

Otto Kolless

# **Designing the Post-Museum**

Design Speculation towards an alternative to the Museum

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Otto Horst Kolleß  
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© Zurich University of the Arts, Department Design, Interaction Design  
Mentors: Prof. Dr. Karmen Franinović, Dr. Joëlle Bitton

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# Abstract

The existing museum today was designed according to values that do not correspond to the current society. These institutionalized structures formed in Europe in the 19th century and imposed on the world have been minimally reformed since. This thesis explores the role of design to propose a restructuring of the museum to a post-museum by the means of speculative design. The design objectives of the present museum have been investigated to propose an alternative based on contemporary theories and research. Employing an iterative design process, the context of paintings in the exhibition space as well as the authority assigned to such space has been challenged. New arising movements around the post-museum are speculated exploring future scenarios of the authority of art.

Keywords: Speculative Design, Post-Museum, Cultural Studies

# Abstrakt

Das heutige Museum wurde nach Werten konzipiert, die für die moderne Gesellschaft nicht mehr relevant sind. Diese institutionalisierten Strukturen, die im 19. Jahrhundert in Europa entstanden und der Welt aufgezwungen wurden, sind seither kaum reformiert worden. In dieser Arbeit wird die Rolle des Designs untersucht, um eine mögliche Umstrukturierung des Museums hin zu einem Post-Museum mit den Mitteln des spekulativen Designs vorzuschlagen. Die Designziele des Museums wurden untersucht, um auf der Grundlage von Kulturtheorien und Forschung eine Alternative vorzuschlagen. Mithilfe eines iterativen Designprozesses wurde der Kontext der Kunst im Ausstellungsraum und die diesem Raum zugewiesene Autorität infrage gestellt. Neue Bewegungen rund um das Post-Museum werden spekuliert, die künftige Szenarien der Autorität von Kunst und Kultur erkunden.

Schlüsselwörter: Speklatives Design, Post-Museum, Kulturwissenschaften

# Preface

“In common conception, the work of art is often identified with the building, book, painting, or statue in its existence apart from human experience. Since the actual work of art is what the product does with and in experience, the result is not favorable to understanding. In addition, the very perfection of some of these products, the prestige they possess because of a long history of unquestioned admiration, creates conventions that get in the way of fresh insight. When an art product once attains classic status, it somehow becomes isolated from the human conditions under which it was brought into being and from the human consequences it engenders in actual life experience. When artistic objects are separated from both conditions of origin and operation in experience, a wall is built around them that renders almost opaque their general significance, with which aesthetic theory deals. Art is remitted to a separate realm, where it is cut off from that association with the materials and aims of every other form of human effort, undergoing, and achievement.”<sup>1</sup>

1 John Dewey, *Art as Experience*, Perigee trade paperback ed, A Perigee Book (New York, New York: Berkeley Publ. Group, 2005), 1-2.

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# Introduction

The museum space evokes different reactions and emotions in its viewers. While some viewers see it as a space of reflection and learning about their culture, others experience it as a manifestation of an exclusive Eurocentric view devoid of other practices and cultures. It is a highly political space defining what is culture by displaying a selection and through this process choosing what not to represent and assign as culture. The museum functions as a sense-maker defining and shaping visual culture as well as an administrator of large collections. Collections that, for the most part, if they are historic, were often acquired through exploitative means of the imperial rule in their kingdom or abroad from the colonies.

The most prominent critics of these problematic structures are cultural practitioners themselves working as artists, museologists, academics, etc.. While the critique has been ongoing for a long time, a shift from within the institutions has been quite slow, gradually leading to different approaches and concepts opening up the museums through a variety of programs. While each step challenging the existing undemocratic structures is important and valuable, I believe a reform requires further steps and critique alone is not enough to change the existing structures. The field of art history, curatorial practices, and museology search and create opportunities to alter existing structures and promote an egalitarian, inclusive, and diverse outlook but are often limited within certain frameworks. Namely the institutional framework of the museum itself or the framework of academia. While these methods are the right approach to conceptually analyze, critique, and propose, they lack the imaginative potential of design. In this context, design can become a vehicle to navigate through the discussions leading to a proposal of change, adding insights to possible futures.

This attitude enables a process in between the fields of design and cultural studies as well as at the intersection of research and design. Complementing each other in the process, this position allows designing across the scope of one or the other field. This thesis positions itself in this in-between, hoping to enrich both fields with suggestions and the proposition through the *Vidēntium* artifact and its future scenarios.

At the core of the design process of this thesis is the hypotheses that the institutionalization of art exhibitions is based on problematic objectives where it is centered in Western and Central Europe, and due to global political hierarchies has become the standardized structure worldwide. This hypotheses has been informed by my background in East Asian Studies, specifically the study of Chinese Art History, in the context of colonial exploitation by the Global North and appropriation of cultural goods.<sup>2</sup> The political power of art through institutionalization crossing into the field of propaganda in a totalitarian state has guided the question of an alternative. Can the political context and potential that is inherent in our existing structures be changed? What defines a new political agenda

2 Global North is used as a value free term for the so called „developed countries“.



of exhibiting? And would we, the viewer, experience art in a different manner? Is there an inherently different way to think art, see art and interact with it? The social question of positioning art in a new context is navigated through different approaches in the design process in this thesis. Underlining these approaches was a research driven stance to design informing the process from the fields of art theory, social studies, interaction design and design theory. The designed outcomes where proof of concepts often revealed new limitations in the comprehensive objective, instructed a reevaluation and reframing of the design aim. Therefore, the design objective changed with each iteration as the design objective became clearer with each step.

The process of this master thesis began with the question of an alternative space to the museum in the public through the means of digital art. An objective that quickly opened the discussion to questions of interaction with art that is purely screen based. This exploration led to the realization that the question of challenging the museum and criticizing its current form must be from within the institution and cannot be placed in the public space. *Iteration 1* was created from this perspective exploring how paintings are perceived and if an interaction can arise from the viewers perception. A question followed by the approach in *Iteration 2* of utilizing an interaction we are familiar with and feel comfortable in, especially children – drawing. Proposing an interaction in the museum space to create an environment of active participation rather than passive consumption. While *Iteration 2* focused on colors and their importance in our perception *Iteration 3* set out to restrict the visual perception of paintings and create an interaction of self-guided exploration through light on the paintings canvas. An approach showing visual hierarchies by restricting the full vision of the paintings and asking the viewer to navigate the lighting to the parts of the painting they are interested in to be able to focus on them.

The three iterations have shown the limitations of changing the interaction of a painting to a different perception all the while still situated withing the context criticized and challenged. Therefore, the final and fourth iteration led to a redefining of the situation of the painting, rather than the interaction. The newly designed situatedness of the artworks aims to inform and for new interactions to arise and take place. An approach highlighting through speculative design the potential of a change in the consumption of visual culture and promoting a revision of the social concept of the museum as the proprietor of cultural representation.

While numerous design theories and fields are explored in this process, the final artifact draws from the principle of Slow Design by utilizing the potential of Speculative Design. In this joined approach the artifact aims to achieve a high plausibility in the realm of speculation all the while being connected to core values of valuable human interaction through slowing down an interaction otherwise limited to a visit in a museum. By creating this newly situated experience the artifact raises many questions for the field of museology and cultural studies. One implied question present in this artifact addresses the design filed at large: is design complicit in enforcing existing structures? Or can design be utilized to grasp our world differently and shape it anew?

The *Vidēntium* artifact is positioned in the field of the last hoping to show the potential of change by designing it unbound from the limitations of

a service oriented industry. Through the speculation the artifact serves as a starting point for future discussions and questions by provoking and challenging notions of ownership, collecting, and most importantly, how our visual cultural is lived, produced, and ritualized.

In the following chapter Background Research, the foundation of this critique is laid presenting why it is justified and needed for the majority of society to reconsider their practices for a more inclusive environment.

In Design Iterations and Research, the process of this thesis and its development are summarized, and methods used are explored and defined. In Conclusions, the results are discussed and future directions are considered.

# Background Research

## History of Museums and Exhibitions

Exhibiting and viewing art has changed over time as much as the art production and creation itself. With these changes, the meaning of art has changed as much as the societies in which they are situated. Formally, under monarchic government, a collection was to represent the ruling power over all known and achievable by mankind. This entailed before the invention of the camera visual representation itself as the only possibility to create visual reproductions of the world was through the creation by hand. The collection of the king hence can be considered a claim to rule over visual reality and decision-making on what is to be presented and what not (a claim the church and wealthy people also could make). Only through the governmental reforms of the nineteenth century, the museum was developed as a public sphere. Transitioning with the governmental structures the museum was born out of monarchy into the newly shaped more democratic social states.

This brought about many challenges, one of which was the creation of a public space that has not existed as such before and needed to be defined and formed. Conceptualized as a place of cultural resource, homogenization, and, learning, in practice became a space accepting working-class men to emulate middle-class behavior but not to participate. Women and people of color were excluded from the considerations as well as the visual representation and therefore, visual culture itself.

“In practice, museums, and especially art galleries, have often been effectively appropriated by social elites so that, rather than functioning as institutions of homogenization, as reforming thought had envisaged, they have continued to play a significant role in differentiating elite from popular social classes. Or perhaps it would be better to say that the museum is neither simply a homogenizing nor simply a differentiating institution: its social functioning, rather, is defined by the contradictory pulls between these two tendencies.”<sup>3</sup>

Tony Bennet defines in *The Birth of the Museum* (1995) that the existing cultural body, collected by the ruling class of the monarchs, was not to be simply publicized, but mediated and, therefore, designed.

“Culture, in its existing forms, could not simply be made available and be expected to discharge its reforming obligations of its own and unaided. It needed to be fashioned for the tasks to which it was thus summoned and be put to work in new contexts specially designed for those purposes.”<sup>4</sup>

Bennet defines three focus areas (“issues”) that the design work of early nineteenth-century cultural reformers approached. Firstly, the social space of a museum, as mentioned before a new sphere not defined at the time, had to be created. This entailed the establishment of rational discourse and criticism of art as the works broke with the authoritative tradition of monarchs or the church assigning meaning to the works.<sup>5</sup> Second the museum as an institution had to construct an agency and representational strategy in the context of a post-monarchical society.

“[...] The displacement, in the art gallery, of the king by the citizen as the archactor and metanarrator of a self-referring narrative formed part of a new and broader narrative, one with a wider epistemic reach in which it is ‘Man’ who functions as the archactor and metanarrator of the story of his (for it was a gendered narrative) own development.”<sup>6</sup>

A narration that informed and justified, among others, colonialism and white supremacy as the newly formulated meta narrator was a white European middle- to upper-class cis man. The third issue Bennet argues is the question of defining and teaching the visitor public conduct. This was achieved through architecture and the creation of exhibition spaces that break crowds by self-regulation and self-monitoring leading to an “individuation of the crowd.”<sup>7</sup> As highlighted by this short overview of design objectives of the nineteenth-century exhibition-making the early museum was thought of for passive consumption and education. While the exhibiting practices, especially for modern and contemporary art have

3 Tony Bennett, *The Birth of the Museum: History, Theory, Politics, Culture : Policies and Politics* (London ; New York: Routledge, 1995), 28.

4 Bennett, *The Birth of the Museum*, 24.

5 Bennett, *The Birth of the Museum*, 26.

6 Bennett, *The Birth of the Museum*, 38.

7 Bennett, *The Birth of the Museum*, 56.

been criticized and reformed the exhibitions of traditional paintings (so-called “old masters”) are often up to this time situated within this historic context. Architecturally the collections of works of the “old masters” (loosely defined in this thesis as artworks created before the invention of photography at the beginning of the nineteenth-century) are placed in historic buildings or historicizations. Additionally, the exhibitions are curated in a hierarchical order on a timeline of artistic development of ‘Men’. A concept in which Bennett sees the artworks as props for the visitor to generate a narrative of evolution and development.

