

Designing for Aesthetic Experience

CHRISTIAN SIVERTSEN, IT University of Copenhagen, Denmark

Digital ways of representing fine art are significantly changing the way art is put on display. New exhibition formats including digital projections of fine art allow us to rethink how we can use technology to create art experiences. However, replicating the existing relationships between art, meta-text and visitor might not be the right way. In this project, I explore new ways of creating technologically enabled experiences with fine art paintings based on John Dewey's concepts of aesthetic experience and expression. Utilizing a constructive design research approach, I create concrete prototypes and designs that expand research on aesthetics of interaction to propose new ways for museums to create art experiences.

CCS Concepts: • **Human-centered computing** → **Interaction design theory, concepts and paradigms**; • **Applied computing** → **Fine arts**.

Additional Key Words and Phrases: art experience, aesthetics of interaction, expression

ACM Reference Format:

Christian Sivertsen. 2021. Designing for Aesthetic Experience. In *Creativity and Cognition (C&C '21)*, June 22–23, 2021, Virtual Event, Italy. ACM, New York, NY, USA, 7 pages. <https://doi.org/10.1145/3450741.3467469>

1 INTRODUCTION

Digital ways of representing fine art are significantly changing the way art is put on display. The white cube paradigm employed by fine art museums and galleries worldwide seems to be the default way of putting art on display, however, challenged by critique pointing at its ritualistic nature, which severely limits the way art can be experienced [5].

This critique applies best to exhibitions of traditional art forms like painting and sculptures. Indeed, many new media artworks are in themselves challenging the way we engage with art, through interactivity, bodily movement, over distance, or through engagement over time. Many other art forms are similarly engaged in expanding how we think about and engage with art. However, a particular overlap between the new media art world and museology has been emerging.

Examples of this are seen in the emergence of immersive art experiences, like those of Grande Experiences “Van Gogh Alive”¹, Van Gogh Museum “Meet Vincent”², the Lumiere venues from Culturespaces showing Klimt, Van Gogh, Dalí, Gaudí and others³. These immersive fine art experiences are mirrored in art venues like Artechouse⁴, Nxt Museum⁵, Wonderspaces⁶ and Superblue⁷ that are especially suited for presenting artworks that are native to the immersive exhibition format. Such experiences have shown to be very commercially successful [12].

¹<https://grande-experiences.com/van-gogh-alive/>

²<https://meetvincent.com/>

³<https://www.culturespaces.com/>

⁴<https://www.artechouse.com/>

⁵<https://nxtmuseum.com/>

⁶<https://www.wonderspaces.com/>

⁷<https://www.superblue.com/>

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Manuscript submitted to ACM

53 However, this is not the first time immersive media experiences have been employed in the art museum setting.
54 Earlier examples aim, for example, to give the visitors access to collection databases, send them on a virtual tour, give
55 them access to historical artworks that are not physically available, or provide annotations to the artworks.

56 The immersive exhibitions are a step away from this, and towards more visceral experiences of the art, through the
57 sheer size of the presentation, the added soundscapes, and added animations. Nevertheless, these experiences highlight
58 the opportunities of using digital technologies to challenge the white cube paradigm, its rigid ritualistic space, its
59 restraint on the body, and its insistence on the “right way” of viewing art. The multi-modal and encapsulating space of
60 these experiences creates a wide design space for museums, where space, senses, body, artworks, and sociality all are
61 malleable. But it begs the question, whether simply enlarging artworks and adding music is the best way we can use
62 technology to create new art experiences around paintings.

63 Art museums exist to conserve and preserve our art-historical legacy, as well as putting it on display for contemporary
64 and future populations to experience it, learn about it, and be touched by it. However, when showing digital reproductions,
65 how is that anything but a cheap version of showing the original artworks? The commercial art experiences seem to be
66 made more for the spectacle itself, rather than the artworks. In contrast, the “Meet Vincent” experience produced by the
67 Van Gogh Museum in Amsterdam, seems to focus on contextualizing the images on display, through supplementary
68 exhibits with biographical material. However, the role of the paintings themselves, being large centerpieces of the
69 experiences, is not all that different from what you expect from a regular museum experience, except that the original
70 material qualities are removed, but to some extent replaced by a detailed view achieved through the sheer size of the
71 projections.

