluating it according to the brief. Often the perception that technology is the best tool to communicate content, many interpretative choices are made based on that assumption and are tied within the scope of that the tool rather than based on what the goal of the exhibition content is. Therefore, the goal of this research was to evaluate immersion in current exhibition design practices shifting away from technology and looking at the narrative foundations, because designers are storytellers and communicators who need to convey complex and multi-layered exhibition topics to a range of audiences. This has been reached through the analysis of three exhibitions discusses in this thesis and insights from the exhibition design professionals.

Advancing the understanding of the practice-theory relationship of designed exhibition environments and, in particular, immersive techniques, contributes to evaluating and re-evaluating immersion in exhibition design in practice and theory. The in-depth studies on exhibition design practices appear necessary and also challenging due to the contextual factors which are in slow flux such as cultural trends, shifts in the modes of spectatorship and learning theories. This research is important to identify the trends, demands and issues in designing immersive exhibition spaces.

Further research expanding the topic by investigating it several directions where immersion is applicable could be beneficial for the understanding of the multiple applications of immersive techniques as well as their variety. That is to say that an exhibition with no technology in it and only displayed collection can be as immersive, if it integrates liminality and aspects which jolt imagination discussed in this thesis, as a digital environment as posit other researchers working in the field of human-computer interaction.

Firstly, on the conceptual level and its application to the visitor studies, liminality and the process of becoming immersed can be studied within the framework of phenomenology. This would imply careful examination of visitor experience in a particular setting (case study) using a mix of evaluative methods which include self-reflection on experiences, i.e. surveys or interviews, and measurement of the physiological parameters as the person is walking through the exhibition. Such research could primarily focus on the relationships between visitors and objects as unpacking the responses to the environment is a loaded and complex topic of inquiry on its own. Investigation in to the human-object relationships and building on the previous research in this field could illustrate whether audiences' expectations of museum

experiences and their interaction with the material culture is changing over time.

Secondly, examination of communication and the work process on the exhibition between the client (museum) or the museum director with designers and with curators or researchers can be essential to understanding which processes, decisions, preconceptions and unquestioned status quo might affect the final exhibition outcome. Relationships and dynamics are an important factor which can guide the creative process and decision-making. Better understanding of how the project moves from inception to conclusion can open up previously poorly studied area of managing creative resources (designers input) within the rigidly structured process of exhibition design.

APPENDIX

Interview with Matt Schwab, exhibition designer and founder of a London-based exhibition design company *All Things Studio*
http://www.allthings.is/

June 15, 2017
London, UK

Matt Schwab is a founder of All Things Studio, the studio works on museum and exhibition design projects as well as it conducts research for the sites which are to be transformed into museums or cultural heritage sites. Prior to starting his own company, Matt has worked as an exhibition designer for Atelier Brückner and Ralph Appelbaum Associates, the companies known for using scenography as their exhibition design approach.

Researcher: Matt, you have training in Industrial Designer, right? Then you shifted to Theatre Design and now you work in the field of Exhibition Design. What do you think are the essential differences between theatre design and exhibition design or whether these fields are intertwined?

Matt Schwab: I guess in my experience at the time it was not the kind of theatre that happens now - immersive or promenade theatre. Promenade theatre is an old term from the 70s for when you really move around with the actors but it's sort of being reimagined by PunchDrunk. [PunchDrunk is a London-based company which is famous for its immersive production "Sleep No More" based on Shakespear's "Macbeth". "Sleep No More" took place at a McKittrick hotel in New York occupying all six levels of the space. The visitors were given the masks to wear on their journey through the play. They were invited to be the spectators and the participants][309]. So the stuff I did was more about the audience on one side and the stage on the other, so I guess one thing about museums and exhibitions is the audiences is in the space, so practically it needs to be more robust. And, you know, the way theatre is put together is very superficial and it's only what can be seen is the important bit and the rest of it isn't. So there is more of this overall holistic way of how to design things. And I guess that as far as the audience's concerned that, and this idea from Atelier Brückner[310], is that the audience becomes the actor, so they give it [space]

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[309] Author's note on PunchDrunk; [https://www.punchdrunk.org.uk/sleep-no-more/].

[310] Atelier Brückner is an exhibition design company founded by Uwe Brückner in Stuttgart in 1997. Uwe Brückner is one of the first to popularize scenography as an approach to creating exhibitions and generally "scenography" is a commonly used term

life in a way along with other people that are there.

R.: There's been a shift in thinking about audiences as actors in the space. Frank den Oudsten[311] and Brückner[312] have talked about how space, time, and narrative come together in the space and become the meaning-makers throughout the unfolding scenography of exhibition spaces. Do you think visitors really notice this shift to scenography, to becoming the creators of the meaning in exhibitions?

M.S.: I don't know if they notice it at all, I think it's a subtle thing. Sometimes more than others, it depends. I'm just thinking about examples. I think the examples where it's most prominent, almost obvious - they are more about Expos or visitor centers or these kinds of things where you know it's not so much about a collection of the museum itself. So I think if you bring that approach to a museum to a certain degree, it has to be sublimated to what the main point is - which is to get a collection out. So I think it comes across in subtle ways. I think what the visitor does get is when the space is consistent and sort of complete in whole. They are immersed because they're totally in the space and it doesn't lead off into other places or changes idea and so on. So I guess it's in that sense maybe a subtle thing but maybe they notice it more when it's not there when they keep getting thrown out.

R.: The whole feeling, I guess, the whole kind of atmosphere or one exhibition message probably affect people more than the small diverse elements that are not quite connected.

M.S: I think so, I think that's a good way of putting it. That's something to me that's important. I don't know whether it is to the museums themselves. And it's one of those things that's really, really hard to achieve. And it keeps getting chipped away by, you know, little things like having to have fire extinguishers or exit signs or air conditioners that are badly placed in space or just the needs of the content and the curators and so on. I think that's maybe the battle - to try and push it as far as you can - in one direction to make this sort of complete whole thing, fend off all the extra bits they are trying to add or impose maybe.

R.: There is an emerging body of theoretical research on how visitors connect to

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for exhibition design in Germany whereas in the US it is not as popular and in Russia it is referred to an installation-like elements of exhibition which communicates the content [http://www.atelier-brueckner.de/en]

[311] Den Oudsten, F. (2011). *Space. Time. Narrative*. Ashgate Publishing, Ltd.

[312] Christian Barthelmes and Frank den Oudsten (eds.), Scenography/ Szenografie: Making Spaces Talk/ Narrative Raume/ Projekte 2002 – 2010 (Ludwigsburg: avedition GmbH, 2011).

objects and what kind of relationships occur[313]. An exhibition is not complete until it has a spectator, i.e. a receiver, someone who makes meaning. So I'm wondering whether you try to think through how visitors make meaning or create relationships with the objects based on how you've designed them to be displayed.

M.S: I think your question implies lots of things that we don't do like really more co-curated approaches and ways to actually contribute and be involved. But that's something that probably I need to do more often. I think the things that I'm talking about are quite subtle, they are about, you know, the height of things making some relationship to maybe their original height so that you can look up if it needs to be looked up to or you look out to or if it exists in the landscape to have it at eye level in relation to other things that would have existed in that landscape. When you enter a space maybe your approach is a certain key object and maybe you're approaching it obliquely and you can get a glimpse and then you have to come around - those kinds of things. I think that is a really interesting and nice approach is to think about those different stages.

R.: Speaking of visitors, there's been research on what actually ignites visitors' imaginations, what kinds of things. And researchers have studied the topic through the type of conversations people are having when they are next to the objects. Obviously, they couldn't get into people's minds but there had to be a conversation between two people in order for them to make sense of the data. A Canadian researcher Colette Dufresne-Tassé[314] has done research on which kinds of mental activities visitors perform as they walk through the exhibition spaces, identified several ways of processing information. Then Marianne Achiam[315], a researcher from Denmark, takes the analytical framework suggested by Dufresne-Tassé and applies imagination of visitors as a factor to it. So when people do the following actions: exclaim, observe, identify, judge and verify - they use reasoning about what they see. Imaginative includes the following actions: associate, predict, suggest. So they are not relying on certain facts but they're trying to imagine scenarios and make suggestions, i.e. proposing something that is out of the provided context. And then there is a whole bunch of combinations coming out of both types which could both be cognitive and imaginative: justify-explain, resolve, compare, grasp, clarify,

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[313] Diamantopoulou, S., Insulander, E. V. A., & Lindstrand, F. (2012). Making meaning in museum exhibitions: design, agency and (re-) representation. *Designs for learning*, *5* (1-2), 11-28; Griswold, W., Mangione, G., & McDonnell, T. E. (2013). Objects, words, and bodies in space: Bringing materiality into cultural analysis. *Qualitative sociology*, *36* (4), 343-364.

[314] Dufresne-Tassé, C., & Lefebvre, A. (1994). The museum in adult education: A psychological study of visitor reactions. *International review of education*, *40* (6), p. 475

[315] Achiam, M. F. (2016). The role of the imagination in museum visits. *Nordisk Museologi*, (1), p. 92.

modify[316]. So they could trace only three types of reasoning which are igniting people's imaginations - suggest, associate, and predict. Do you try to think how to make visitors imagine something beyond the context that is given for an object? Because immersion relates to how much space as a designer you give people to imagine.

M.S: You know these frameworks like this one that people used to think about learning styles, active learners and all those things which I've seen some research on and, they don't think that that's actually applicable anymore. I don't know at the moment whether there's anything that anyone can grasp onto that's a really proven, definitive way of evoking people's imagination or whatever it is. So, I mean, I certainly don't know what it is. Maybe it's a superficial approach. With this Whitby Abbey [project][317] putting all of that stone work up in a mass spectacular display. If nothing else that's memorable and it gives that strong visceral impression. I don't think you could say what impression it gives you, you could not say that people have learned more about medieval stone masonry. But I guess it's something and then if they're interested they can go into further details.