“To summarize, the superimposition of the ‘backtelling’ structure of evolutionary narratives on to the spatial arrangements of the museum allowed the museum - in its canonical late-nineteenth-century form - to move the visitor forward through an artefactual environment in which the objects displayed and the order of their relations to one another allowed them to serve as props for a performance in which a progressive, civilizing relationship to the self might be formed and worked upon.”<sup>8</sup>

Consequently, the meaning of the original artwork for the viewer is one of a recording of a time on which we have built. This further distances the viewer from older paintings as the work is perceived as “underdeveloped” and not an artwork that is related to us “modern” humans. The universality of the artwork and its ability to show inherently human stories is undermined by the exhibition organization.

Walter Benjamin discusses the function of paintings and relates the notion of originality in an exhibition space of artworks to another historic event, the discovery, and invention of photography, as well as the printing and mass distribution of imagery.<sup>9</sup> Topic of many discussion, still today, the development of photography has changed how we perceive art and what to us viewers a painting is. Benjamin argues in *The work of art in the age of mechanical reproduction* (1936) “the uniqueness of the work of art is identical with its embeddedness in the context of tradition.”<sup>10</sup> A tradition that was informed by the artworks “singularity or, to use another word, its aura. The original way in which the work of art was embedded in the context of tradition was through worship.”<sup>11</sup> Benjamin elaborates that artworks served as objects of worship in rituals, first of magical nature and later religious. “The ‘one-of-a-kind’ value of the ‘genuine’ work of art has its underpinnings in the ritual in which it had its original, initial utility value.”<sup>12</sup> A value that became obsolete in the age of reproduction as it not only changed the access to existing artworks but also informed the art-making for the future. Benjamin argues that the reproduction frees artworks from their existence as “parasite upon ritual” as the social

8 Bennett, *The Birth of the Museum*, 186.

9 1839 Daguerreotype was introduced to the world as the first successful commercial photographic method.

10 Walter Benjamin, *The Work of Art in the Age of Mechanical Reproduction* (Penguin UK, 2008), 15.

11 Benjamin, *The Work of Art in the Age of Mechanical Reproduction*, 15.

12 Benjamin, *The Work of Art in the Age of Mechanical Reproduction*, 16.

function of art is altered, art can be made for the meanings of art itself.<sup>13</sup> A change, he observes, from a *ritual* function of art to the practice of *politics* as the main role.<sup>14</sup> A position John Berger disagrees on, he states that:

“The visual arts have always existed within a certain preserve; originally this preserve was magical or sacred. But it was also physical: it was the place, the cave, the building, in which, or for which, the work was made. The experience of art, which at first was the experience of ritual, was set apart from the rest of life - precisely in order to be able to exercise power over it. Later the preserve of art became a social one. It entered the culture of the ruling class, whilst physically it was set apart and isolated in their palaces and houses. During all this history the authority of art was inseparable from the particular authority of the preserve.”<sup>15</sup>

For Berger the museum was an extension of the reach to power of the ruling class through art. Only by the means of reproduction art has lost its claim to power. “For the first time ever, images of art have become ephemeral, ubiquitous, insubstantial, available, valueless, free. [...] They have entered the mainstream of life over which they no longer, in themselves, have power.”<sup>16</sup> He further discusses the relevance of paintings and their status as an original. As reproductions change how we see the original paintings since we might have seen the painting before as a print or on the screen, the original painting receives a different meaning.

“[...] the uniqueness of the original now lies in it being the original of a reproduction. It is no longer what its image shows that strikes one as unique; its first meaning is no longer to be found in what it says, but in what it is.”<sup>17</sup>

Therefore, we are now experiencing paintings that have been painted before the development of photography in a fundamentally different context than they have been thought of in their creation. What is left for the viewer to see is its materiality, which Berger argues, does not mean we reduce the experience of seeing the painting to seeing a “survivor” that was preserved through time. Rather we see the immediate gestures of the artist in the dry paint.

“This has the effect of closing the distance in time between the painting of the picture and one’s own act of looking at it. In this special sense all paintings are contemporary. Hence the immediacy of their testimony. Their historical moment is literally there before our eyes.”<sup>18</sup>

13 Benjamin, *The Work of Art in the Age of Mechanical Reproduction*, 16.

14 Benjamin, *The Work of Art in the Age of Mechanical Reproduction*, 17.

15 John Berger, ed., *Ways of Seeing* (London, Harmondsworth: British Broadcasting Corporation; Penguin, 1972), 32.

16 Berger, *Ways of Seeing*, 33.

17 Berger, *Ways of Seeing*, 21.

18 Berger, *Ways of Seeing*, 31.

Raising the question do we must re-learn the seeing of artworks anew? Are we appreciating paintings for their survival or their qualities? As the historicized exhibition spaces and practices of today suggest the viewer is interested in the painting due to nostalgic emotions. Berger observes a manufactured change in the meaning of paintings.

“The bogus religiosity which now surrounds original works of art, and which is ultimately dependent upon their market value, has become the substitute for what paintings lost when the camera made them reproducible. Its function is nostalgic. It is the final empty claim for the continuing values of an oligarchic, undemocratic culture. If the image is no longer unique and exclusive, the art object, the thing, must be made mysteriously so.”<sup>19</sup>

He concludes that original artworks have not fully lost their claim to holy relics. “When the art of the past ceases to be viewed nostalgically, the works will cease to be holy relics.”<sup>20</sup>

As shown the viewing of artworks is highly complex, and, according to Berger, as of today not free of long-lasting structures of control and undemocratic administration. Hence we, the viewer, are socialized to accept the status quo of exhibiting and therefore, the position of narration represented by the institutions. A narration that limits the artistic spectrum of the world to a biased and small selection accepting certain cultural productions while excluding many. While digitalization enables marginalized cultures and art practices to be more present and to connect a critical discourse more effectively it is limited to a digital sphere and seldom can reach the physical of the museum. Moreover, to relate Bergers critical stance to the digital possibilities of exhibiting we can see that digitalization is complicit in creating a mystification of paintings continuing the narrative of the artwork as a holy relic. The new methods are mostly applied within the old structures of the museum as an institution adding a new element to exhibiting: the participation in an experience economy. Creating memorable events to engage the visitor in an “inherently personal way.”<sup>21</sup> Exhibiting commercially successful “made-for-instagram” exhibitions as a performative space for a self-representation utilizing the digital for a specific purpose while disregarding other possibilities such as democratization or a new discourse on visual cultures.<sup>22</sup> How social media will impact the visit to the museum is a question possibly related to the argument of the museum visit as a ritualistic performance elaborated in the next chapter.

19 Berger, *Ways of Seeing*, 23.

20 Berger, *Ways of Seeing*, 30.

21 B. Joseph Pine and James H. Gilmore, *The Experience Economy*, Updated ed (Boston, Mass: Harvard Business Review Press, 2011), 3.

22 Arielle Pardes, “The Rise of the Made-for-Instagram Museum,” *Wired*, accessed April 30, 2022, <https://www.wired.com/story/selfie-factories-instagram-museum/>.

# The Museum as a Ritual Space

The art historian Carol Duncan set a milestone in her criticism of the museum in the publication *Civilizing rituals: inside public art museums* (1995) and laid the grounds for a post-museum, or anti-museum, debate that followed. In criticizing the institution of the public museum she brought along a new concept, the notion of the museum as a space of ritual performance.<sup>23</sup> The ritualistic condition of the museum is argued for along three main points: Firstly, the exhibition halls are a separated space from our daily lives, meaning we, the visitor, bring different attention to the space, then to our daily lives. This is marked by the architectural difference to other buildings and their resemblance to ceremonial memorials as well as churches and temples.

“Museums resemble older ritual sites not so much because of their specific architectural references but because they, too, are settings for rituals [...]. Like most ritual space, museum space is carefully marked off and culturally designated as reserved for a special quality of attention — in this case, for contemplation and learning.”<sup>24</sup>

Secondly, the museum functions as a stage as well as a script for the ritual to be performed through its spacial sequencing, arrangements of objects, and lighting.<sup>25</sup> The museum space comes with defined social behaviors, rules, and expectations. A comparison of the ritualized medieval pilgrimage to the cathedrals is drawn. Finally, the transformative quality of rituals is highlighted. As a ritual is a process with a starting point and a result “[...] it confers or renews identity or purifies or restores order in the self or to the world through sacrifice, ordeal, or enlightenment.”<sup>26</sup> Characteristic often attributed with a visit to the museum: “according to their advocates, museum visitors come away with

23 While Duncan could build on a wide range of scholarly debates regarding critical museology the scope of this thesis does not allow for more elaboration. For more information see: Jesús Pedro Lorente, *Reflections on Critical Museology: Inside and Outside Museums, Museums in Focus* (Abingdon, Oxon ; New York, NY: Routledge, 2022).

24 Carol Duncan, *Civilizing Rituals: Inside Public Art Museums, Re Visions* (London, England) (London ; New York: Routledge, 1995), 10.

25 Duncan, *Civilizing Rituals*, 12.

26 Duncan, *Civilizing Rituals*, 13.



a sense of enlightenment, or a feeling of having been spiritually nourished or restored.”<sup>27</sup> Therefore, Duncan stresses the ritualistic performance of a museum visit and its understanding of such by the people.

As sites of political and cultural importance, Duncan sees in the museum the intersection of both. “Museums are therefore excellent fields in which to study the intersection of power and the history of cultural forms.”<sup>28</sup>

As illustrated the museum is a ritualized space, a condition that withholds us from experiencing the paintings for their qualities. Their structures are deeply ingrained in our societies and have been made a global standard through colonization. A problematic condition as: “the meanings of objects are constructed from the position from which they are viewed.”<sup>29</sup> The argumentation of the museum as a ritualized space raises the question if we are able to experience art differently? Or are we socialized to conduct a performative viewing not fit our personal needs? One idea to create a more personal and social museum is the ambitious concept of the post-museum discussed in the next chapter.

## The Post-Museum

The concept of the post-museum is one of restructuring the museum from a place of singular knowledge production to a democratic space of joined sense-making and defining of visual culture. The power of institutions to create and form culture is acknowledged and challenged. When showing an artwork there always are objects excluded from this selection, a condition navigated by the post museum through the involvement of the people, their imaginations, and emotions.

The concept of the post-museum was first brought forward by Eilean Hooper-Greenhill most notably in her publication *Museums and the interpretation of visual culture* (2000). The “modernist museums,” the museum as though of in the nineteenth-century and still lived today, “was tasked with the production and dissemination of authoritative knowledge.”<sup>30</sup> Hooper-Greenhill defines this authoritative structure as the key element that constitutes the modernist museum:

“The modernist museum was intended to be encyclopedic, to draw together a complete collection, to act as a universal archive. It was structured through deep rooted binary divisions. Its spaces were divided between those that were private and those that were public. The private spaces were the spaces for knowledge production,

27 Duncan, *Civilizing Rituals*, 13.

28 Duncan, *Civilizing Rituals*, 6.

29 Eilean Hooper-Greenhill, *Museums and the Interpretation of Visual Culture*, Museum Meanings (London ; New York: Routledge, 2000), 103.

30 Hooper-Greenhill, *Museums and the Interpretation of Visual Culture*, 126.



irrevocably separated from the public spaces for knowledge consumption. The private spaces were spaces where specialist knowledge was deployed, where scholarly research was carried out, and where products such as exhibitions and catalogues were fashioned. The bodies occupying the spaces were professionalized, specialized and differentiated, each with its own necessary mental freight which justified its presence. The public spaces, on the other hand, were available, in theory at least, to the mass of the general public; undifferentiated bodies that assembled to partake of the specialist information laid out for them in the galleries.”<sup>31</sup>

Hence, the post-modern museum must, while still considering specialist knowledge, integrate the “knowledge based on the everyday human experience of visitors and non-specialist. Where the modernist museum transmitted factual information, the post-museum also tries to involve the emotions and the imaginations of visitors.”<sup>32</sup> The post-museum is not constructing “master narratives” (narratives of unique and special talent in one single person) but is a space where many voices are heard and listened to.<sup>33</sup> Through this the concept of established modernist museums and narratives are challenged and met with an alternative. Concepts such as nation-state, hold up by the categorization of art in groups based on borders, or the rationalized visual order of art in a hierarchical order. An order in which the exhibited object services as “[...] prompt and an opportunity [for the visitor] to civilize themselves and in so doing, by treating the exhibits as props for a social performance aimed at ascending through the ranks, to help to keep progress on path.”<sup>34</sup> The post-museum is a concept and theoretical speculation for a fairer visual culture, representation, and experience.

“The biggest challenge facing museums at the present time is the reconceptualisation of the museum/audience relationship.”<sup>35</sup>

This thesis builds on Hooper-Greenhill’s concept of the post-museum by creating a possible reconceptualization of this relationship in creating a new framework of exhibiting and art-viewing. By doing so the artworks are introduced in new situatedness and possibly revise a new meaning to its viewers.

31 Hooper-Greenhill, *Museums and the Interpretation of Visual Culture*, 126.

32 Hooper-Greenhill, *Museums and the Interpretation of Visual Culture*, 142-143.

33 Hooper-Greenhill, *Museums and the Interpretation of Visual Culture*, 144.

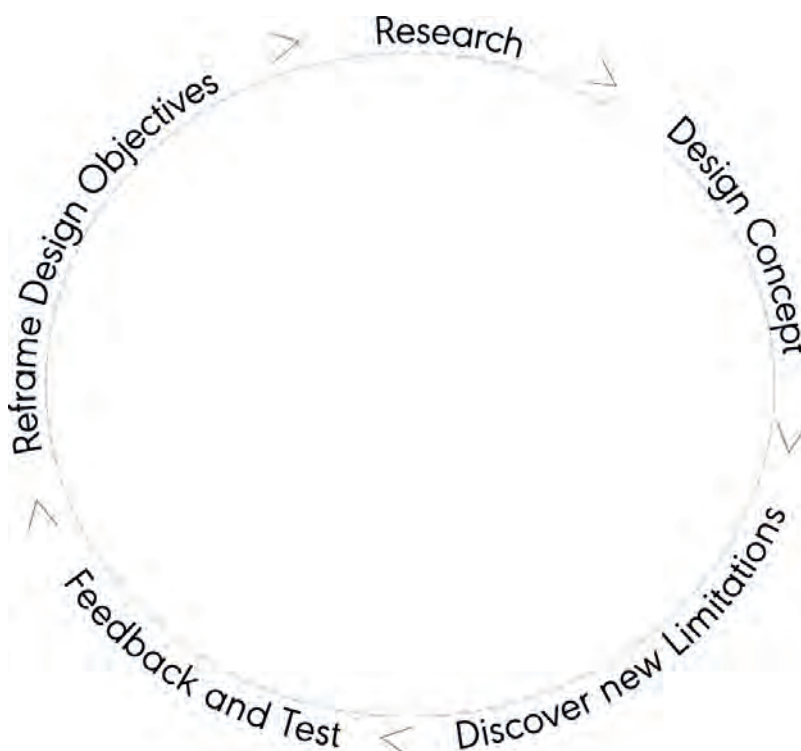
34 Bennett, *The Birth of the Museum*, 47.

35 Hooper-Greenhill, *Museums and the Interpretation of Visual Culture*, 1.

# Design Iterations and Research

## Structure

The design process started with a hypothesis leading to four different iterations. Each iteration was preceded by research informing the concept and shaping the development. Through these design loops, the design process was driven by a continuous development of learning and enriching the design objectives as well as the outcome of the iterations.



In the following structure, each Iteration is discussed as well as their design research findings. The research encompassed cultural theory in addition to design theory investigating the first at the beginning of this thesis and referring to design theory to find possible solutions suiting the identified problem.

Through this process, the question and hypothesis of this thesis was continuously sharpened and reframed leading to divergent iterations and concepts. The overarching question of this thesis regarded the museum space as an institution and how its cultural power could be matched. The first approach was to create through interaction a possible different experience in the museum space leading to a change of perception of paintings. This advance set out to create a longer reflection with the artworks and potentially educate people on aspects of the painting creating

a more reflective encounter with the art. In the process the shortcomings of such an approach were highlighted and it was determined that a change of perception will not change the situation in which we see the paintings. This led to the final iteration setting out to change the context of the exhibition and therefore, the situatedness of the paintings.

The iterations build on each other and are defining the research question with each step. While at the beginning of the design process the hypothesis focused on altering visual culture through the change of the perception of paintings, this design process revealed the need for an alternative exhibiting context. Through this approach, the design process becomes an inquiry with each iteration as an intermediate result informing the final outcome that is based on the research.

# Iteration 1

## Theoretical Framework

### Paintings

The medium of painting is one of the most important artistic practices in western art history and can only briefly be touched upon in the scope of this project. The thesis is focused on paintings that have been long regarded as important works and have most likely potential to be recognized and associated as such. The thesis focus on western artworks. When referring to paintings in this thesis the unifying definition by Julian Bell is used. “We have seen that until the 18th century, at the least, it had one common, minimal definition in the West: painting was the marking of surfaces so as to represent visible things.”<sup>36</sup>

### Art Education

The development of art education in the western hemisphere is as complex as the continued progress of art itself. Throughout human existence art creation was taught to the following generations of artists and craftsmen through different methods, reflecting the societies and structures they were placed in. From workshops led by an artist to craftsmen functioning in an apprenticeship system the social rank of an artist, and therefore art education, was low as they worked as patronage to absolute power — the monarchy or the church. With the Renaissance, the arts and cultures developed through Humanistic thought to a higher rank, the rank of an *artistic genius*. A narration of master artists was formed around successful artist and their workshops. Intellectual inheritance by Italian scholars was rediscovered and revisited in the Renaissance in central Europe leading to an education system practiced in Europe for centuries.<sup>37</sup> While early art education was only for a few, the creation of common schools introduced art education to all leading to its current form of today.

36 Julian Bell, *What Is Painting? Representation and Modern Art* (New York, NY: Thames & Hudson, 2017), 29.

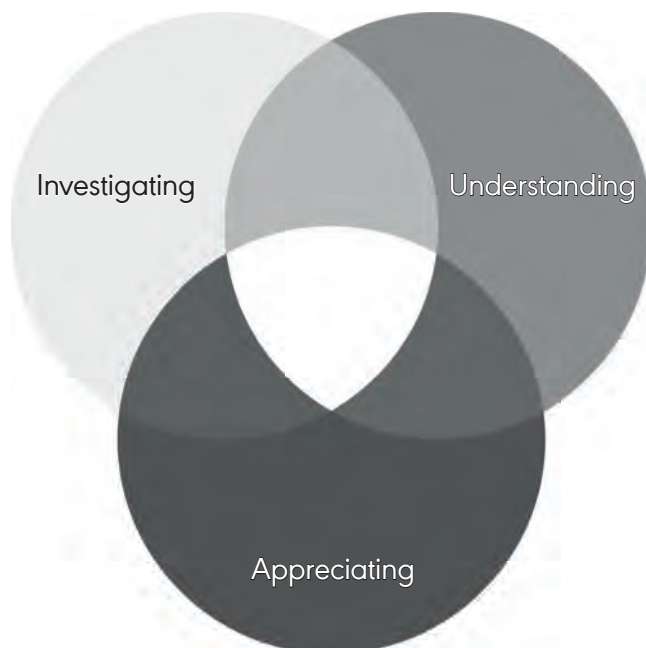
37 Arthur Efland, *A History of Art Education: Intellectual and Social Currents in Teaching the Visual Arts* (New York: Teachers College Press, 1990), 26.

## Viewing Art

John Dewey opens his publication *Art as Experience* (1934) with the statement that art cannot be experienced neutrally as its context is clouding our senses. The works are “[...] isolated from the human conditions under which it was brought into being and from the human consequences it engenders in actual life experience.”<sup>38</sup> The status given to artworks and their exhibition context only enables us to “admire,” therefore, not experience art. A premise that underlines this thesis.

When we see an artwork for the first time many impressions are processed by us. If we spend enough time, attention, and interest to experience the artwork to the fullest is depended on many interpersonal reasons. Internal reasons that are many and difficult to address as a designer, but not impossible. The spatial arrangement of an exhibition space and layout can change our behavior as an audience and can be adjusted to a space of contemplation, reflection, and observation.

At the beginning of any encounter with a paintings lies an *investigation*, observation, and the question of processing what is in front of one. The following *understanding* requires us to assimilate the information and form an understanding, opinion, and thought. After the investigation and understanding the audience has grasped what is presented in front and has time to *appreciate*. This is a contemplative and most demanding moment as the procedure of looking at a painting to process information changes from looking to make sense to view as pleasure.



The discussed three perception steps are not a singular entity and become a circle of revisitation, rediscovery, relearning, and new appreciation.



At the core of understanding lies reflection, a process that has been the subject of many debates. Dewey finds in his writing six phases to reflection, formulated by Carol Rodgers:

1. An experience
2. Spontaneous interpretation of the experience
3. Naming the problem(s) or the question(s) that arises out of the experience
4. Generating possible explanations for the problem(s) or question(s) posed
5. Ramifying the explanations into full-blown hypotheses
6. Experimenting or testing the selected hypotheses <sup>39</sup>

Iteration 1 aims to function as a facilitator to the three discussed phases of looking at a painting to enable, stimulate and incentivize. Reflection is discovered as a possible vehicle for forming an alternative experience. An alternative that could use metaphors used in daily life as a basis for interaction, as discussed next.

39 Carol Rodgers, "Defining Reflection: Another Look at John Dewey and Reflective Thinking," *Teachers College Record* 104, no. 4 (2002): 842-66, 851.

## Conceptual Metaphor Theory

The Conceptual Metaphor Theory began as a linguistic and cognitive concept, however, ongoing research since the 1980s suggests it to be a fundamental aspect of life “serving as the foundation of all abstract thought.”<sup>40</sup> To define abstract concepts, the theory states, we reason with body-based experiences to conceptualization metaphors. Experiences are ubiquitous and challenge us to process the constant stream of information. As a helping mechanism, we have developed the recognition of *recurring patterns*.

“We are subject to forces that move us, change our bodily states, and constrain our actions, and all these forces have characteristic patterns and qualities. We are bound inextricably to our world interactively (enactively) by means of these recurring patterns that are the very conditions for us to survive, grow, and find meaning. Without such patterns, and without neural maps of such characteristic patterns, each moment of our experience would be utterly chaotic, as though we had to make sense of our world from scratch, over and over again as each new moment arose.”<sup>41</sup>

Recurring patterns can be understood as a “sensorimotor experience by which we encounter a world that we can understand and act within to further our purposes.”<sup>42</sup> As bodies are under the constant influence of gravity, for example, every motion is a recurring pattern. Up-down, left-right, front-back, center-periphery our motions are constantly trying to navigate us between the balance and unbalance of our bodies. These, and many more, recurring patterns form a mapping from a sensory-motor source domain to an abstract domain. This means in practice that the sensory-motor domain of an up and down is that of a vertical orientation, mapped to the abstract domain we have a quantity increase or decrease that we assign value to. Examples can be found in expressions such as:

*“The price of oil is going up”*

*“Speak up, we can’t hear you”*

*“Unemployment is going down”*

Through this example, the Conceptual Metaphor Theory can be understood as a correlation of cross-domain conceptual metaphors created by shared bodily experiences.

Iteration 1 sets out to apply this theory to the intersection of art and the audience, namely the interaction between the two. The cross-domain mappings and their metaphors have the potential to activate deep-rooted associations and most intuitive interaction. The question arises if the perception of paintings can change through this application. The argument

40 Paul C. Parsons, “Conceptual Metaphor Theory as a Foundation for Communicative Visualization Design,” in IEEE VIS Workshop on Visualization for Communication (VisComm 2018), 2018, 1.

41 Mark Johnson, *Embodied Mind, Meaning, and Reason: How Our Bodies Give Rise to Understanding* (Chicago: The University of Chicago Press, 2017), 82.