R.: Make an impression in a way?

M.S: Make it as beautiful or spectacular or confronting or whatever it is. Not everything but certain moments, I guess.

R.: What would you say makes a good exhibition designer in our time of popularisation of museums? What do you think the skills are, is there something that is particular of today?

M.S: I wish I knew what it was. It would make things clear but I think there is maybe a tension between the ideas you are getting an example of at V&A and what they keep putting on - these big blockbuster exhibitions of rock bands, heavily based on nostalgia or experience. You know the experience of being in the space, really dark spaces, lots of media, sound, light - that kind of stuff. Then I think it's not going to go completely that way because there's this pull back of going back to the connections and making them cleanly and beautifully. That's the only way I can think things are going in this country at the moment, and I don't know if it's got any relevance outside of the UK, but just a pulling back because of financial constraints and the idea of Brexit and leaving the wider world and, you know, only working with English people. It's a less

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[316] Ibid, p.94.

[317] A tender for an exhibition design project for Whitby Abbey which All Things Studio has participated in; information on Whitby Abbey [http://www.english-heritage.org.uk/visit/places/whitby-abbey/]

ambitious period maybe.

R.: What are you looking for in conversations with curators that you think is quite helpful for you as a designer? Or are there any particular things that you usually try to find out that would help you think further about spatial design?

M.S: Yeah, it's a good question. There isn't a specific list or a deliberate approach. Each project has something that you get a way into that aura. That is something that comes out of the content that you can use to inform the design. I think always the curators who have been working on a particular subject for a long time are really immersed into it, they know a lot about it. Sometimes it's their whole life that they've been doing that so I am always quite keen to let them firstly just talk about the collection, the content, whatever, but also if they do have any ideas about how the space should be, just listen to that and try to be quite collaborative and be open to that.

R.: So you actually are trying to find out what their visions are.

M.S: Yeah, absolutely. I think just because it's just courtesy really. At least to just listen to them, to not always literally do what they say. And some curators say: "Well, you are the designer, you do it. I think that even the ones that do say that have no idea, they can't help but when they are creating an exhibition, to imagine it in their mind in some way. So I think it is useful to try and draw that out near the start just to, I guess, avoid problems later when it somehow disappoints them, that it somehow has not been up to what they imagined. You know, I think everyone has ideas about space and color and so on, but they are no less qualified really to have an opinion on that. I think just strategically it's better to have these conversations at the start and to make them feel included and listen to them not to find out later that they don't like pink or that this one key work needs to be given more space. I think it's just how you collaborate with people trying to bring them on board. That's the theory, that's my theory, it doesn't always succeed. With Manchester Imperial War Museum, we started off really well, the curator and I going through things, being very collaborative. That worked really well for sort of 70-80 percent of the project. And it was just in the final phases where other people have just intervened and undone all of that.

R.: Yeah, this is interesting - the collaborative dynamics. I'd like to ask you a general question about the term "immersive". What's immersive to you and what do you think it is in exhibition design in relation to this particular type of entertainment? Is there a way you would describe it.

M.S: I was once working on a project with someone here in the UK at RAA[318] where we were talking about a sort of an existence of a small niche, almost like a side chapel at a church. And we were talking about what to do with it. We were talking about sort of huge light box with an image within the walls and how that is immersive whereas to me one view can't be immersive. I think at the time I was using an analogy of being immersed in water. You cannot be immersed in water if only one leg is in or if you are half inside, so it is about being fully in. And in that case, I think, all of that three walls, if not fourth one as well needed to be part of this natural scene. So, I don't know. I think it is about being committed and I guess excluding everything that is irrelevant and trying to commit to one particular place, idea or whatever it is. One of the examples that Brückner always used to use with this Titanic exhibition[319] which, I think, is the first thing they did. And there is one room which, I think has white walls, but they use blue lights. I think that is kind of what you imply, but they did not draw the ocean or, say, draw, depth or whatever to give that extra context, but it's very simply presented, having high impact with those means. And I was also thinking about, you know, if you are lying in the field and looking at the sky, I think that is an immersive experience.

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[318] Ralph Appelbaum Associates is an exhibition design company founded by Ralph Appelbaum in New York in 1978, now it has offices in Beijing, London, Moscow, Berlin, Dubai [http://www.raany.com/]

[319] "Expedition Titanic" is an exhibition that Atelier Brückner has designed in 1997 in Hamburg for the Voyager Titanic Exhibition GmbH client [http://www.emee-young-scenographers-contest.eu/en/projects/expedition-titanic]

Interview with Juri Nishi, exhibition designer at the V&A

https://jurinishi.wordpress.com/

July 28, 2017
London, UK

Juri Nishi is an exhibition designer at the V&A who integrates ideas and tools from choreography, such as rhythm and composition, into her exhibition designs which creates visitor-focused exhibition spaces.

Researcher.: I've read that you are trained in choreography, architecture and exhibition design. Do you somehow combine the aspects of choreography with space design and vice versa? Is it at all possible?

Juri Nishi: Yes, absolutely. It's what I'm interested in. Choreography is a funny word to be honest. People use it, non-choreographers or non-trained people like curators, designers, and I find it very interesting because I know that they don't actually know what choreography means as a practice, not necessarily because I know. And I've been to a talk, it was organized at the Shoven Babies, and by a famous exhibition designer. He does a lot of exhibitions for the Wellcome Collection[320] and he has published a book as well. And his talk was about how he uses choreography in exhibition design. So I was very interested to hear his approach but I did not see it in his thinking, in the work. So I asked at the end of the talk "Could you just speak a little bit more about your understanding of choreography and how you utilize it within your design process?". And he said "I know nothing about choreography. In fact, I don't use choreography in my work". And I thought "Oh, that's interesting", because the title of the talk was about choreographing spaces and choreographing exhibition design. And so that's when I started to really question what it means. And for me it's not really revolved around the word "choreography" itself but it's more about the relationship between the understanding of the body and the space and also the mind and the senses. That's what I'm very much interested in. And so it is choreographing spaces in a sense that it's also about choreographing time - how the story unfolds over time and space. And also about, you know, tools that you use in choreography like repetition or tones or kind of volume or something like this and lighting, of course, it's a theatrical element. So those things I am very much aware of and I have a wider understanding, perhaps, of how the story can be told through the practice of choreography or dance. But the core is very much more in the understanding of

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[320] Wellcome Collection is a museum in London which displays Henry Wellcome's collection of medical artifacts and objects related to historical development [https://wellcomecollection.org/]

the body so everything I do comes from my body and my understanding of my body to space. And just like most architects, you know, when they design they design through their perception of the world. So it is the same thing and that's how I see it.

R.: What you say is interesting because I've seen lots of references to choreographing space but it seems more of a metaphor in a way rather than actually incorporating choreography into exhibition design. So how do you use repetition in designing an exhibition?

J.N.: It's very basic, you know, it's like in architecture. You have a motif and then use that motif through repetition so you could do that with anything. I mean, it's just a device, it's an intervention. So it is exactly the same as architecture.

R.: That would mean repetition through the body experience too?

J.N.: Yeah. Well, if you don't repeat the motif, people forget, so that is the basic concept in choreography. You repeat things so that people don't forget. And it's much more obvious in dance because it's one split second and then if you don't repeat the movement, it doesn't stay. So the idea is you can also do the same but you have to compose it. So, in a sense, choreography is like, might not even be the right word to be honest, it might be more like composition …?

R: When did you start doing choreography and have you been creating dance performances specifically for the museum spaces?

J.N.: So I started studying dance when I was, I think, early 30s. So it was very late to start dancing. And I knew nothing, I mean, I've never danced in my life. So I really started from scratch. And when you apply for work or commissions even, it's very hard to get them. So all of my commissions have been through recommendations. But I started making visual art commissions since 2007. I've been working as a visual artist for a long time on the side. So when I did Cold War Modern exhibition at the V&A in 2007[321] that's when I also started working in public arts because I was interested in creating work in social realm. And I was also interested in the practice of participation and sort of healing environments and what can design do more than just aesthetics. And the work in the office I was working at was heavily retail and commercial, hospitality and retail. They were good projects, many people would love to do those projects. But it wasn't what I wanted to do. Well, let's say my heart was not,

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[321] Brief description of the "Cold War Modern" exhibition at the V&A
[http://archive.upcoming.org/event/cold-war-modern-art-and-design-in-a-divided-world-1945-1975-390372]

you know, singing. And there was something missing. And so I started to look for that through public arts, so I did lots of drawings and murals, etc. So basically surface design but to really transform spaces through something else. Essentially what I was doing was creating art interventions or using art interventions to change, transform spaces or experience of the space so it's actually creating something beyond the walls. And so, I think, probably my work roots from even back then, to be honest. And then gradually as I got older, I became more and more interested in something else. And I love doing exhibition design. I like the educational part of it and also learning for myself to share that experience with other people to inspire people and then to take away something. Something that really means something to other people was really fulfilling for me. And since then I've been consciously looking for work in museums. So, in a sense, even for performance I'm also interested to bridge that gap that it has. I felt that when I was interested in dance. Dance can be quite pretentious just like architecture. I think if you're not trained in it, you feel you don't understand it necessarily or you might understand bits of it but you often read a huge paragraph of theory to understand phenomenology or all these kinds of things. And it can make you feel quite small. And that was something that bothered me. I think good design or good art should really speak without even words. It should be able to connect on a deeper level.

So this has been sort of one of my aims in my work and to create something that the body can understand without kind of embellishment of "concept is this" or "concept is that". So in a way it's very honest work that I want to create and very transparent. And I started to make work in performance that is participatory based so I'm always trying to blur the boundary between the audience and the performer. How do we get people involved in a practice that they don't necessarily feel connected to or they don't really understand the process. And I think a lot of my work now goes towards that direction and I think same goes for exhibition design. I actually use that too, in a sense, I try to create experiences that are more intuitive. I think you should go to an exhibition and feel something.