42 Johnson, *Embodied Mind, Meaning, and Reason*, 82.

could be made that the creation of the painting was already heavily influenced by conceptual metaphors and formal analysis of the paintings revivals this theory in practice. To revisit the example of up and down we see that the same metaphor applies. Important figures often are placed at the top of the painting intentionally, a visual hierarchy determines the composition. Therefore, the sensory-motor domain influenced the artist to display a lived Conceptual Metaphor Theory, the outcome of this process, the painting, can be seen as their abstract domain mapping creating the metaphor. This means that the paintings inherently contain recurring patterns; we have to search for them in the abstract domain of the paintings. If this theory proves to be applicable the paintings can be understood as an instruction for bodily experiences.

## Summary

At the beginning of the design research process, the medium of paintings was briefly discussed and defined for the scope of this thesis. Insights into the structuring of art education were gained to inform a possible design direction. Further, the viewing of art was investigated and possible points for consideration were determined. As a framework, the Conceptual Metaphor Theory was explored leading to the first artifact of the design development.

Iteration 1 consists of two prototypes aiming to show the Conceptual Metaphors inherent in the chosen paintings. Prototype 1 (fig. 1) displays how lighting signifies importance in the pictorial space. One of the lived Conceptual Metaphors related is the bright-dark contrast. An example could be: “her future is bright” the light represents a good circumstance. Prototype 1 functions as a light box allowing its viewer to move the box while the light source is fixed. This has the effect of showing through movement which areas in the paintings are most bright and therefore, most important (see fig. 2).

Prototype 2 (fig. 3) aims to reveal the metaphor of large and small in the pictorial space related to importance. “She has big news” is an example of this metaphor in our every day showing that bigger things are better for us. This is achieved by providing cut-outs that can be repositioned changing the perspective and size of each cut out (see fig. 4). Iteration 1 was successful in creating the first tangible prototype enabling an understanding how in the pictorial space meaning and importance is created. The theory of the conceptual metaphors could be applied to create interaction enabling the viewer to actively change the paintings meaning and one’s perception of it. This would lead to a different viewing of paintings, in the next iteration an alternative interaction is tested.

# Iteration 2

## Theoretical Framework

### Experiments

The experiment accompanying Iteration 2 was set over the course of two meetings with a boy (7 years old) and a girl (5 years old). The first meeting served as a survey where questions regarding a selection of paintings were asked investigating if the hierarchies within the picture plane were recognized. It became apparent that the children immediately could recognize the most important person in the painting, often this did not correlate to the most interesting aspect of the painting to them. Further, it was investigated if a hierarchy of colors was recognized by asking them to mark colors within the paintings to see which colors they would select first (see fig. 7 and fig. 8). Primary colors were recognized first. This led to the second experiment where a transparent paper was placed over a print of a painting (*Flight into Egypt* by Adriaen Isenbrant, dated to 1525), and the children were invited to color the transparent paper (see fig. 9). The outcome of this experiment varied (see fig. 10 and fig. 11) depending on age. The older boy saw a challenge in accurately coloring and was happy with the realistic result (see fig. 10.1) while the younger girl quickly filled large areas with color and became disinterested more quickly (see fig. 11.1). The task motivated the children partly to pay more attention to the details in the painting otherwise overseen. For example, a discussion arose if it is a city or castle in the far background. By drawing more time was spent looking at the painting and investigating smaller objects within the painting. If this effect would be the same in the museum space, or possibly stronger, can not be deduced from this test. The experiment invited the children to slow down and spend time with a painting, an offer accepted by the children. In the experiment, the children roughly spend 30 min with the task until the younger one finished the painting.

### Interaction in exhibitions

Technology-enabled interaction in the museum space has been identified as an important element for future exhibition-making and is transforming traditional learning experiences.<sup>43</sup> Cultural institutions are interested in enabling an active learning rather than a passive one and are shifting their focus through Interaction activities to the creation of experiences.<sup>44</sup> In recent developments interaction designers found different approaches to the question of interactivity in the cultural sphere. Inquiring mostly on

43 Marie-Monique Schaper et al., "Learning about the Past through Situatedness, Embodied Exploration and Digital Augmentation of Cultural Heritage Sites," *International Journal of Human-Computer Studies* 114 (2018): 36–50, <https://doi.org/10.1016/j.ijhcs.2018.01.003>, 1.

44 Petros Ioannidis, "Designing for Play and Appropriation in Museum Experiences Involving Tangible Interactions and Digital Technologies," in *Extended Abstracts of the 2020 Annual Symposium on Computer-Human Interaction in Play*, 2020, 15–17, 15.



“cultural heritage sites” the research, initiatives, and approaches concerned historic sites, objects of the sites, or the recreation of a site-specific atmosphere. While research on digital interaction in the museum has been ongoing since the 1990s, various funding programs, for example by the European Commission (2014-2018), have given a boost.<sup>45</sup> The focus of the founding and, therefore, the research was on the intersection of technology and exhibition practices. Technological achievements such as Mixed Reality and 3D rendering have been used as vehicle and tool for design discussions and theoretical advances in exhibiting. A tendency that looks for use and purpose of the technology in a museum but does not question, if the viewer is in need of a digital experience. The funding supports the process of digitization and at the same time justifies the process, as it is a technology-driven approach.

As the research suggests digital interaction is beneficial for the viewer of Heritage sites and historical artifacts.<sup>46</sup> A conclusion the team of the project *Refugi 307 is sharing*.<sup>47</sup> The project investigated the augmentation of a bomb shelter built during the Spanish Civil War to increase a learning experience, collaborative activities, and emotional engagement through embodied enactments (see fig. 13). An AR learning allowed for spatial interaction, tangible manipulation, and collaborative approaches. While this proposal functions in the context of its situatedness the learnings suggest that the additional educational layer helped especially young children to find an emotional stronger bond. In this project the argumentation enabled a passive space to become active through the communities visiting being enabled to create a bond to an abstract historical condition. Through this approach the historic site grew larger than its physical limitations allow, it became a place of emotional attachment and reflection. A development this thesis is interested in. The immersive displays of Tate Sensorium inquired how additional sensory stimulus changes the visitor’s behavior and engagement with a painting. Sound, smell, touch, and hearing are stimulated whilst looking at a painting creating an immersive viewing of the depicted (see fig. 14). An art-historical evaluation of this inquiry was especially critical about the augmentation of Francis Bacon’s *Figure in a Landscape* questioning if the emotional depth of the painting is reflected in the process. “Does supplementing *Figure in a Landscape* with multi-sensory input rob it precisely of what it uniquely offers: namely, a profoundly affecting experience of absence or lack? A situation that can be described as the lack

45 Laura Loredana Micoli, Giandomenico Caruso, and Gabriele Guidi, “Design of Digital Interaction for Complex Museum Collections,” *Multimodal Technologies and Interaction* 4, no. 2 (June 22, 2020): 31, <https://doi.org/10.3390/mti4020031>, 3.

46 Elena Not, Dario Cavada, Stefano Maule, Anna Pisetti, and Adriano Venturini. 2019. Digital Augmentation of Historical Objects Through Tangible Interaction. *J. Comput. Cult. Herit.* 12, 3, Article 18 (October 2019), 3.

47 Schaper et al., “Learning about the Past through Situatedness, Embodied Exploration and Digital Augmentation of Cultural Heritage Sites,” 49.

of a lack.<sup>48</sup> The answer is indefinite, as positive aspects, it was concluded that a longer engagement with the paintings was observed as well as a higher interest in the exhibition due to its “buzz.” A development was also observed in the experiments of Iteration 2.

The next section surveys how the existing exhibitions of the so-called “old masters” are introducing their collection to a young audience.

If we consider classical museum-guided tours and workshops for children (age 6 years and older) as an offer for interaction as a viewer for participation with the works we see the idea of creating experiences and interaction has been implemented through different concepts. Often, the interaction of the tours comes in the form of art-making and is attached after a lecture or guided tour, for example in the *Kunsthaus Zürich* and *The Metropolitan Museum New York*. In the art-making process, children are invited to paint, mix colors, draw, sketch, create collages, and many more activities to apply the learned. Similar *Gemäldegalerie Alte Meister Dresden* is offering courses and activities with additional options in the art-making process. *Gemäldegalerie Berlin*, moreover, includes collaborative projections in the creative section. *National Museum Stockholm* discusses in the guided tours critical questions of identities, bodies, feelings, and art in this context. A focus on sensual and aesthetic aspects of learning is placed and different modes of expression are used. This overview shows a clear separation between art seeing and art-making. This separation is spatial and theoretical, art-viewing and art-making are not to be understood as a synergy. Furthermore, the exhibition space is subject to the previously discussed rules of behavior and conduct as the museum space is separated from the space of activity. The performative ritual of the museum visit is imposed on the young viewers as it is only after the visit of the exhibition, after the by Duncan argued enlightenment, that the own art-making process can start. *The National Museum Stockholm* peruses the most progressive tour of the selection raising questions of depiction and influencing identities as well as considering the viewer’s emotions in the process.

## Reflective Design

Rowanne Fleck and Geraldine Fitzpatrick synthesize in their research different approaches of reflection in design as the term has been used somewhat fuzzy without definition.<sup>49</sup> With this method they define five steps of reflection in the thought process and how design can aid in the development. The steps are defined as follows:

48 Tom Pursey and David Lomas, “Tate Sensorium: An Experiment in Multisensory Immersive Design,” *The Senses and Society* 13, no. 3 (September 2, 2018): 354–66, <https://doi.org/10.1080/17458927.2018.1516026>, 364–365.

49 Rowanne Fleck and Geraldine Fitzpatrick, “Reflecting on Reflection: Framing a Design Landscape,” in *Proceedings of the 22nd Conference of the Computer-Human Interaction Special Interest Group of Australia on Computer-Human Interaction*, 2010, 216–223, 216.

*R0 Description: Revisiting*

Description or statement about events without further elaboration or explanation. Not reflective.

*R1 Reflective Description: Revisiting with Explanation*

Description includes justification or reasons for action or interpretation, but repetitively or descriptively. No alternate explanations were explored leading to limited analysis and no change of perspective.

*R2 Dialogic Reflection: Exploring Relationships*

Looking for relationships between pieces of experience or knowledge. An interpreting and questioning approach, considering different explanations, hypotheses, and other points of view.

*R3 Transformative Reflection: Fundamental Change*

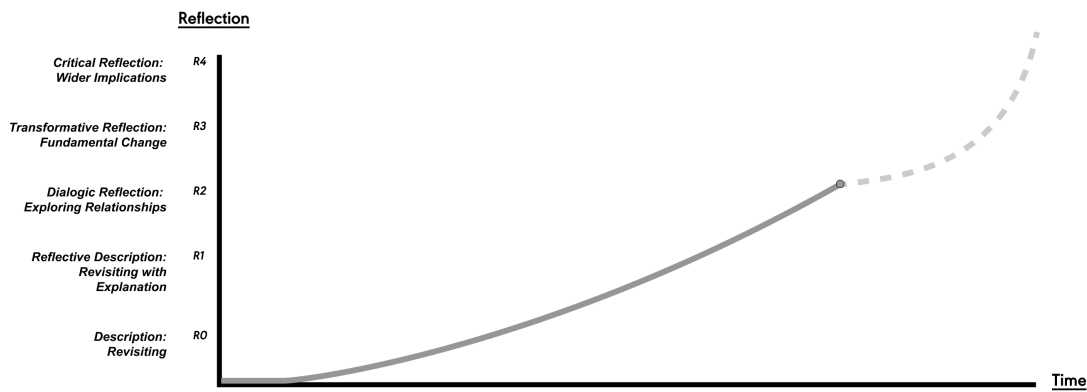
Revisiting an event or knowledge with the intent to re-organize and/or do something differently. Asking fundamental questions and challenging personal assumptions leading to a change in practice or understanding.