R: When I talk about exhibition design having these invisible qualities which connect people to concepts and ideas without much explanation or interpretation, people ask me "But how do you do that?". Do you test your ideas that seem to communicate through subtlety (models, small prototypes, etc.) or do you ask opinions of other team members?

J.N.: It really is project dependent. The process between choreography and performance and making a performance and making an exhibition is completely different. Although I have my own process that kind of cross bleeds between the two. But that's actually much more in the thinking rather than the process itself I would say. And sometimes they merge so much. For example, I

was working on the Design Museum *California* exhibition[322] color scheme. At the same time, I was working at the Royal Academy commission and then I was also working on the V&A project. So all of those three on the unconscious level, I think, they are actually connected in some ways and, perhaps, I don't even know at what level but the interest sort of bleeds from one place to another. So for Design Museum I was using color as a way to express a sense of place. The sense of place of California, the lights, the scene - all of this. That was the main very simple concept behind the sort of the spine of the project and there are many layers on top of that. There is a space frame structure we used and what was about sort of enabling DIY and freedom to construct your own environment. So everything is about layers. But color was one layer that I was working and what I was trying to do there was to create a field of light. So essentially it was like a hazed light - the light bouncing back from the sea. And that also correlates with the idea, of course, you feel the sense of freedom when you have that kind of very white light with some colors in it. And then that kind of light reflecting into your eyes and bouncing back. It's that feeling, I was trying to get that. And that correlates with the idea of landscapes that we carry on our iPhones or mobile phones - that it's lit. Often iPhones have that kind of blurred landscape so I was interested in the fact that we all carry an iPhone with a lit image. Probably landscape that can bring a sort of sense of freedom. I was kind of bridging those two and creating not a literal landscape but a kind of interpreted and slightly plastic feel.

R: That's how it felt to me actually.

J.N.: And it's impossible to define color theory in practice. It's something that is a trial and error. And I'm very much inspired by Bridget Riley's work[323] and her approach and even she says she doesn't know until she paints them. And the thing with painting is that you can control what the perceiver sees. With exhibitions you can't because they have their own journey, their own way of looking at things, their own history, cultural references, etc., and it's three dimensional, there is light and shadow. And also there's so many factors and, of course, on top you've got objects so it's not just a plain, you know. But essentially what I wanted to do was to have a kind of play with a level of the lights and color, so I put a lot of white and its industrial paint, isn't it? So I can't get what Bridget Riley does - that kind of level of quality of color, but I put a lot of white on the table so it bounces the light back into your eyes and then the colors on the walls were slightly darker. So all the verticals were slightly darker and muted. But even those colors, I tweaked them - this is where the

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[322] Juri collaborated with a London-based company PLAID on the exhibition "California: Designing Freedom" held at the Design Museum 4 MAY 2017 – 17 OCTOBER 2017 [https://designmuseum.org/exhibitions/california-designing-freedom]

[323] [http://www.tate.org.uk/art/artists/bridget-riley-1845]

compositional aspect comes because it's very much about tweaking to see where your pictures are or your volumes are. It's like composing a piece of music basically. For me that's how I see it. And it has to work with what's in that space, so it's not just about the person, but it's also about the artwork, it's also about the light, what's around you. So it's very much really about trying to understand what journey is in three dimensions. I would say that *California* exhibition color scheme was the most difficult color scheme I've done so far. Especially because I dislike pastel colors because you can easily get into this baby blue, baby pink and it has a completely different connotation. It's not what I wanted. And I also didn't want it to be this pastiche, you know, plastic.

You know, if you think of California you think of David Hockney[324] which is really beautiful but very bright. And actually in exhibitions I see lots of people using very bright colors or very strong colors but it takes away from the exhibits. And I don't want this conflict. I want it to be in harmony or even more supportive. And I believe design should not speak above the curation. But a lot of designs not all but a lot of designs don't succeed in this. Because I think it's something to do with ... I don't know whether it's to do with ego or lack of experience or it's a different style, you know, it's all of these things. I guess it's just like music: you have rock music, punk music, classical music - this kind of thing. So I think my work is becoming much more under-toned and sometimes you don't even maybe notice how much thought has been put in. Especially when I read the reviews, it becomes very clear.

R: Really?

J.N.: Yeah. So the curators and my friends have been emailing me lots of different reviews about the show (*California: Designing Freedom* exhibition). And some critics mentioned the colors interestingly enough. And some said "I love ice-cream colors". It's very interesting how people interpret. Of course it's California so it's about sort of pop and it's not where I'm going but at the same time I think it's good that people take their own story and I like that. And I'm not really interested in "This is the way I want it to go". You know it's like performance, I want people to have their own views and have their own interpretation.

R.: It's always so difficult to reach out to the diverse audiences. It's always going to be interpreted slightly differently from what has been intended. When I go to museums with my friends, we end up having quite different interpretations of the same things we see. There are so many different interpretations and threads of thought.
Have you ever thought of writing about your approach?

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[324] An English painter, set designer, printmaker [http://www.davidhockney.co/]

J.N.: I've never thought about writing a book but I've had other people suggest or ask about that. Because I think people have told me that they don't know many people who work in the way I work although there's a lot of architects who become choreographers and vice versa. But I have not heard that they try to merge the two so it's something to think about.

R.: When you visit exhibitions, do you feel like there is a need for some kind of a shift? Maybe in the future not now, maybe something that seems unrealistic to be done today but would be amazing in the future.

J.N.: Get rid of all the guidelines and restrictions even conservation. Just like lift it off. It's very different working as an artist. I've worked in different roles in museums and galleries. When I'm working as a contemporary artist making performance work I can do quite a lot especially in smaller galleries with restriction of budgets and some healthy and safety, of course. You can have this label "this is art" and it can pass a lot of the regulations. But when it comes to exhibition design, you have to pass so many conservation standards, so many things like "this can be this far" and "you cannot touch this". Of course it makes complete sense and it's also to protect the objects so you cannot have everything in the open but at the same time I think sometimes it's too restrictive. And people have very preconceived ideas about what an exhibition is. That's something I'm learning more and more. And then working with different institutions like my work with Wellcome Collection or the V&A or the British Library - they are completely different institutions and they have a different culture, of course. And Wellcome Collection was an amazing client and that was performative exhibitions so I really got along with the curator very well. It's called "This is a Voice"[325]. There was a lot of the sound of the voices and artists' installations, there were also live performances, interviews, etc.. So it was basically a mix of everything and I think that's fantastic and the programming is fantastic. Also getting to work with so many different contemporary artists who are alive, who have a voice to tell me what they wanted - it's a dialogue. So again the shape of the exhibition changes with that as well so it's not just about my dialogue with a conservator and a curator and the museum but it's about dialogue with the artist as well.

R.: How did you work on the exhibition with the artists?

J.N.: There was an overall concept for the show. That was about the skin so I used skin as analogy for containing the voice. There was a series of pavilions that housed artists' installations. And I saw the structure was like the bone and

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[325] [https://jurinishi.wordpress.com/2016/04/10/694/]

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then the installation became the flesh and then the skin. So it was more for me to really develop the materials and to have a coherent language for the show and that's quite an artistic interpretation. So I felt that I could speak with a contemporary artists and go "This is the concept". The visual language of it was very pared down. I did not want to have too much of a language so that it can give space to the work really. It's almost something that you shouldn't notice in a way. And it was more about also trying to create bodily experiences, creating transitional space so that you feel a silence before you go in the space. So it's like a preparation of the body. The journey was in a sense, perhaps, much more choreographed because I tried to think about it from the body very much because there was a lot of focus on the hearing and we're very much driven by our sight. So how do we bring that awareness or attention? And it takes the body some time to come into itself. So it's a dialogue that I've been having with a curator and the curator knows that I make performance work. So when I also worked with the artist, the artist apparently said to the curator that the space feels like it's been designed by an artist which I think is very interesting that she mentioned it. So she really loved the concept that I created and she actually played with it. She actually took my design and said "Can we do this?" and "Can we do that?", so she transformed it even to her use. It was fantastic, it became this kind of fantastic dialogue and open-ended. So I think I am interested in open-ended work, creating something that doesn't have a destination necessarily. Of course, you have to have some framework but it's about holding a space and then giving it to the people and then they take from there [something] and then something else happens. I would love that quality in exhibitions. I don't know if it's possible. You know, but in some cases - yes. And it can evolve with the people moving. And how much co-creation can you do and if it is the right thing. I would love it if there are more organizations which are willing to experiment. And just to try and not to worry too much about failures and learn from failures. And that's something that I really like about performance work is that there is this process, there's quite a lot of failures in performance, you know. You make something and it does not have anything, so you keep working and working on it. And then something else comes out of it. There's a really beautiful journey that you go through movement and through writing, it's much richer in some ways. Design is also a rich way in a very different way. And it's very much controlled I feel - the way design process is. And there's a slightly different sense of going into the unknown, you almost kind of know where you're going. And in many design studios you also use a lot of references from other people's work, especially artists' work. You look at images that you like or that are relevant. And it's a good inspiration starting point but I don't know how much of it comes from inside [the designer].

R.: This is interesting what you are saying because I was thinking a lot about the process of where we get these inspirations from. Can the process of

communicating our initial ideas for the exhibition be any different from what it is now, i.e. referencing certain work in order to communication our own ideas to the team members?

J.N.: I think, I don't know I might be wrong, but you know I'm obviously only been in a limited number of studios but many of them, most of them, have a very similar process. We all use reference images, same kind of process, same journey. It's very much defined. And what happens if we take those tools away?

R.: If you think about the buzzword "immersive", what do you think it means and how do you feel about it? What kind of experiences are immersive for you in museums as a visitor and as a designer?

J.N.: Do you know the definition of "immersive"?

R.: In the dictionary "immersion" is a synonym of submersion[326]. But in the literature about visitor experiences "immersion" is described in very different ways. Some researchers describe it as a fun experience, some state it must be participatory in order to be immersive, others refer to the importance of flow in the experience. The most referenced description is the one by Bitgood who suggested that immersion is when one is transferred to a different time and space.

J.N.: Very different, I would say so, yeah. I don't really like the word "immersive". It's often very used but I actually really think it means almost nothing, it's empty. That's what I was wondering because I've never actually looked up a word "immersive". If you think about "immersion" then I think about water and I think about submerging - this kind of thing. And also the idea, then need for an escapism and to kind of drop away from your world and go into another world. I think there's that sense. And that I can understand that there is a trend. For example, like the V&A has a lot of immersive experience, I guess, where you put headphones on and you have the full kind of experience where you have this amazing installation that's almost theatrical, that could be immersive. And then you have the other end of the spectrum where you've got Punchdrunk[327] theatre company which is very immersive, in fact. That is going into another world altogether because everybody around you is also part of this other world. But I've always have disliked it and I don't know why exactly,

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[326] The definition of "immersive" in the Oxford dictionary is related to a digital environment "(of a computer display or system) generating a three-dimensional image which appears to surround the user"
[https://en.oxforddictionaries.com/definition/immersive]

[327] [https://www.punchdrunk.com/]

I can't pinpoint why. But the question is "What makes immersive an immersive experience?" and "What are the qualities that we are actually trying to create here?" And it actually also sets strange expectations coming from the audience and meeting that. If you take it literally like Punchdrunk, people are obsessed with that show and they go back like five times, you know. I went to one and the set design was amazing, but because I'm a performer, I was understanding what's going on. If an actor improvises, I'm going to improvise, so I was being a performer already so it was very interesting, I was switching roles. And I could really understand what was happening because of my training. And it was very interesting to see that people love this, you know, like there's a need, people are thirsty to get away from whatever ... Life? The daily life? To imagine and to dream, perhaps. I don't know if that quality also exists in exhibitions, perhaps, it's more in installations. And in a way for me putting headphones on, for example, soundscape, etc. is blocking senses, for me. From my point of view, it doesn't necessarily enhance the way you perceive the content or the spaces, you actually go into your world and I don't feel it's the right approach necessarily. Because actually you're not giving people choices.

R.: I think that this approach is often considered as giving people choices because they can pick up the headphone and listen to the soundscape or they have a choice not to do so. But I also do not like the use of the word and I am looking at the essence of its meaning in relation to exhibition design, i.e. what are the characteristics that actually contribute to visitor immersion. As you've mentioned there is a desire coming from the visitors to have that sort of experience so I wonder what makes them want to have this "escapism" as you said. It's really interesting to decode what that is because in my opinion it is not a mix of multimedia stuff or participatory experiences necessarily. Very often "immersive" experiences are referred to as a bunch of things, interactives that visitors can do in each exhibition room or a gallery. I talked to Matt Schwab (All Things Studio[328]) about this and he mentioned the unity of experience maybe as one of the threads throughout the whole exhibition, from its beginning to the end which I found an interesting point. This is something very subtle, so how do you incorporate that?

J.N.: I think it is true. And I think maybe it's moments of harmony as well. And I think it's very difficult to achieve it for an exhibition because it's long. You know, the duration lasts from one hour or even 30 minutes to three hours, people's concentration … But if you think about music then it's a similar thing but there is dissonance and there is harmony. So I think when the harmony is there, people understand it. You feel it and you know it and you know it's right and it feels good. And we are programmed to see patterns and all these things

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[328] [http://www.allthings.is/]

that we're not even conscious about and that can, I think, enhanced the sense. It clicks in a way. But I don't know if that is the right term. To me it feels like it's just the easy term to sort of stick on and it's not necessarily immersive.

R.: Yeah, absolutely. This is great to hear. Thanks a lot for your time, Juri.

Email questionnaire with Brian Studak, co-founder and exhibition designer at *PLAID***,** London, UK

http://plaid-london.com/

September 1, 2017

Brian Studak is a co-founder and exhibition designer at PLAID, the company which integrates immersion into their design process, immersion not as a set of different mediums but as a system which for creating a holistic experience related to a certain exhibition topic.

Researcher: On your website, it says that PLAID creates immersive environments, i.e. spatial identities. I'd like to ask a couple of questions related to "immersive". To you, what makes an environment immersive? Are there certain characteristics that make up an immersive space?

Brian Studak: Immersive doesn't necessarily mean a seamless 360-degree environment where the floor, ceiling, walls and lighting are all connected to a singular aesthetic spatial idea - although that does make for a complete environment. I think from my perspective it's more about what the space allows you to do. What are the problems it's solving? What activities is it facilitating? Are these all connecting up?

R.: How do you construct a spatial identity for an exhibition? Or, if you will, what is the process of translating content into spatial parameters?

B.S.: For each exhibition the process changes slightly but we do try and define parameters under 3 different headings and see where that points us. Headings are:

SITE - What are the idiosyncrasies of the site and how can we exploit them for the environment and visitor path?
CONTENT - What items and ideas are on display? How can we pull these together with the design into a singular vision? What are the key moments?
AUDIENCE - Who is the target audience and what are they attracted/ engaged/ inspired by?

Note that first creative ideas can come from anywhere and be at any scale. It might be a furniture detail, a lighting atmosphere or an idea on the visitor path that triggers the momentum of the design process.

R.: A bit about the process of developing exhibitions:

Could you elaborate on how and why you are using 'play' and 'make' in your design process?

B.S.: Play and make are a way of communicating how we work instinctively within the studio. All good creative processes integrate logic and instinct. Logic is relatively easy for non-designers to understand as a process but instinctive activities are not so easy. Our finished work speaks of our internal processes - that's the transparency we speak about on the website.

R.: I believe that you often work with curators and discuss the content with them in order to design an exhibition space. If so, what kind of information are you searching for in communication with the curators (just content, their ideas about the space or visitor flow, etc., i.e. anything that helps you as designers to develop the spatial identity)?

B.S.: The curators are the orchestra conductors - they are driving the exhibition. We help them to achieve their vision and so they have to provide us with all of the information from dimensional, security and conservation information on each object to what the conceptual idea of the show are. We want to know what the key objects are and how to showcase them. We want to know what the visitor should come away from the exhibition thinking about.

R.: What do you think is a set of skills and qualities that the new generation of exhibition designers should be aware of developing?

B.S.: Drawing is important. Understanding materials and construction - hands on experience is important. Developing a point of view is key - what are they fascinated by as designers? What is their point of view on what design is generally? I always say we are designers first and museum consultants second - it just happens to be the sector which engages us and our skills the best.

Email Interview with Marta Durlej, exhibition designer at CassonMann, London, UK

September 20, 2017

Marta Durlej is an exhibition designer at CassonMann, a London-based company which has established itself internationally over the years of practice and is known for creating rich exhibition experiences.

Researcher: I am researching construction of immersive exhibitions, looking into theory and practice of what 'immersive' is defined as and how it is translated into the spatial environments, so I am curious about your views on that as a practitioner. Marta, could you talk about the process of exhibition creation at CassonMann and your role in this process?

Marta Durlej: I joined CassonMann about a year and a half ago, and since then have been working on one project, which is the new Holocaust Galleries for the Imperial War Museum in London. So basically all my experience is based on this particular process, which is quite unique, considering sensitivity of the topic. What's definitely common for all the projects that are run at CM is that from the very beginning, lots of time and resources are invested into interpretation of the given brief. There's always the content person in our team, Kirsty, then a lead designer, a couple of younger designers, Roger - we all spend days/weeks or even months (especially on projects like Holocaust) on brainstorming, researching, putting our ideas together. And regardless of age or experience, everyone's input is equally appreciated. Also comparing my experience with some colleagues working for other companies, whether it's a field of exhibition, interior design or architecture, I feel that as a young designer I'm given lots of trust and really being a part of the creative process. It depends on the stage of the project, and of course, the boring part also needs to be done, but first and foremost I really feel that I 'design'!

R.: To you, what makes an environment immersive? Are there certain characteristics that make up an immersive space you think? Examples from any fields are welcome if there are any.

M.D.: To me to create an immersive environment is to tell an absorbing story that drags the visitor into it and evokes some sort of emotional response, something that challenges people's way of thinking. I don't think there's one right definition of 'immersive environment', it really depends on a project. You can tell the story through objects for example, but again, object on its own doesn't say much really. But when you place it within context, add something personal to it, then let's say a dress stops being only a dress but becomes someone's only memory of their mother who had taken it off and slipped it

into the child's suitcase while saying the last goodbye. Even a simplest object then becomes a real treasure. I think my favorite exhibition where the object acts as a narrator is 'Medicine Man' at Wellcome Collection. The objects are simply fascinating! There's barely a small caption next to each one of them, that always surprises, shock or just makes you laugh. A completely different case is when you don't have a single object to tell this story. A great example is La Cite du Vin, designed by CassonMann and opened last year. I had a chance to visit the exhibition with all my colleagues. (I'm probably a bit biased, but!) I have never seen such digitally rich exhibition, where media are used in such smart way, constantly surprising the visitor, making them laugh, or simply amaze! And most importantly, it completely changes people's perception on the culture of drinking wine, that is usually associated with some sort of luxury, something a bit even intimidating. I probably find it easier to say what immersive environment shouldn't do. It shouldn't pretend something that is not. When it does, it's not immersive at all, it's just tacky. We as designers should interpret reality, not fake it.

La Cite du Vin - to me it tells the story of making wine in a very imaginative way. Firstly the visitor is taken into a journey around the world, through beautiful landscapes, while sitting within 3 large scale projections, so from the beginning they know that the story is told from global, not only French perspective.