*R4 Critical Reflection: Wider Implications*

An approach where social and ethical issues are taken into consideration. Generally considering the much wider picture<sup>50</sup>

*Iteration 2* is interested in guiding this development by structuring the use of the prototype around it. In this approach, the activity of drawing would be matched with visual feedback of the drawings from other visitors initiating the first reflective step R0 as a visual record is revealed. Thereafter, the reflection of R1 follows as the other users drawing needed to be explained and justified. Through this reasoning, R2 is achieved as a different perspective is seen and understood. The steps of R3 and R4 would occur as a reaction to this experience in a later stage. The reflective timeline of this interaction was an ambitious goal for the prototype and could not fully be fulfilled. This is partly because of a lack of mediation and partly due to the drawings by others not providing sufficient stimulus. Nevertheless, the research into reflection in design has informed the following iterations and has shown potential in reconfiguring existing viewing practices, as they do not spark a reflective viewing.

50 Fleck and Fitzpatrick, "Reflecting on Reflection," 217-218.



**Activity:** Fleck, Rowanne, and Geraldine Fitzpatrick. "Reflecting on reflection: framing a design landscape." In Proceedings of the 22nd Conference of the Computer-Human Interaction Special Interest Group of Australia on Computer-Human Interaction, pp. 216-223. 2010.

**Effect:**

**Slow Design Principles:** Grosse-Hering, Barbara, Jon Mason, Dzmitry Aliakseyeu, Conny Bakker, and Pieter Desmet. "Slow design for meaningful interactions." In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, pp. 3431-3440. 2013.

Carolyn F. Strauss and Alastair Fuad-Luke

**Possible Conversations and Social Interaction:** Bruder, Kurt A., and Ozum Ucok. "Interactive art interpretation: How viewers make sense of paintings in conversation." *Symbolic Interaction* 23, no. 4 (2000): 337-358.

## Summary

*Iteration 2* sets out to create an interaction with the painting through an activity most people and –especially children– are most comfortable in. By building an opportunity to draw actively in relation to the painting. The activity of drawing is a safe space we know to be allowed to create freely and creatively enabling an active rather than passive participation in the exhibition space.

Background research accompanying this approach was conducted on different concepts of activities and interaction in museums and heritage sites. Accompanied by the theoretical research drawing experiments hosted with children.

As a result of this iteration, a prototype was created displaying a possible outcome of this design loop (fig. 5). The prototype consists of a screen embedded inside a table displaying the painting hung on the wall. Sheets of paper could be put on top of the screen allowing the drawing on the paper while the screen shines through the paper highlighting areas (see fig.6). The areas lit by the screen were determined by the choice of the pen. The selection of, for example the green pen, would trigger the screen to slowly reveal previously drawn green spots by other visitors. After the drawing the sheet of paper would be scanned by inserting the paper at the bottom of the screen into a scanner, adding the work to the collection of other drawings. The prototype concept aimed at creating a space of reflection through drawing and seeing other user's previous

drawn approaches by other visitors highlighted on the paper. For the design of a reflective experience the iteration relies on Rowanne Fleck's and Geraldine Fitzpatrick's research regarding designing a supporting reflection. Defined are through a survey of designerly approaches of reflection in the design theory five steps in reflection, further steps how a design can support this reflection are laid out.

The concept of this prototype explored if a reflective drawing activity can change the museum visit and speculated if a change in the perception of paintings would occur. As a basis for this change, the activity of drawing has been chosen in relation to seeing other visitor's sketches. This activity has shown not coherently in the process of changing the perception of paintings. Quickly the focus of the viewer was directed to the task of drawing and especially drawing within the lines of the painting. As the concept wanted to foster a reflective activity the coloring of paintings has shown to have a too strong meditative quality contradicting a reflection. Although the process of drawing is arguably an activity we are more comfortable in, painting would have suited better as this would resemble the practice by which the paintings have been created. Additionally, the concept of the table had a complicated usability as the scanning process did not come naturally.

Nevertheless, the iteration has provided one possible scenario of bringing active participation in the otherwise passive exhibition space. Through a collective archive of drawings, a possible exchange with different visitors across time could have provided a reference displaying differences in where one sees the importance to draw.

## Iteration 3

### Theoretical Framework

#### Slow Design

Slow Design is more than a design process. It is a movement concerned with the metabolism of people (rather than users), products, and, the influence they have on lives, environments, minds, and societies. Well-being is placed at the heart of the process encouraging us to design and plan for greater lengths of production and consumption. While aspects of the moment have been addressed by previous design concepts in the past such as the need for ecological efficiency in production by the Arts and Craft movement and raised awareness of overproduction and consumption in the 1970s, the movement has been fundamentally defined by Italian Slow Food activism and the *Slow Design Manifesto* by Alastair Fuad-Luke (2003).<sup>51</sup> As guiding theoretical framework for a Slow Design process six different open-ended principles are defined by Fuad-Luke and Strauss:

51 Alastair Fuad-Luke, "Slow Design," in *Wörterbuch Design: Begriffliche Perspektiven Des Design*, ed. Michael Erlhoff and Tim Marshall (Basel: Birkhäuser Basel, 2008), 368-69, [https://doi.org/10.1007/978-3-7643-8142-4\\_344](https://doi.org/10.1007/978-3-7643-8142-4_344), [translated by author].

#### *Reveal*

Slow design reveals experiences in everyday life that are often missed or forgotten, including the materials and processes that can be easily overlooked in an artifact's existence or creation.

#### *Expand*

Slow design considers the real and potential “expressions” of artifacts and environments beyond their perceived functionalities, physical attributes and lifespans.

#### *Reflect*

Slow Design artifacts/environments/experiences induce contemplation and what slowLab has coined ‘reflective consumption.’

#### *Engage*

Slow Design processes are open-source and collaborative, relying on sharing, cooperation, and transparency of information so that designs may continue to evolve into the future.

#### *Participate*

Slow Design encourages users to become active participants in the design process, embracing ideas of conviviality and exchange to foster social accountability and enhance communities.

#### *Evolve*

Slow Design recognizes that richer experiences can emerge from the dynamic maturation of artifacts, environments, and systems over time. Looking beyond the needs and circumstances of the present day, slow designs are (behavioral) change agents.<sup>52</sup>

These principles have influenced works, discussions, and research ambitions. Investigated through the scope of Product Design inquiring how meaningful interactions with objects can be created the research of Grosse-Hering revisits the principles and adds a seventh one.

#### *Reveal*

Creating awareness, uncover the function and essence of a product.

#### *Expand*

Give a bigger picture: zoom in (what is it made of) and zoom out (where does it come from).

#### *Reflect*

Provide time for the user to think and reflect on his or her actions, visualize processes and create narrative products.

52 Carolyn F. Strauss and Alastair Fuad-Luke, “The Slow Design Principles: A New Interrogative and Reflexive Tool for Design Research and Practice,” *Changing the Change*. Torino, 2008, 3-8.

### *Engage*

Create Do-it-yourself concepts; the user becomes a designer; the user is active in the creation of the product.

### *Participate*

Create opportunities, supporting the user to personalize and reconfigure the product; the user is active during the use of the product.

### *Evolve*

Create products that are changing or growing over time.

### *Ritual (New principle)*

Create rituals for a better user experience, stimulating social interaction and provide security and stability in a hectic society.<sup>53</sup>

*Iteration 3* was concerned with positioning a concept in the framework of slow design. As a strategy, it was deemed a most suitable framework to create a long-lasting experience with the most potential in reflection. As the concept of iteration 3 was not complete, the leanings and research of the slow design principles will find their use in the final artifact.

## Summary

*Iteration 3* builds on the concept and learnings of the previous iteration. A new field of research was the investigation into slow design. While aspects of the theory were already included in the *Iteration 2* principles of slow design have been used to relate to a reflective design. In this iteration the principles were used to formulate a concept. The concept of *iteration 3* regarded light in the picture plane as well as the exhibition space as a guiding aspect of the experience. The painting was to be hung in a very dark environment allowing the user to guide a spot-light tracing their gaze through the light source and the trace it left (see fig.12). The concept of iteration 3 remained unfinished as the three design loops informed the process to change directions and design the situation paintings are hung rather than the viewing. This led to the development of the fourth iteration.

53 Barbara Grosse-Hering et al., "Slow Design for Meaningful Interactions," in Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, 2013, 3431-3440, 3433-3434.

# Iteration 4

## Theoretical Framework

### Speculative Design

“Speculation through design by presenting abstract issues as fictional products enables us to explore ethical and social issues within the context of everyday life.”<sup>54</sup>

Within the last turn of the Century, the field of design has been redefined, diversified, and extended by practitioners, researchers, and the academic discourse to find answers and reactions to new challenging circumstances of the ever so fast-changing 21st Century. One designerly practice arising from Critical Design was the field of Speculative Design; popularized by Anthony Dunne and Fiona Raby. A field focusing on future outcomes and development of and through design by means of imagining beyond the known. A process summarized in their publication *Speculative Everything: Design, Fiction, and Social Dreaming* (2013), as:

“For us futures are not a destination or something to be strived for but a medium to aim imaginative thought – to speculate with. Not just about the future but about today as well, and this is where they become critique, especially when they highlight limitation that can be removed and loosen, even just a bit, reality’s grip on our imagination.”<sup>55</sup>

Understanding the future as a laboratory, exploring and speculating all while connected to our lived realities, enables us to use design as a tool to materialize change in our imagination. A change that is not limited to a product but rather positions society and possible outcomes of a designed object critically in relation to it. “It is the gap between reality as we know it and the different idea of reality referred to in the critical design proposal that creates the space for discussion.”<sup>56</sup> A discussion that can encourage us to assess the future better as the designerly scenarios are highlighting possible paths and directions in future-making. “By moving upstream and exploring ideas before they become products or even technologies, designers can look into the possible consequences of technological applications before they happen.”<sup>57</sup> This means that the designer is designing implication rather than application and, therefore, is responsible and accountable for their work in the broader context of society.<sup>58</sup> “The

54 Anthony Dunne and Fiona Raby, *Speculative Everything: Design, Fiction, and Social Dreaming* (Cambridge, Massachusetts ; London: The MIT Press, 2013), 51.

55 Dunne and Raby, *Speculative Everything*, 3.

56 Dunne and Raby, *Speculative Everything*, 35.

57 Dunne and Raby, *Speculative Everything*, 47.

58 Dunne and Raby, *Speculative Everything*, 49.



best speculative designs do more than communicate; they suggest possible uses, interaction, and behaviours not always obvious at a quick glance.”<sup>59</sup> Therefore, the power of the speculation lays in the question that the design raises. Is this a development we are interested in and want to enable? Is this the right path to take?

For Speculative Design to achieve this effect a framework is defined by Dunne and Raby, namely, the artifact should be designed not to be easily dismissed as fiction and needs to be situated in our existing material culture. As the artifacts are “[...] triggers that can help us construct in our minds a world shaped by different ideas, values, and beliefs to our own, better or worse, that we can entertain and reflect on.”<sup>60</sup> By using design to create such triggers their power lies within the realm of the real, our lived material culture. If the artifact is labeled as art it becomes an abstract idea, only design has the agency to be perceived as a situated object within our lives.<sup>61</sup> Hence, the speculative artifact is a design for change and a moment of contemplation. At the intersection of design, fiction, and art, the artifact enables to communicate complex concepts all while speculating possible futures.

“[Through the speculative design] something about the world changed, but nothing in the world changed”<sup>62</sup>

The artifact and concept of this thesis *-Vidēntium-* is interested in manifesting one possible scenario through speculation. While a dystopian turn would have been possible the project aims to be utopian illustrating how a variant of Eilean Hooper-Greenhill conceptualized post-museum could occur. While the proposition is speculative the steps necessary to create the *Vidēntium* are not. In this condition, the power of the speculative design approach is based as the concept could be. Not materials or technology must change, only our minds.