There's loads of interactives that use newest technologies, that we designers have to be constantly up to date with. And it's not about creating some sort of futuristic environments filled up with buttons, it's about making technology invisible. A great example are pepper ghosts. There are several small scenographies made out of 3D objects/graphics and 'brought to life' with pepper ghosts, talking about different aspects of drinking wine, that to a visitor, appear like true magic.

Also the use of audio guides. I'm normally not a huge fan of them myself, as I find them a little bit distracting, although I thought that in this case they made it so easy to navigate throughout all the gallery. Entering particular sections triggered automatically the audio, in the visitor's language of course, so there was no confusion whatsoever of where they are and what sort of story is carried. And of course, there's so much more to it...

R.: I believe that you often work with curators and discuss the content with them in order to design an exhibition space. If so, what kind of information are you searching for in communication with the curators (just content, their ideas about the space or visitor flow, etc., i.e. anything that helps you as a designer to develop the spatial identity)? Or is there a content person on your team with whom go back-and-forth from content to design?

M.D.: As I mentioned before I've been working on Holocaust for last year and a half, we are at the moment at the end of developed design stage, but over that period interpretation process has never really stopped. We're having regular meetings with curators discussing everything really, from content through space planning, object display, AV, budget and so on. It's not like we are told what to do, or we come back to them with a fixed design. It's a constant conversation. It's a very difficult subject to work on. There's no right or wrong (ok, actually there's quite few wrongs!), there's no clear answer to what's appropriate or what's not. There will be always someone for whom we'll go a step too far. That's why we have loads of advisors on board, Holocaust education person, researchers, we are in touch with other Holocaust museums basically all over the world, we're talking to the audience of IWM of what they like about the current exhibition, what they expect from the new one.

R.: Could you elaborate a bit more on your view "exhibition design blurs the line between art and architecture"?

M.D.: I'm probably too down-to-earth to be an artist and too impatient to be an architect. I hate drawing buildings, trying to be accurate, measure stuff with a pencil. I love drawing people. I really enjoyed studying interior design (although none of my university projects had much to do with it), but every time when I thought of graduating and working in retail, hospitality or residential design I was thinking: 'right, the fun is over…'. Then someone told me: 'You have to do exhibition design'. And it was a real life changing moment. I've been working in this field for two and a half years now and can't really imagine doing anything else. Exhibition design, like art, puts reality into perspective, challenges our thinking, changes it, it's beautiful. But at the same time, like architecture, it's something that surrounds us, it needs to be functional. And I think this is something that I enjoy the most - this switch between these two aspects. Creative thinking might be exhausting! You often get stuck, run out of ideas. There's nothing more relaxing than jumping on Vectorworks[329] then!

R.: What aspects of translating content into a 3-dimensional environment do you find challenging?

M.D.: I think it's what I had written before, working on projects such as Holocaust, interpreting the subject, it's really hard to find the line between what is appropriate and what might a step too far. We are quite lucky though

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[329] Computer program similar to Autocad which allows to create three-dimensional spaces and renderings, exhibition documentation with the details about sizes and materials. This program is widely used in the US by exhibition designers.

to work with a great curatorial team. I think this is a very crucial thing, to understand each other. I know from talking to my colleagues that this is not always the case. We designers act as some sort of a tool to translate stories into three dimensions. And I would imagine there's nothing worse than misunderstanding with the person who's telling these stories.

R.: What do you think is a set of skills and qualities that the new generation of exhibition designers should be aware of developing?

M.D.: It probably won't be a revolutionary answer, I neither think that it's a quality nor a skill, but more a key to success, I guess, and by 'success' I simply mean 'loving Mondays'! It's just passion for what you do. It not necessarily makes your life easier but it's very satisfying! You can then influence, make a change and inspire.

Interview with Toni Roberts, interpretation design expert and lecturer at RMIT, Melbourne, Australia. Founder of an exhibition design company Hatchling Studio.

http://www.hatchlingstudio.com.au/

September 4, 2017
Melbourne, Australia

Dr. Toni Roberts is a lecturer at RMIT and interpretation design expert who advocates the importance of early involvement of exhibition designers on the exhibition projects to ensure the communication strategies and interpretation are developed with the considerations for the audiences.

Researcher: Toni, could you tell a little bit about the scope of the interpretation design course that you are teaching?

Toni Roberts: OK, so it's not something that was really taught before I was there. It's not like I'm continuing a tradition of teaching but it does connect with some of the things that other people teach. It's really just been me bringing that from my practice into my teaching. And the studio model allows us to do that, gives us the scope to create studios that connect with our research and practice. And I sort of see it as an important thing within communication design in that that it sits - it's a good compliment to some of the other key things people are teaching. So there are traditional things like publication design and packaging, and then there's co-design, and systems thinking, and there is indigenous sovereignty and illustration. And I feel as though it relates to all of those in a way because it's sort of medium agnostic. It doesn't matter whether it's digital or print. And it covers a pretty diverse subject matter but it definitely sits within strategy because we have three streams for our studio: craft, strategy and futures.

R.: What is 'strategy'?

T.R.: So 'strategy' focuses more on your design intent than on a form. And so that's why I'm always also really emphasizing whether it's for a specific site or a specific client as well as for a target audience and has particular communication objectives. They are things that I see as transferable whether they're doing interpretation based things that they might do in my studio or things in other studios. Those concerns will still be there or in their practice beyond - your context, your clients and your audience are still going to be really central.

R.: What is 'futures'?

T.R.: 'Futures' is emerging context for design, new practice so it's sort of things like co-design, service design and indigenous nation building, some of the digital ones go in there even though digital is not new.

R.: I am curious about the *Site Specific* course. Is it the first time you are teaching it?

T.R.: No, I ran this last year just on my own without digital media.

R.: So how did you come up with the idea to merge together environmental graphics (physical) and digital?

T.R.: I'm always keen on using proximity beacons and QR codes to embed content in the environment. So we don't have to run it with digital media to think about those things but I think communication designers also need to understand that often they'll be designing for those contexts or for those forms of media. I think we've got to embrace digital rather than avoid or completely separate from it.

R.: You've lead to the other question that I had. How do you think the role of digital is changing in the museum context?

T.R.: Well, it depends. You know you get clients who want digital more just because they think it makes them more relevant. To me one of the big strengths for digital is the 'before' and 'after' experience - being able to sustain your engagement with your audience before and after they're there. I mean, definitely in zoos, I don't think people should be looking at their phones. They should put their phones away and run around and be physical in that space. Museums sort of sit in a slightly different space because you have so much more control over the environment as well. I know these interactive tables are very popular. I watch how kids play with them, they are just bashing away, they're not really getting away very much out of it. But I think they have quite a bit of potential. I think it's really important that designers are at the beginning phase of a project, in the strategy phase of the project so that you can choose the appropriate medium for the people, for the context and for your messaging. So to me it's all about getting the right mix, the right sort of balance to suit who you are communicating with and what you're trying to say. I mean like the Canberra project has these amazing windows looking right over to Parliament House and the whole area that exhibition is about. At the moment there's no interpretation of that view, there's nothing so digital is the best way to do it. There's no way to put panels because it's all windows so it makes perfect sense to have touch screens that replicate the view and then you can interact with them. Because you don't want to put markers on the windows. It depends

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which direction you're looking from anyway, they get distorted. It was the same with the factory viewing gallery in the Mint [The Royal Australian Mint Factory Viewing Gallery]. There's a whole lot of stuff there that is invisible so a touch screen makes perfect sense - you click on it and it opens up and you can see inside. Same thing with the view at the Canberra project. So I think that's a no brainer. That's definitely the best thing to do there. That's all because of its purpose not because digital is a thing.

R.: Do you ask the stakeholders of an exhibition design process to imagine visitor experience?

T.R.: There's a lot of education and I wrote about that in my thesis too. There's a lot of educating the client which gets really tiring. And it's a difficult thing in the power relation between a consultant and a client, I think. When the consultant clearly knows more but the client wants to have authority so you are trying to educate them without attacking their authority. It's quite tricky, I find. And when I interviewed designers for my thesis that was a pretty common experience. You do it every time and you rarely work with the same client again. So there's this whole big chunk of work that's never costed into a project. And you just have to keep doing it every time you have a new client.

R.: I was wondering if there is something across the projects that continues to be a challenge for designers and interpreters? And, I guess, what you have just mentioned about client education is one of them.

T.R.: That's definitely one of them. The shopping list mentality "Oh, I saw a thing that I saw somewhere else and we are going to squeeze it into this exhibit whether it fits or not". The general lack of understanding about not only how you shape an experience within a site but also the process of design concept development. What are the other challenges ... Some people are not good at visualizing things. So you can extend the level of energy in over-designing or over-visualizing things just to persuade people when it's not really needed at that stage of the project. And you can't tell everything, that's always one, people want to say so much. I did a project at South Australian Museum, and the scientists came to our meetings. They wanted to fit in the information about wildlife from the center of Australia through to the deep ocean in one gallery.

R.: What do you think is the knowledge and skills that people who want to work in the museum field as interpreters or designers should have?

T.R.: One thing I guess I've focused on a bit is quality of experience. Trying to really unpack what the elements of experience are. And also recognizing that designers only have a certain degree of control over the outcome and being able to embrace that rather than trying to fully define the visitor experience.

And curiosity, just have to have a real curiosity about anything and everything because you never know what subject matters are going to get thrown at you. I just did this talk for the first years and I realized I was going from wildlife in New Zealand to how coins are made to the history of Canberra to the bushfire in Victoria to community in Western Australia, it's just so diverse that you have to have that curiosity and be prepared to do the research, really get excited. You know, trying to see things from different people's perspectives. You are not designing for other designers and not designing for yourself. It's not about just looking cool. And also an idea of storytelling and what storytelling is. Designers should be strategists, storytellers and educators. So that's how those three things kind of come together.

Interview with Trevor Streader, design manager at Museum Victoria, Melbourne, Australia.

September 28, 2017
Melbourne, Australia

Trevor Streader is a design manager at the Museum Victoria, helped the design department to be an audience advocate and promote design as a problem-solving in which all exhibition stakeholders can participate.

Researcher: First of all, I'd like to ask you how you have started to manage the teams and lead them through the creative process?

Trevor Streader: So a little bit about my background. I have communication design background. And then I worked as a commercial designer for probably over a decade and then moved into higher education. So I was a lecturer at Swinburne School of Design for about 12 years. And really enjoyed design education running the design center at Swinburne for the last six years as a senior lecturer there. And I did a Masters looking at creative process and the influence of subjective content or personal content within the creative process. And that was a practice-led piece of research and at the same time I was supervising honours research that was underpinned by that by that research. But then this opportunity came up, I saw it advertised for a new [...] museum design manager. And I was just really tempted by that position. They'd been through a review of design and service within the organization and had created one of the outcomes of the review was to bring all the designers together as a group. They were disparate through the organization and create a new position to manage that team. And I saw it as an opportunity to actually test my research in a practical sense. And I suppose the learning from my master's research informs the way I lead the design team here and it has informed that. And the biggest challenge in taking on the role here was to, I think, prepossession design from being perceived as a technical service to being one of design innovation and design thinking and design-lead problem solving and strategy, and design is being empowered to make really full contributions to our outcomes. And I feel like that that's been achieved. Within an organization like this it's mostly about demonstrating value. You can talk about design. There's a role in educating people, you know, ongoing education of the role of design in an organization like this but by and large it's taking each opportunity to demonstrate the value of design and it's through the recruitment. I mentioned earlier in the criteria to have genuine team-based designers and that's always been my priority is to recruit people that are very team orientated. To work in a place like this it's very collaborative, and they need to be very generous with what they can bring to the table with project teams and it's through that process and demonstrating great outcomes that design within this

organization, even through this latest restructure, the commitment to in-house design resource has remained strong and it seems not just from a cost effectiveness point of view but also from the level of quality and excellence that's delivered through this model. Seems to outweigh what is achieved when things are only outsourced. To reposition the design department from being what was perceived as really, I would describe it as a technical service area, to being fully delivering the full potential of a creative design studio. The only tool you have really is recruitment. And I was very aware that to be able to reposition the department you'd need people very team orientated in an environment like this in a large organization like this. And I've placed that as a high priority and I think that's paid off.

R.: Do you have any tips on ways working with "authority"?

T.S.: That's a good question because when I accepted the position here my only hesitation about accepting the role was that I felt that I was, perhaps, one level below where I'd like to be within the hierarchy. But the opportunity was still very attractive so I still decided to take on the role. And I suppose, what I was saying earlier, that it's almost an attitude of leadership from behind almost, not from the top down. So it's a lot of managing up. It's not, relying on the hierarchy it's relying on demonstrating value. That's really what it relies on. So your authority transcends the hierarchy and you can only do that with when you've got fantastic people working for you to a common goal and to a common vision and that vision for this department was to deliver design excellence. And I think that's been acknowledged. And it's just through that each project delivering an amazing outcome that over time you have more influence from the position that you are. And it's interesting in the recent restructure. Design is now being acknowledged as a stand-alone department. And I'm reporting directly to a director. So I'm now at the level that I hope that I would be at when I first started but that's taken over 10 years but that's OK. It's a slow process.

R.: Is there a lot of psychology involved into managing a co-creative process that is effective and inclusive? I think that it takes a certain level of making people comfortable sharing and taking the ideas of the others and developing them.

T.S.: For me, I think, it's really important that I've practiced as a designer myself. So for me, when I took on what was called Design Manager, and they could have appointed someone who did it in a very analytical or spreadsheets sort of approach and it would have been design management. But my role here is much more than just that, it's actually being creative director on lots of projects, it's being a mentor or being a design advocate through the organization. So it's multi-faceted. It's being a design consultant to many

departments before designers get involved in projects so I suppose I'd say my role here is being like two things: making sure that a project is design ready so that we've created an amazing brief, and sometimes more and more designers are involved in that process of creating the brief. When I first started here I had to actually fight hard to have influence to form the brief and to make sure that that was an excellent brief. And then once we've got an excellent brief, the second component that I focus on is assigning the best people available to that opportunity. And if we get those two things right, usually we'll have a reasonable passage through a process. And there'll still be difficulties and there might be challenges but what I've discovered is if I get those two things in place there's not going to be a major crisis. There'll still be challenges because every big creative process or project presents challenges but it's not going to be a crisis point where people are not able to continue or things like that which is what you want to avoid.

R.: I'd like to ask you about experience developers working together with exhibition designers and curators on your team. First, how did you start working with experience designers? What are they responsible for and how does the team work together?

T.S.: I think the introduction of experience developers is recognition that we need to be absolutely audience-focused in everything that we do. And so with the old model of content experts as we might refer to them they're not always curators they might be other people in that mix. I think we realized that didn't always lead to the best outcomes for our audience. Sometimes there wasn't enough research and thinking in to what our audiences needed and also to come to the conclusion of how we what the legacy of that project would be how we wanted to impact our audiences. So the introduction of experience developers within the mix is really an attempt to formalize that commitment to an audience - first approach to everything that we do.

R.: So what role do the experience designers play in the team?

T.S.: They're the advocates that have a responsibility for leading that front-end process around being audience first or totally understanding what the characteristics of those audiences are that we're trying to reach. And then to start to envisage the sorts of experiences that might start to inform the creative brief for the project. So they might be expressed through narratives, through text but it's not something they do by themselves. It's still a team-based process so designers are involved in that process and content experts or people from, I suppose, a facilities aspect might be involved. We have people who are audience testing experts within the organization that are also brought in to do specific things that that group is required testing.

R.: Could you tell a little bit about your prototyping with people from outside the museum? I kind of view it is this. How exactly do you get people involved? Who are asking to come in to work? And is it in form of a workshop or something else?

T.S.: We've tried lots of different things and it usually comes out of the needs of each particular project. We don't have something that we overlay every development that certainly like, for example, with the children's gallery. Our audience was zero to 5 year olds plus their carers so we knew exactly our audience and the zero to 5 was quite a challenge. It was also almost a reset moment for everyone on the team to reconsider a newborn baby as a valid person that has needs that we need to make through the design and through the whole development. The very early stages of that process I remember sitting with the producer and talking about a model of how we could get a lot of input into the very first stage of that process. And we identified five different groups of people from outside. And we came up with an idea that was. Like some of them were early-learning professionals, some of them were creative people but with children of the age, some were health professionals, experts with children with disabilities and the like. One group was from within the museum. I think again with children of that age group. I can't remember the other one. And we came up with this idea of basing these sort of workshop sessions based on a speed dating model. And we devised stations within the space, the existing exhibition space, and we had five different stations that was dealing with a particular aspect that we wanted to get feedback on from a range of people. There was a range of questions to facilitate a discussion. And we recorded it, we recorded each of those and transcripts were made from every comment and that was distilled down and we did that across five different groups. It probably took two hours to do each one and each group moved from one station to the next so it was quite an intensive thing for them just to go from one to the other.

R.: How did you advertise for these groups to get involved?

T.S.: We just brainstormed people we knew from our networks. Obviously the professional networks we needed to stuff but through that some of those contacts became ongoing relationships of reference through the whole project. And, for example, with children there was prototyping of concepts in an unused exhibition space that we had a relationship with an early-learning childcare center and we actually had children zero to five within those spaces engaging with the concepts in a prototype sense and to the point where we engage carpenters to create some aspects of what the idea was for the build at that point. For the other exhibition for "Humans", it was a different model. And there was. There's been work done on a research stage, it was roughly called concept, but it was more experience concept not design concept but you could

also attribute that to being an active research phase. So a lot of work had been done but then we invited creative people from outside the museum to join the project team and some other people within the museum. Including designers on the project and some other designers not on the project. And we had two days and there was probably about a three-week gap between the two days of intensive days doing rapid prototyping. And so the aim was there was some starting points for idea generation that come out of previous work. And the aim was really to try to give form to as many of those ideas for experiences in a form that we could invite other people into have those experiences and to gauge their value. They were very rough, it was super intensive for the designers because people gravitated to them as the visualizers as well as the ideas, they were contributing ideas as well, but within the groups because they've got those skill sets they were relying on them for doing that intensively for a day. They were pretty exhausted after a day but. And then we invited, I think it was the next day, a group of people from within the museum were invited in to be shown all of these things and they were given an opportunity to have those experiences and to provide feedback. But that's the project that hasn't actually continued so it's an unfinished story. I can't speak about how that influenced the concept development because it didn't go beyond the research phase. And then the other example of external consultation is the First People's exhibition where there was a reference group formed of indigenous people and they were involved in all stages of that development as a reference for it through to the opening of that exhibition from.

R.: How exactly was that group contributing?

T.S.: They met regularly with the project team and so they were invited to give feedback on visualization of ideas. F or that project that was totally essential for the success of that project because no matter how it looked, if it was judged from a museum sort of point of view of how we might normally judge an outcome, if there wasn't high ownership of the Indigenous community in Victoria of that as an outcome, then that was a fail. Know no matter what anyone else thought of it, if they didn't have higher ownership of it as an outcome then it wasn't being the basic premise that was to provide the Victorian First Peoples a voice. Very early on there was a decision made that in the 15 years that had transpired between the exhibition that was there and what was then envisaged to replace, the biggest driving factor was the need to let relinquish the museum voice about talking about indigenous cultures. And hand that over to the First People to have for it to be their voice, their first voice that come from them. And so for that to happen it needs to be absolutely it needs to be a co-creation scenario or it needs to be managed and set up with a methodology around that which is a huge commitment of time to enable that to be successful. But there was really high ownership and there has been higher ownership and it's been celebrated by that Victorian. And with the opening, the

reference group were front and center. They were attributed for the development as much as any other partner if not more.