## Summary

The fourth and final design loop builds on the previous conducted research, experiments, and feedback. In its creation of the final artifact, the iteration is different in its approach from the earlier works. While the work so far was related to how the viewer is viewing the painting in the museum space and how an interaction could be shaped in this context the new approach is one of creating new circumstances around the painting in order to influence an interaction. This holistic approach not only acknowledges the situatedness of paintings in the museum but aims to create and form a new context around the paintings. To achieve this goal, speculative design is utilized and explored. This approach is based

59 Dunne and Raby, *Speculative Everything*, 139.

60 Dunne and Raby, *Speculative Everything*, 91.

61 Dunne and Raby, *Speculative Everything*, 43.

62 Bleecker Julian. “No30 – Dunne & Raby,” Interview with Anthony Dunne and Fiona Raby. Near Future Laboratory Podcast, Spotify, March 15, 2022. Podcast audio, 1:14:10. <https://open.spotify.com/episode/64YF2qZRiHsd5z3vaKjJhN?si=ff8aa73f9a874248>.

on the realization through the earlier iterations that a true and powerful shift in perception of art can only be achieved in speculating a possible post-museum scenario. Because only then, freed from the limitations and constraints of the museum that has been highlighted before, a true interaction and reflection can arise in the viewer. This is achieved by creating a speculative museum of no fixed location or mediation. The speculative museum consists of a service distributing paintings to people to be hung for six months in their apartment until they are swapped with different works. The artworks are from expropriated museums and their vast storages of hidden artworks they consist of. Museums are displaying only a small fraction of artworks from their permanent collection on public display. For example, *The Louvre* is displaying only 8% of its permanent collection publicly, *Berlinische Galerie* 2%, and the *Solomon R. Guggenheim Museum* 3%.<sup>63</sup> This service would then arguably not harm the museums but rather consequently achieve the mission museums often claim for themselves. To bring the artworks to the people.

The paintings are safely stored in safe boxes with a glass front and are delivered with other items to create and mediate a possible viewing and reflection. The safe boxes would ensure the safety of the artworks from people as well as from an environment damaging the works by being built to the standards of art preservation (fig. 15).

This post-museum would need to define a new name for itself as it is not related to the museum anymore and does not share its etymological reasoning. For a new name latin is implemented to evoke an association to the existing museum.<sup>64</sup> As basis of the new name the word *videō* (seeing, observing) is chosen creating *Vidēntium* (of those who look / of spectators).

This speculative approach deals with the question of creating a new interaction with paintings by changing what art means for us. It would not be a “palace of exhibit” anymore we visit but a part of our lives that comes to us. Through this, we spend a long time with the works and see them in the different light settings of the days or the seasons. In different moods and with different attention levels. By the works becoming part of our daily lives we assign the art a new value that is not connected to the ritualistic value systems highlighted earlier. We re-learn the value of art as possibly ownership of art becomes abstract, specifically a value-based system that orientates itself at a market value.

Visual culture overall would be redefined, though the museum as a defining institution creating our culture would be met with an alternative creating a visual culture of the many artworks, artists, cultures, and narratives. This design approach is, therefore, a holistic speculation, a short glimpse into a possible future raising questions related to the artifact and its concept. The valid questions viewers have are important but contradictorily only directed to an alternative concept and not to

63 Kimberly Bradley, “Why Museums Hide Masterpieces Away,” BBC Culture, BBC, accessed May 3, 2022, <https://www.bbc.com/culture/article/20150123-7-masterpieces-you-cant-see>.

64 This eurocentric approach is chosen as the concept is thought of as an alternative to the existing museums in Europe. For a global concept different methods of collecting artworks need to be discussed as well as post-colonial approaches.

the existing structures. *Vidēntium* hopes to create a moment of critical reflection on exhibiting practices, collection methods, and the overall question: what would one possible alternative to the power of representing and defining the visual culture by the museum be?

The concept moves the interaction in the museum from a mediated and ritualized experience to the interaction in the private. This leads to fundamental changes in behavior as we are in a space of comfort self-created and arranged. The interaction with the painting at home varies from the interaction in the museum space in these key areas:

Interaction Museum	Interaction Home
Multiple paintings, contextualizing each other	One painting
Mediated experience	Lived experience
Historicization	According to one own political agenda
Time limit through the amount of artworks	Unlimited interaction at self-assigned times
Learned behavior	Private behavior
Ritualized	Possibility for new rituals

The system of the *Vidēntium* completes this interaction by sending an additional invitation for activity with the artworks. A possible main component accompanying the painting is the *Vidēntium* record a book containing basic information regarding the artwork and its history. In this book, each household receiving the paintings has the chance to share personal histories lived while sharing a part of their life with this painting. Through questions participants are introduced to reflect on the painting and their lives lived with it by evolving personal emotions in shared archives.

Additionally, a calendar for the duration of the loan is sent formulating small challenges and events such as drawing group dates and creating social engagement with other households. Further information about the painting is shared to create a learning experience throughout the time of the loan. A notion important to the *Vidēntium*, the painting rather than being changing decoration should become a part of life for the period spent with it. This can be achieved through the connection of hobbies to the artwork in the form of:

Music	Playlist
Gardening	Seasonal and painting specific
Cooking	Recipes relating to painting mood or displayed objects
Yoga	Exercise and Workout routines
Fitness	Exercise and Workout routines
Theater	Play recommendation
Literature	Book recommendation
Further art exhibition	Recommendation for the next six months
Film	Film recommendation
Bird watching	Birds displayed in painting or related to mood

This could be in part mediated and curated, as well as a community-based recommendation system. Painting specific forums could allow for recommendations only accessible to former receiver of the painting. Through this interweaving of personal interest possible new connections can be created to the painting. As the viewer is invited to consume other media with the background of doing so because of the painting, a comparison occurs creating a deeper reflection with both media. A playlist can invite the viewer to reminisce while listening to music why and how chosen music is related to the painting. Through this, a deeper relationship with both media is formed. The variety of hobbies enables this reflection for as many people as possible and creates a new ritualized experience. The concept of the *Vidēntium* relates the proposed interaction to varies different levels of human attention and accompanies them by placing the painting in our living space. To create an experience over the course of six months additional material is sent creating a bond in a community as well as challenges for the viewer to continuously spark interest.

# Conclusion

In this thesis, a design inquiry is conducted investigating the museum space and its socio-political power. Through the *Background Research*, the design objectives of the nineteenth-century museum become apparent. The history of exhibiting in the public museum is discussed reviewing the reasons for the development of its exhibition concept, nevertheless the foundation of many museums today.

In *The Museum as a Ritual Space* it is debated how this design concept of exhibiting art has formed our understanding of art viewing, and fundamental questions about what constitutes our visual cultures and our relation to them. A discussion that leads into the concept of the theorized post-museum defining in *The Post-Museum* necessary steps to create an art exhibiting suitable for our diverse societies.

This research body informs an iterative design process defining with each loop a possible change to our relationship with art and its exhibiting. Research is conducted with each iteration expanding the practical and theoretical foundation of the design process. Through this development the design objective for each iteration was adapted to the continuously further defined question.

In *Iteration 1* a possible interaction is searched in the paintings leading to the Conceptual Metaphor Theory as a ground for a physical engagement with the painting in a familiar manner. *Iteration 2* builds on the idea of creating a different perception of the painting through interaction by investigating how the activity of drawing can connect to a more thorough seeing. A method linked to slow design leading to *Iteration 3* conceptualizing a light-based discovery of the painting. The fourth and final iteration revisits the previous design loops and recognizes an inadequate approach to the substantial design question. As previous design iterations were concerned with changing the viewers relation to art through altering the perception of a painting, the final approach is aiming to change the artworks relation to the viewer by creating a speculative public ownership service. The speculative design proposing a possible post-museum is in its proposition bold and rethinking infrastructures together with the social condition created by them. The artifact of the *Vidēntium* questions the museums authority and our relationship to it by presenting an alternative to the museum that can be considered a post-museum. This proposition is based on the discovered limitations of a design aiming to change our visual culture within the existing structures of the museum. Therefore, the methodology of speculation is used to imagine a possible other structure of lived visual culture and with it a different format of exhibiting. The speculation of the *Vidēntium* considers the social environment arising through its concept and the implications occurring if realized. Moreover, it is designed to create social implications as only through a process of relearning, reevaluating, and restructuring the existing museum, a change in the arts position in our culture can be achieved. This is accomplished by speculating a public ownership, reevaluating art and its inherent ties to an art market value. As well as dismantling learned behaviors imposed by the museum space by situating the art works in our lives generating a new learned behavior

and interaction with the artworks. Furthermore, from this newly defined viewing and living art, a new idea of the post-museum can emerge as we unlearn and redefine our visual culture.

The speculative approach can be meaningful in communicating these issues but is limited to the viewer and their knowledge. While the artifact is designed to communicate the complexity of this project, one possible shortcoming could reveal itself in the complexity of the critique of the museum. The artifact can evoke and raise discussed questions but requires the viewer to take a critical stance to the museum and understand the reasoning of the communicated critique. If the critique is coherent the artifact can serve as a meaningful addition to discourses of museology and culture studies by providing a prototype and rendering of theory. To test the prototype and, therefore, the theory would be an adequate step to assess the feasibility of the concept, although desired changes will not occur within a short period of time. The artifact understands itself as a starting point for discussions to advance the public understanding of issues raised as well as its discourse. While a realization of the project would be a resourceful experiment, a public discussion and design process would need to forego its concept to ensure an outcome of generality and applicability for all people. This process would create a concept of plurality and will be truly democratic in its core. The concept of the *Vidēntium* could be elaborated, improved, and, at the end of such a process, change the preexisting notions of our visual culture.