R.: Great! Thank you very much.

Interview with Bruno Stucchi, graphic designer at Dinamomilano, Milan, Italy.

http://www.dinamomilano.com/

January 12, 2018
Milan, Italy

Bruno Stucchi, graphic designer and founder of Dinamomilano. Dinamomilano has participated as graphic designers in the design of the "Hokusai. Hiroshige. Utamaro" at the Palazzo Reale in Milan.

Researcher: Who has developed the exhibition content and they lay out? Was it designed by you as a graphic designer and an architect? At which stage did you come in? What was the process?

Bruno Stucchi: First of all, the exhibition design was the effort of the team composed by myself as a graphic designer, the architect Corrado Anselmi and the curator whose name is Rossella Menegazzo and the lighting designer Barbara Ballestrere studio. And clearly with the participation and coordination of the client which is Kira Mondo Mostre. The project was conceived and it's maybe one of the most virtuous examples and hopefully the results were reflecting the approach where we sat at the table from the very beginning all at the same time. So we built, we literally built, the idea and the narrative and the experience from scratch. Considering things sometimes like very nonmaterial things like light which was an important part of the idea for a very simple reason - these are drawings. So the light can't be that strong, has certain rules and that usually makes it for rather gloomy exhibitions and so on. So clearly we wanted something more intimate and spectacular at the same time. When it comes to the architectural part apart from Corrado being a super specialist and a great architect but not simply because he's an architect but because he knows you want an exhibition is about. He was turning or transforming the rooms of Palazzo Reale, which are not maybe not the perfect exhibition space, into a journey. And the curator wanted the exhibition to be able to express the content and the story and the narrative and the techniques but, at the same time, to make the emotion really blooming and the ability for a viewer to get into the world represented by Hokusai with one major, if you like, obstacle. When you talk about Hokusai exhibition or these Japanese prints exhibition most of the time you referred to a huge number of artefacts, say 350, which are all the same. They are the same size, most of the time they have similar frames so you can't really rely on a large painting surrounded by small paintings or objects.

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I mean, it's a series of prints and, clearly, when it comes to the graphic design the real challenge was to boost, enhance, reflect, complement all these clearly with the distribution of information. And as important was the ability to express from a visual standpoint these idea of Japan without being too holiographic, without being too romantic - finding perfect balance between the need for informing the people and adding to the exhibition from the visual part and giving the exhibition a voice. When you deal with the text you are sort of creating the soundtrack or the voiceover of the exhibition. It's like having a person with you that speaks and says things like "you are now in a room ... " so this is where the team really worked in collaboration in order to achieve this. And in terms of the dynamics of deadlines, we had close meetings where little advancement was shared. For example, discussing the lighting and how it could allow me to work with smaller or larger text or whether to have more or less printed images as opposed to the work exhibited or simply to gain some space for a room in order to give more space to other rooms and create the music of the exhibition, the composition.

R.: How did you come up with the layout of the exhibition? I am referring to the introduction of the visitor to the theme and building the whole experience up to the wave and the views of mountain Fuji.

B.S.: I may be speaking in place of the architect here, but as I was a part of this discussion, there was everything really connected and we clearly we knew a few things. First of all, we wanted to build towards the Mount Fuji and the that the big wave. So it had to be some sort of you know journey where, as you said, all of a sudden you find yourself in conjunction with the soul of the exhibition, and we wanted the exhibition to build towards that. That affected the distribution of concepts, for example, the idea of having certain sections or concept. Before that it wasn't simply something related to some sort of cultural, clearly it had a lot of sense in cultural terms and scientific terms, but it was functional from a purely visual experience. So the idea of starting with certain prints and then getting into the journey, the famous journey with the different stations allowed visitors to physically start the journey. Even the idea of having the numbers where all the different stations, it was done in order not simply to make you understand that this was exactly the way these people the design and the Japanese artist were doing that journey but more the idea of starting your own journey and going through the landscape, through the waterfalls and then finding yourself - a little bit of a religious experience, if you like. You referred to spatial constraints. We had a major a major problem that we really knew since the very beginning because Palazzo Reale is built in such a way that you get into a very large hall and then go through a very narrow corridor where you even have the restrooms and so on. So we turned that little corridor into a part of narrative. We had this idea of creating these flags very close to the head of the viewer. The two ideas were, first of all, to completely transform the

entrance - the large ticket room, if you like, and the entrance but mainly the ticket room as you know creating large walls off like Japanese paper. We wanted to transform a typical large hall where visitors buy tickets and pick up audio guides to transform into a different experience which smoothly brings a visitor into the exhibition. It's like getting into a house where there is wallpaper and wooden walls. Then immediately after that hall you get into a corridor where you know there were a series of flags and that was really kind of, you will allow me to say, a uterine experience. It's like getting into a place where you can actually touch the exhibition or, vice versa, the exhibition touches you. This was the idea - let's make this something very emotional, it's like getting into your sacred space, let's get into that journey so it's got something to do with the myth of poetic, I think, that's the term. There were people walking through that corridor back-and-forth, back-and-forth because they really felt they were part of the exhibition. And then at that point you were ready to go through that journey. So this is something that we usually did, it's like a music composition, like a symphony, the overture. But then you have to have a moment in time where you really connect with the basic elements of the composition before you get into the little diversions and before you get back to the central core. Say if you use the music comparison and the music analogy it makes a lot of sense because you are sort of pulling and steering the emotions with space, with graphics, with light and so on.

R.: It's interesting how often these aspects seem to be overlooked. Like, you know, the color of the wall, whatever light but then they actually are so essential. And even in my research, when I was concentrating first more on the space rather than the roles of designers, I was thinking it was going too much in one dimension and that's not enough. But then every time going through an exhibition, I recognize the importance of all details which shape the gallery spaces for exhibitions. In some space you feel as a visitor that you want to spend more time there because it feels more comfortable than the other room in that exhibition, for example.

B.S.: Sometimes it starts from a very pragmatic point. We have a humble corridor; how can we turn it into an integral part of the exhibition. You may also decide to simply skip it and paint it black or blue and that's it. But as a designer you have to consider each and every aspect of all that is given to you whether it's the material or the space or the exhibition, that is something that should really build up to the entire experience and really turn things into pluses. Clearly I think this is a very important point that has to be made: you always have to think. This is true and it may be used for communication as well. It's not about communicating things, it's not about creating experiences, it's the ability to put yourself in the shoes of the visit, not simply from an ergonomic or design standpoint but as the real emotional experience that you want to obtain. It's easy to say and it's very difficult to do because sometimes

other considerations fall in this type of thinking. Finding the right balance is different. The majority of people go into exhibition, any type of exhibition, just wanting to be basically transformed, involved and moved by what they see. It's not just the idea of finding yourself in front of a Caravaggio, you still have to prepare that. The idea of pulling some sort of you know sacred experience and the built up.

R.: But even the cathedrals they're spoken about as spaces we as a system of symbols which builds in a set with a certain architecture with the seven narratives of I don't know whether it's icons in the Orthodox Church or what they are or different positions of the frescoes in the other ones also builds up for a second experience even you can look at it as an even religious place but a place which builds up to certain to make you feel that way but only if you think that the opposite even the extreme opposite which is the you know total minimalism you know like all sort of white that no matter the captions no nothing rooms are basically you know they serve the idea of the neck of sort of a sacred experience where you know the work of art the living artist becomes the real central point and the subtraction of information.

B.S.: It's certainly part of the aesthetic and ecstatic experience. Max Bense in the 1939 said the more the information, the less the aesthetic experience. In this sense it's also an ecstatic experience.

R.: What was the idea behind choosing the blue color as one of the main ones for the exhibition?

B.S.: First of all, you have to consider that the major part of the exhibition walls were covered with textile, it wasn't paint. So that was a very important choice to exhibit these things on something different and much more in tune. Paper and textile. The idea was to really enhance and provoke the sense of touch, even if you don't touch it you feel that wall is different than a painted wall. The colors were chosen based on contrasting or harmonizing with the prints making sure that the bright colors. Blue and cream were the main colors because we wanted the bright colors like red to really flash out. There is a very nice anecdote about William Turner the painter who in one of the salons back in the 19th century exhibited a painting of a very dark scene with the tempest and the ships and you know how Turner is. And then he actually expected all the other painters to place their paintings on the other walls of the exhibition hall. Then he got in with a brush and some red varnish and he designed a little, a very little red dot which became the center because the general color scheme was very dark and gloomy. And so we wanted exactly this. We wanted to make sure the bright colors stand out.

R.: It was noticeable after this exhibition when I saw it in London it was on the white walls, it didn't seem to have this effect. Also maybe because the light design is quite different here. There was much more like a white cube. So is a combination an interesting and here I really like the theme, you know, how it's more like a landscape in a way to walk around and you see maybe there is something else in between and the walking.

B.S.: I mean we really wanted to have this idea of perspective, having a sense of the space and the journey. We wanted everything to be very warm and tactile. Even the choice of the printing materials for which we did extensive research in order to find something that resembled Japanese paper or cotton. Clearly we could not use Japanese paper or cotton because it simply did not satisfy the regulations. We were looking for something that was transparent and warm, at the same time, sort of whitish. That was the idea since the very beginning. The client wanted zen experience. We may want to discuss for ages what zen means but it was clearly something related a journey within your inner soul so it wasn't simply looking at pictures from another culture and different period in time, it had to become a very personal and emotional experience for the visitor.

R.: It's amazing that you've done it.

B.S.: You have to consider that the lighting was playing a very important role. Given the same type of material and the same type of display and layout, without the lighting that we have created, it would have been a completely different type experience. Lighting, for example, coming from the floor up in order not to interfere with the drawings but to create the sense of suspension. And once again a sacred space like having the idols or Buddha statues lit from the back. It took a lot of research and a lot of physical proofs from Barbara's studio. They were they were getting into presentations with large piece of boards and lights while most of the time lighting designers present some renders. It was like a performance, you know, three guys holding up a board and a painting and two other ones holding the lights underneath the table, it was it was very nice. So if you remember the exhibition, there was a lot of lighting coming from the ground.