# Figures



Figure 1



Figure 2

*Light under head of Maria*



*Light to the left side of the hed of Maria*



Figure 3



Figure 4

*Woman figure positioned in the front*



*Man figure positioned in the front*



*Tree figure positioned in the front*



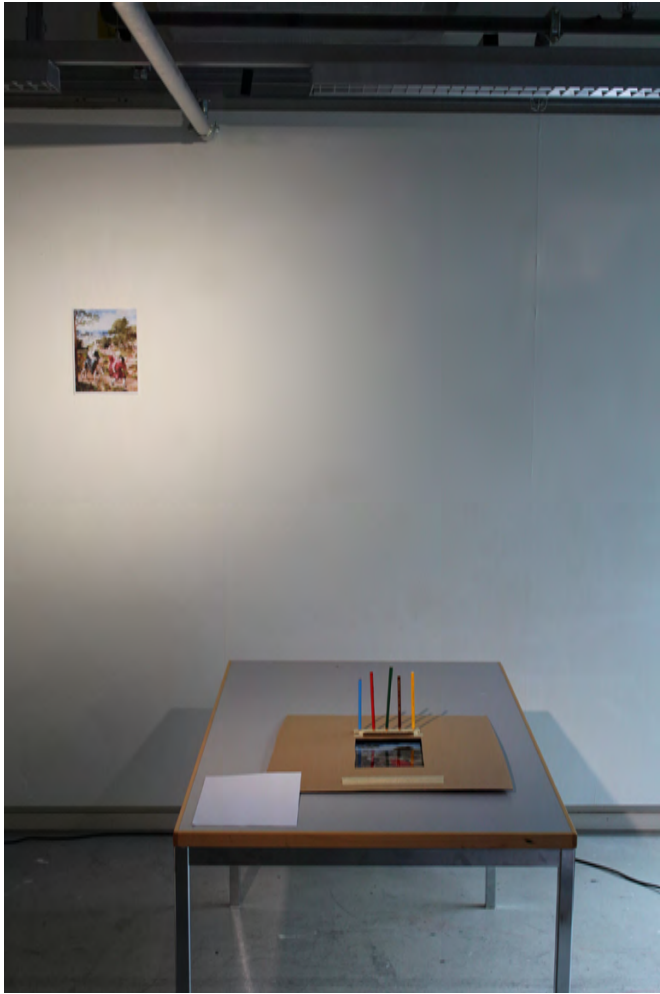


Figure 5



Figure 6



Figure 7



Figure 8



Figure 9





Figure 10



Figure 10.1



Figure 11



Figure 11.1

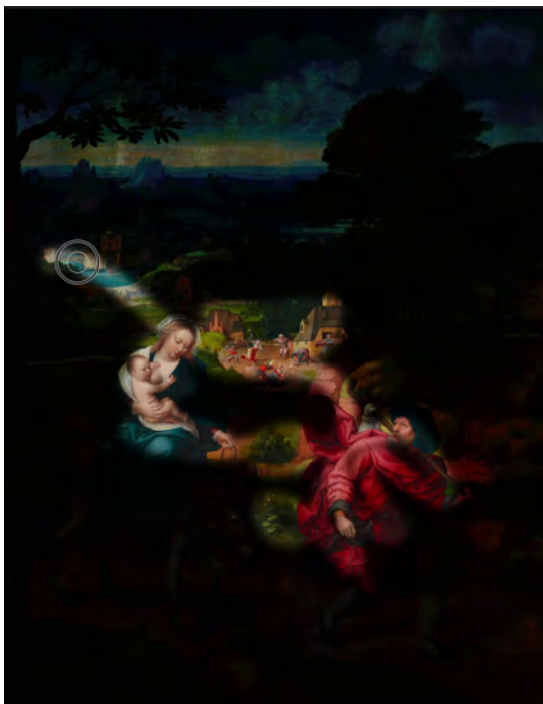
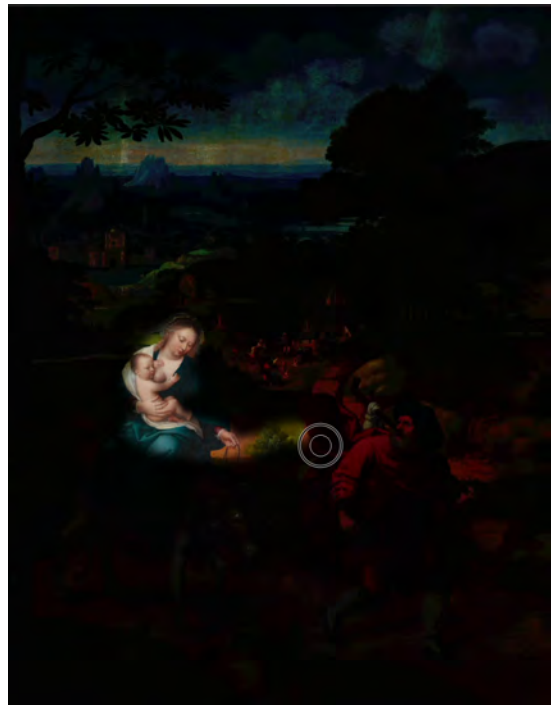


Figure 12





Figure 13

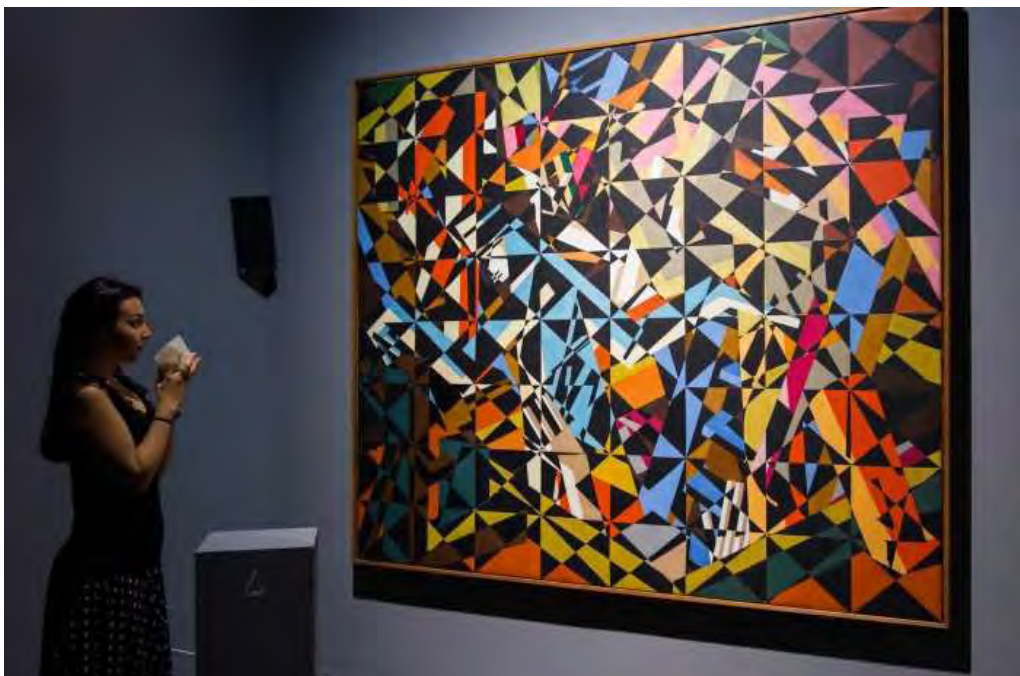


Figure 14

65 "Full-Body Interaction Lab (Fubintlab)," Refugi 307 - Full-Body Interaction Lab (FubIntLab) (UPF), Universitat Pompeu Fabra Barcelona, accessed May 2, 2022, <https://www.upf.edu/web/fubintlab/refugi-307>.

66 Tate, "IK Prize 2015: Tate Sensorium," Tate, accessed May 2, 2022, <https://www.tate.org.uk/whats-on/tate-britain/ik-prize-2015-tate-sensorium>.

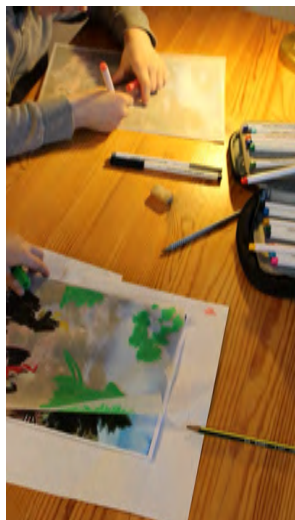
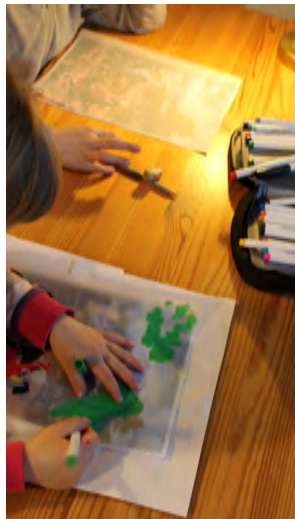
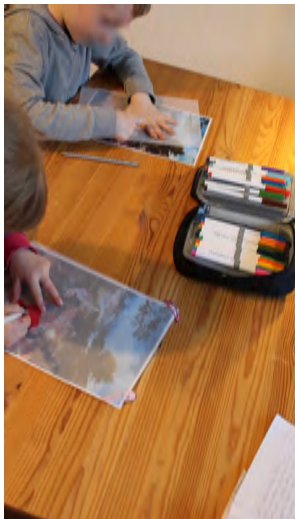
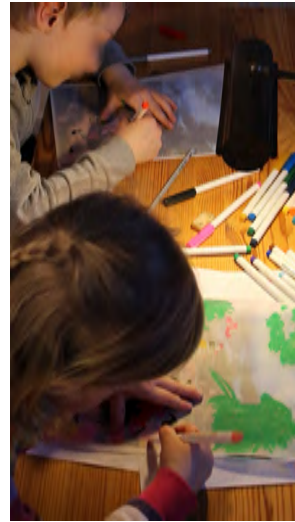
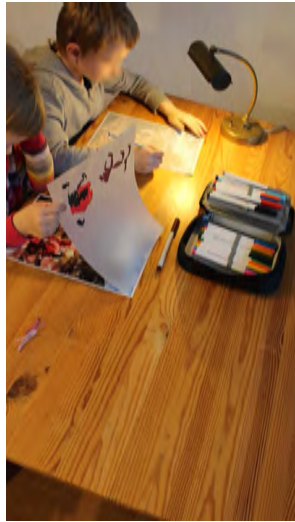