R.: In fact, I even found it quite nice but also quite easy to navigate. It was more like a path - being guided just looking at the floor.

B.S.: It's a very interesting concept that lighting is not just the way you lit up the artworks, it is how you use light in expressive or narrative way. Also we didn't have a very large budget. Some of the things that we did were heavily affected by the fact that we didn't have enough budget. We could not create real rooms, we had to rely on very light structures. Even though we had to

cover everything with cloth which is quite expensive compared to paint made it for limiting the space of the wall. So some of the solutions which in the end proved to work perfectly in terms of creating the constant sense of moving in a new journey were actually determined by the fact that we couldn't build an entire wall which is somewhat easier, but clearly more expensive. So the idea of having different panels and elements was also a way of spending a little bit on the cost of the cloth and removing certain parts because by square meter the price was lower. Isn't that amazing? So by doing this and constantly checking with the design-to-cost type of approach, we discovered that it was actually good and functional. In some cases we were a little bit concerned. For example, in the very beginning of the exhibition near the entrance where there were the suspended panels often used in commercial exhibitions could have resulted as a poor solution. But in the end, thanks to the light and other things, everything worked well.

R.: What was your time framework for the project?

B.S.: The exhibition opened early September. We finished everything by August, I think, and then there was the built up. If I remember correctly from April until August four or five months. And the built up was less than one month.

R.: Did you work closely with the curators? You had a graphic designer, an architect, a lighting designer on a team. Was it the curator from the museum or an independent curator?

B.S.: Independent curator. I don't know whether you've had the opportunity to see the queen Yashiro exhibition which is a different take on Japan. Same curator, same team, completely different space and the work is fantastic. That's another interesting story that would take us another way. But anyway the once again the contemn was you know subject to, once again the meaning like, the distribution of sanctions, you know, the amount of text, the type of quotations. Whether any quotations or not, whether you use piece of poetry or maybe some pieces of text taken from a book. We really discussed in a very interactive way with the curator. She was really open. She was clearly driving the whole thing. But it was really discussed with the curator and she was really open to change her mind, not to change her mind but to listen and was clearly very open to any type of suggestion. In the in the very last room which was the manga books.

R.: Yeah. What happened there? It was pretty serious it was so different from the rest.

B.S.: Yeah, because I mean the challenge there is when you exhibit books is the fact that you put like 10 books or five books or 50 book that you can only see but one page for babbles four or respray. And, you know, of course you can put some iPads but then would simply answer to the idea of going in a very analytical and cold way through the content which, of course, you can do. But the fact is that the majority of people, especially at the end of the exhibition, they don't really want to stay unless, you know, a portion of viewers who are very interesting into anything but at that point in time people just want to have an idea, you know. A very strong impression of what those books were about instead of looking at each tiny detail. And so the idea was to create a lantern like a Japanese lantern where, you know, you have the books in a square room and with some projections on the top sections of the walls where it's more, once again, the idea of navigating in a sort of dreamlike way but it was more important to make a point about these men spending, you know, creating a whole world of expressions and animals and things more than looking in detail for each and every - something that you couldn't in any way you can't do that in an exhibition, you don't have time you would create it, it would be difficult. I mean it's simply a suggestion. You may want to explore this a little bit more by the book by the catalogue. We have two ideas there. Clearly the displays of the book where at eye level as normal like glass cases. But the idea of the lantern was at the same time something that contains more like you know once again is a very sacred way of keeping those things like you know little room where you go is a library. Projecting this light but I created a sort of a video composition where all the pictures were sort of enlarging the room so that we're moving from the center out in order to create this idea of an entire universe. And so the juxtaposition of a sort of a narrow square place and these are these video that really opened up to the universe is, once again, something that worked and was considered good. And we were actually able to solve this. How are we going to display those books? The most boring thing on earth. A book is a very personal experience. You take a book and you go through it and the exhibition is there.

R.: It's quite interesting because it was so different from the rest. It's also interesting how very differently this exhibition was approached in Melbourne at the National Gallery of Victoria. The nice thing there was actually about the displays for the digitized books themselves because they chose the displays so well. They didn't have the luminosity behind so it actually felt differently it felt like it's more like paper.

B.S.: You know the Amazon what is the name properly?

R.: Kindle. Yeah maybe a bit more like that so it wasn't like TV quality but slightly more different so the texture was a little different. They connected very well the frames, they were in very thin frames and it didn't seem like it's

actually a bunch of monitors but more like just one kind of like a line but that was it.

B.S.: And you know from what you were saying I would be tempted to say a little more scientific approach. We favor very, clearly, in agreement with the curator with the with the institution and the client. Once again, we favored the idea of the emotional journey. So using, once again, the musical analogy that was like the clues in piece. When you wrap up a composition, you want to recapture the entire experience and create you know an ending that you can bring with you out there in the world. So we actually discussed whether you know to present the books, how to present the thousands of different illustrations and in a very, maybe Italian way, we said it was too clutched to be displayed. There is the same exhibition or you know a mutation of that exhibition is currently in Rome. I think it closed this Saturday but we displayed more or less the same material because it was really you know the same exhibition brought to Rome with a slightly different take on it and we didn't have the opportunity to recreate these sort of magic lantern. And we simply, you know, displayed some enlargement of the pages in that room but it doesn't work that way.

R.: Did you have a certain audience group? Let's say you were targeting main museum audiences in mind when you were creating the exhibition? Maybe the museum or the client told you who this exhibition has to target as primary and secondary audiences.

B.S.: This is where the marketing of culture, at least in Italy, goes a bit short. They don't have a clear idea of what their target audiences are so clearly, you know, the art lovers. Clearly the affluent people but, you know, the idea of having a proper segmentation of the target and addressing their different needs and so on. Generally speaking, the target audiences, first of all, they're not tourists, at least in Milan. Even if you do exhibitions both in Italian and in English, it's more because Milan is an international city. But, you know, the vast majority of the visitors are from Italy, from Milan, or the neighbors. But the target we had in mind was clearly, apart from the art lovers, apart from the people who are into Japan and Japanese things, we really wanted to create a sort of, you know, word of mouth type of thing. And as a matter of fact, you know, the major newspaper which is "Curriere della Sera", when they covered the exhibition, they spend, funnily, more or less the same amount of words for describing the work of the artist and to describe the experience of going through that. It's like losing yourself for two hours in middle age Japan. So that is what we had in mind. Also you have to consider the last exhibition in Milan, there was a previous exhibition on Hokusai and Japanese school, and it was not more than three or four years before this major exhibition of Hokusai. So in a sense there was also the idea that they may have already the target audiences.

R.: I was curious about the pros and cons of the gallery but I think you pretty much mentioned the space, the challenge of this narrow corridors and larger rooms.

B.S.: Narrow corridors, awful walls, I mean, you know, they've been used for so many times. Floorings are you know really torn down and if you see that space like 'naked', you can't look at. So that was a challenge. But, on the other hand, you know, it's the venue right in the center of Milan. And, once again, it was part of the journey. If you go in the center of your city, Milan is a small city, you are starting a certain type of journey. If you go now and visit the Miyoshi exhibition which is a nice space but it's like, you know, not exactly in the center, it's a traffic road and it makes it for a completely different exhibition. Something that should be considered in what one day will become the science of exhibition design. A venue is one thing, where and when a venue is another thing. Clearly, if you go to New York and you go to the MoMA your journey starts the same moment you put your foot down the plane in JFK.

R.: Yeah, I think it matters a lot - getting to the museum as well and how and what experience you already have by the time you got there. I sometimes feel like I don't even want to go inside and when I'm walking to the Guggenheim along or via Central Park in New York. I think it's really important for museums to kind of think about how people could be getting to their museums.

B.S.: The interesting thing is, clearly when you go to the Guggenheim in Venice and you go to the private house of Peggy Guggenheim. But the challenge is what can you do when you have a museum or a venue which is not so fashionable part of the street or the city. Can you do something about that or not? But my answer is clearly "yes". You know, "how" we can discuss. Yes, of course, you have to do something about that and because it's not so different from doing a commercial exhibition where you are in one of those large exhibition centers which are not usually that nice and you have to stand out and, you know, as a designer I've been working a lot in commercial exhibitions and you know that the exhibition starts you know way before you get to the Central or to the exhibition hall. And maybe you can create some kiosks, maybe you can create something even virtual on your iPhone while you approach that, you know, it's clearly thinking of an exhibition in a completely different and wider way than simply the place where things happen. And let's say apart from communication, apart from that I can has a completely different, not a completely different function after all, but how do you use communication. Where do you place your post? Can you create an entire street which is completely devoted to it. Can you place an exhibition as a selected journey through the city? So that you make sure that people approach that venue from

one certain angle as opposed to the other one because that makes it for, you know, much more gratifying experience. But clearly these you know these suggest the idea to approach the projects and an exhibition from much more in-depth. Way earlier before that they happen.

R.: Thank you!

Interview questions

The following semi-structured interview questions were used as a basis for personalizing the semi-structured interviews with exhibition designers in order to gain deeper insight into their practices through means of interview-conversation.

1) What disagreements between a client and a designer exist? How do they transform the designers' initial proposals and his/her theoretical applications in exhibition creation?
2) What influence do the museum regulations have on a design proposal for an immersive space?
3) What theoretical knowledge on immersive design history and techniques might designers lack at first place?
4) Which immersive theoretical aspects are difficult to translate into 3D built environment?
5) With the help of which approaches can a designer trigger the imagination of a visitor when creating immersive spaces?
6) Why are theater designers believed to be better at creating immersive environments than museum designers? What can museum designers learn from theater designers in their approach to work?

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