Figure 15





# Appendix



## Workshop:

Transparent paper on color print

Task: Reproduce painting on transparent paper

Participants: 7 years, 5 years

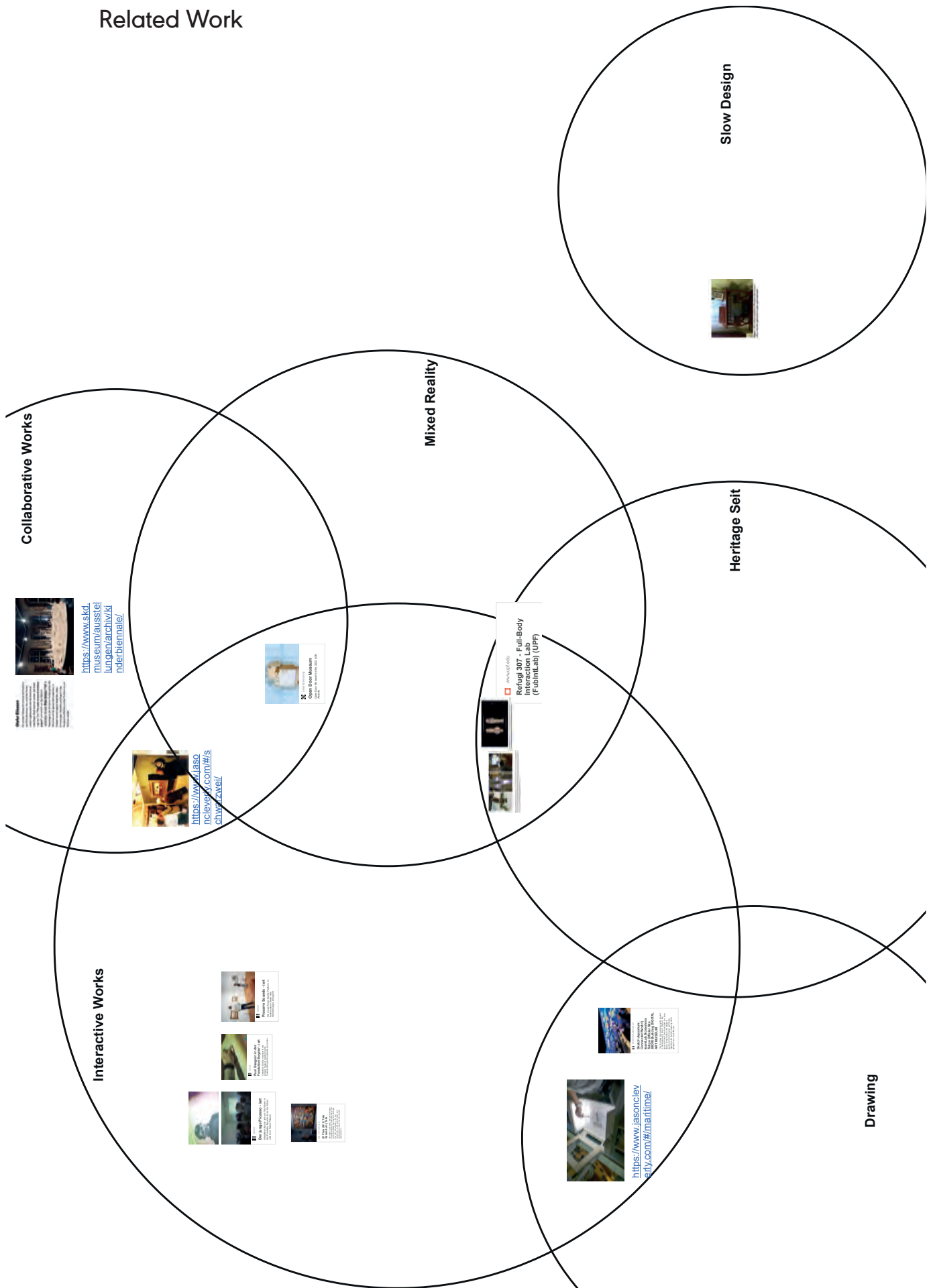
Duration: 30 min

# Literature Overview

Title	Tags	Summary / Main Points	Quotes
Vom Lehn, Dirk, Christian Heath, and Jon Hindmarsh. "Exhibiting interaction: Conduct and collaboration in museums and galleries." <i>Symbolic interaction</i> 24, no. 2 (2001): 189-216.	interactional sociology, visitor studies	This article presents an analysis visitor behavior in museums and galleries. It is attempted to reveal how visitors actively create the contexts in which they experience particular exhibits. Influences on the visitors can be characterised as: physical environment, contextualization through previously seen exhibits, actions of others (emerging interaction/ social interaction)	"Museums and galleries provide a natural laboratory in which to examine conduct and interaction with and around objects and artifacts and to consider how mundane competence and practice is brought to bear in making sense of specialized exhibits and technical Conduct and Collaboration in Museums and Galleries 209 information. Museums provide an opportunity to explore how the 'affordances' and experience of objects and artifacts emerge within and are constituted through interaction, interaction that inextricably relies on a social organization which informs the very ways in which things are seen and experienced." p.208-209
Basballe, Ditte Amund, and Kim Halskov. "Projections on museum exhibits: engaging visitors in the museum setting." In <i>Proceedings of the 22nd Conference of the Computer-Human Interaction Special Interest Group of Australia on Computer-Human Interaction</i> , pp. 80-87. 2010.	Interaction design, augmented reality, engagement, cultural heritage, projection	Through bringing the exhibit to life via projection a room for being together in a dialogue about an exhibit is created. By "engaging conversation" a "person-to-person interaction is created (adults explaining to children primarily). 3 Modes of visitor engagement have been analyzed: sense-making, engaging conversations, and playful engagement.	
Schaper, Marie-Monique, Maria Santos, Laura Malinverri, Juan Zerbini Berro, and Narcis Pares. "Learning about the past through situatedness, embodied exploration and digital augmentation of cultural heritage sites." <i>International Journal of Human-Computer Studies</i> 114 (2018): 36-50.	World-as- Support interaction, augmented reality, cultural heritage site	"Educational experience. Using digital augmentations in the shelter proved to enhance the children's understanding of the historical context in several aspects. In general, the children stated that the projected pic- tures helped them imagine certain artefacts and situations in the past. [...] Furthermore, the results indicated that activities based on embodied exploration triggered the children's reflections on underlying values in relation to the historical context." p.45	
Ioannidis, Petros. "Designing for Play and Appropriation in Museum Experiences involving Tangible Interactions and Digital Technologies." In <i>Extended Abstracts of the 2020 Annual Symposium on Computer-Human Interaction in Play</i> , pp. 15-17. 2020.	appropriation; tangible interactions; sensory museology	Short discussion on museums (etc) shifting their focus to enabling experiences, from passive to active learning in the larger context of Pine and Gilmore's (2011) experience economy. The concepts of participation are all present in the activity of play. "Play as a mode of being in the museum space is characterised by appropriation and ambiguity" p.15 Ambiguity provides the user with means of creating own solutions, thus giving them control over the system. Therefore designing is daunting as it is partly unpredictably. - "Redirections "Design-after-design" Imaginative Stories (Fantastic stories and Realistic stories) Self-Reflective Stories	
Bruder, Kurt A., and Ozum Uçok. "Interactive art interpretation: How viewers make sense of paintings in conversation." <i>Symbolic interaction</i> 23, no. 4 (2000): 337-358.	interactional sociology, visitor studies, sense-making, Aesthetic interaction	Two organising principles that influence the interaction Narration (.Viewers treat paintings as omnibus conversation pieces around which may be organized an indeterminate number and variety of stories whereby they come to terms with the world and themselves as characters in it." p.354) Refication (the act of treating something abstract, such as an idea, relation, system, quality, etc., as if it were a concrete object)	
Grosse-Herig, Barbara, Jon Mason, Dmityr Alakseyeu, Conny Bakker, and Pieter Desmet. "Slow design for meaningful interactions." In <i>Proceedings of the SIGCHI Conference on Human Factors in Computing Systems</i> , pp. 3431-3440. 2013.	Slow Desin, Product Design, Product Attachment	The paper examines how "Slow Design" can be applied in the context of mass produced items. Additional to the 6 slow design principles in Carolyn F. Strauss and Alastair Fuad-Luke published paper "The Slow Design Principles" they propose "rituals" as a seventh. The principles are the revised by product designers for product designers.	
Bakker, Saskia, and Karin Niemantsverdriet. "The interaction-attention continuum: Considering various levels of human attention in interaction design." <i>International Journal of Design</i> 10, no. 2 (2016): 1-14.	Divided Attention, Calm Technology, Ubiquitous Computing	In this paper interaction is designed for various levels of attention. The argument is made, that interaction design has focused on the two extremes of attention (focused interaction or implicit interaction). The process of dividing mental resources over various activities is considered to create an Interaction-Attention Continuum.	
Huang, Hai, Wei Hong Lo, Kher Hui Ng, Timothy Brailford, and Claire O'Malley. "Enhancing reflective learning experiences in museums through interactive installations." <i>International Society of the Learning Sciences, Inc. [ISLS]</i> , 2018.	cultural learning, reflection, interactive installations,	The paper analyzed how through three interactive installations a rich intergenerational cultural learning experience was created, embedded in the original museum setting.	
Strauss, Carolyn F., and Alastair Fuad-Luke. "The slow design principles: A new interrogative and reflexive tool for design research and practice." <i>Changing the change</i> . Torino (2008).	slow desing, design theory	Slow Design "values" (principels) are defined and discussed.	
Odum, William T., Abigail J. Sellen, Richard Banks, David S. Kirk, Tim Regan, Mark Selby, Jodi L. Forzini, and John Zimmerman. "Designing for slowness, anticipation and re-visitatoin: a long term field study of the photobox." In <i>Proceedings of the SIGCHI Conference on Human Factors in Computing Systems</i> , pp. 1961-1970. 2014.	Slow Technology, Interaction Design: Design	in this field study an interesting change in attitude around slow technology is revealed, from frustration to appreciation. A process is initiated from the digital to the analog through slow technology. Through the slowness and a randomized process anticipation is designed. Through the materialy presence of photographs a re-visit is supported.	
Marshall, Mark T., Nick Dulake, Luigina Cioffi, Daniele Duranti, Hub Kockelkorn, and Daniela Petrelli. "Using tangible smart replicas as controls for an interactive museum exhibition." In <i>Proceedings of the TEI16: Tenth International Conference on Tangible, Embedded, and Embodied Interaction</i> , pp. 159-167. 2016.	Tangible interaction; smart replicas; museums;	Through a number of co-design sessions "smart replicas" are created (hu) that could be used to interact with a display case. "The exhibition was designed so that the replicas provided an additional layer of story on top of the factual information presented on the text labels in the exhibition." p. 164 Each replica narrated one perspective. Visitor engagement was not as active as expected, museum staff had to inform about interactive part to increase.	artefacts (e.g., a painting, sculpture, historic space, etc.), but in terms of how they shape the experience of the wider context (e.g., a sequence of exhibits and the interrelations among them), and of the presence of others (e.g., companions, co-visitors, or other people who happen to be in the same space). Physical co-location is still key to engender and support social interaction: not only in terms of people being able to talk to or be close to companions, but also to be aware of others' physical proximity and presence in planning and practicing one's next moves, and spacing, pacing, and peripheral interaction in the exhibition space (Heath et al. 2002; Hornecker 2010, 2016). p.69
Cioffi, Luigina. "Hybrid interactions in museums: Why materiality still matters." <i>VIRTUAL HERITAGE</i> (2021): 67.	Design theory, hybrid interactivity	The paper argues for materiality as a key component in hybrid interactivity. Four broad approaches to designing hybrid interactivity are identified: virtual-physical overlay; hybrid objects; virtual-physical assembly; and hybrid takeaways. "While virtual heritage applications can enable experiences that would not be possible otherwise (such as the exploration of reconstructed sites and objects that are lost or not easily accessed), the risk is that some of the material aspects of heritage are too readily erased or excluded from the design process." p.68	
Noi, Elena, Dario Cavada, Stefano Maule, Anna Pirelli, and Adriano Venturini. "Digital augmentation of historical objects through tangible interaction." <i>Journal on Computing and Cultural Heritage (JOCCH)</i> 12, no. 3 (2019): 1-19.	Digitally augmented objects, internet of things, tangible and embodied interaction, museum experience	In this study a "normally forbidden interaction" is examined. An interactive pinth is designed for an "phisical-digital object experience". IoT objects can be used to activate a narration. A user study is conducted and revealed usability problems related to wording and a menu architecture that could be misunderstood. In the objective of creating a "first exploratory phase focused on the physical objects and a second phase where digital information completes the cognitive experience" p.15 the installation was successful. Social interaction was created as members of groups explored the installation together.	

Micoli, Laura Loredana, Glandomenico Caruso, and Gabriele Gudi. "Design of digital interaction for complex museum collections." <i>Multimodal Technologies and Interaction</i> 4, no. 2 (2020): 31.	digital heritage; intangible heritage; virtual museum	In this paper the question of complexity of collections ("defined as a collection of cultural heritage pieces linked each other through intangible cultural heritage (ICH) elements, not exhibited in the museum for their intrinsic immaterial nature." p.16) is raised and how a digital interaction is to be positioned in this context to prepare for a visit. An digital map concerning funeral ritual of ancient Egypt is created. "The methodology tested in this article explores this concept of virtual preparation for the physical visit. It lets the visitor better understand the collection they are about to visit, also entering in an emotional relationship with the pieces on display." p.17	
Nofal, Eslam, Rabee M. Reffat, Vanessa Boschloos, Hendrik Hameeuw, and Andrew Vande Moere. "The role of tangible interaction to communicate tacit knowledge of built heritage." <i>Heritage</i> 1, no. 2 (2018): 414-436.	TUI, cultural heritage site	The study hypothesis of this paper is "that tacit historical knowledge can be effectively communicated via tangible forms of interaction, which will lead to more collaborative forms of interaction and more profound recall of tacit heritage qualities by general museum visitors"p.419 this was achieved by creating interactive navigation option corresponding with a dynamic representation.	Our built heritage forms a unique asset, as it expresses the richness and diversity of our common past. Heritage sites and monuments should therefore not be interpreted just as physical constructions, but as tangible artefacts that represent meanings and values that might even change over time. We therefore consider how the built heritage can be interpreted as a communication process [1], in which the different types of values and meanings can be perceived, understood and appreciated by a wide range of visitors. p.614
Norman, Donald A. "Affordance, conventions, and design." <i>Interactions</i> 6, no. 3 (1999): 38-43.			In graphical, screen-based interfaces, the designer primarily can control only perceived affordances. The computer system already comes with built-in physical affordances. The computer, with its keyboard, display screen, pointing device, and selection buttons (e.g., mouse buttons) affords pointing, touching, looking, and clicking on every pixel of the screen.p.39
Fleck, Rowanne, and Geraldine Fitzpatrick. "Reflecting on reflection: framing a design landscape." In <i>Proceedings of the 22nd Conference of the Computer-Human Interaction Special Interest Group of Australia on Computer-Human Interaction</i> , pp. 216-223. 2010.	Design theory, reflection.	R2 Alternative Perspective -> e.g. detect and represent data or aspects of experiences not otherwise available to human perception  R3&R4 challenging of original assumptions or interpretations of data as reflectors question and consider alternative explanations and hypotheses. Internal process the role of technology is in supporting the foundation resources and processes of reflection  Questions for future designers are defined.	
Halinäs, Lars, and Johan Redström. "Slow technology—designing for reflection." <i>Personal and ubiquitous computing</i> 5, no. 3 (2001): 201-212.			
Dunne, Anthony, and Fiona Raby. <i>Speculative everything: design, fiction, and social dreaming</i> . MIT press, 2013.	Design theory, speculative design	Design as a tool to produce ideas is introduced and discussed. Imagining possible futures as means to open a discourses is proposed.	
Berger, John, ed. <i>Ways of Seeing</i> . London, Harmondsworth: British Broadcasting Corporation; Penguin, 1972.	Art history.	Chapter 1 discusses questions of originality of paintings in the age of reproduction and its affect on our seeing. Paintings and their sociological meaning in our society is compared to the age of their creation. What we experience while seeing a painting is contextualized and situated.	

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# Imprint

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Otto Horst Kolleß

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© Otto Kolleß, Zurich University of the Arts, Department Design, Interaction Design

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