72 Given the possibilities that the medium grants us, I believe it is necessary to reconsider the role the artwork is given
73 in the experience. Instead of simply reproducing the regular museum’s relationship between artwork, space, meta-text,
74 and audience with digital reproductions we should use the potential of the medium to present some of the knowledge
75 in a way that acknowledges research done on aesthetics in the interaction with technology.

76 “The needs of daily life have given superior practical importance to one mode of communication, that of speech.
77 This fact has unfortunately given rise to a popular impression that the meanings expressed in architecture, sculpture,
78 painting, and music can be translated into words with little if any loss.” According to Dewey [4, p. 106], this might even
79 be a necessity if we want to communicate certain aspects of art.

80 Any interaction with digital products has an experiential and aesthetic aspect [6, 10]. However, what if this experience
81 was not just the secondary result of using a product to achieve a certain functionality? What if the experience of
82 interaction could carry the meaning in itself?

83 This project is co-financed by the Munch Museum in Oslo, Norway, and will therefore use the art of Edvard Munch
84 as a case for these explorations.

85 This leads to the following research question: How can we create technology-based designs that allow the museum
86 visitors to have an aesthetic experience thematically related to Edvard Munch’s work?

87 Related to this question are two broader questions each creating a trajectory in two different domains. Museology:
88 What is the role of original artworks in creating art experiences? HCI: How can we use technology to design experiences
89 that are expressive, and carry particular meaning?

100 2 THEORETICAL BACKGROUND

101 John Dewey’s “Art as Experience” from 1934 has had a wide influence on the HCI community. While originally written
102 about art, Dewey’s view of experience as inherently situated and embodied has been applied successfully to encounters
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105 with technology as well [10]. For an extensive review see [1]. According to Dewey experience is constructed in a
106 continuous doing-undergoing between one's own body and the environment [4]. This also implicates both body and
107 environment in the experience of artworks. The environment is both regarded as a physical and social space and
108 the body as both mental and physical states as well as integrating previous experience. Therefore, the experience of
109 artworks happens in the same realm as that of everyday experience. Something that distinguishes the art experience
110 from the everyday experience is whether you have *an* aesthetic experience. According to Dewey, "[...] we have *an*
111 experience when the material experienced runs its course to fulfillment" [4, p. 35, emphasis in original]. Dewey argues
112 that *an* experience can be had both intellectually and through practical action. He argues that between the poles of
113 aimlessness and mechanical efficiency you find "courses of action in which through successive deeds there runs a
114 sense of growing meaning conserved and accumulating toward an end that is felt as accomplishment of a process." [4,
115 p. 39]. Dewey argues that having an intellectual experience has aesthetic quality, but it differs from distinctly aesthetic
116 experiences, which is that of art. "In an intellectual experience, the conclusion has value on its own account. It can be
117 extracted as a formula or as a 'truth,' and can be used in its independent entirety as factor and guide in other inquiries.
118 In a work of art there is no such single self-sufficient deposit. The end, the terminus, is significant not by itself but as
119 the integration of the parts. It has no other existence." [4, p. 55].

120 This project aims to develop a methodology for evoking *an* experience in the visitor, not just one of aesthetic quality,
121 but a distinctly aesthetic experience. This is according to Dewey achieved by the artist through expression that in turn
122 creates an expressive object. However, this project challenges Dewey's reservation of aesthetic experience for art, and
123 explores how we, through design, might create similarly expressive objects, and can be used as a design tool as well to
124 evoke an emotional response.

125 Some of the qualities Dewey relates to artworks, may indeed be reserved for works that are the results, of artistic
126 expression, but the most important quality for this project is that of communication, "Because the objects of art
127 are expressive, they communicate. I do not say that communication to others is the intent of an artist. But it is the
128 consequence of his work – which indeed lives only in communication when it operates in the experience of others. If
129 the artist desires to communicate a *special* message, he thereby tends to limit the expressiveness of his work to others –
130 whether he wishes to communicate a moral lesson or a sense of his own cleverness" [4, p. 104].

131 In this project, the intent is indeed communication, and whether expressiveness will need to be limited remains to
132 be seen. Dewey discerns between *statements*, which is what sciences normally does by pointing to that which leads
133 to an experience, and on the other hand, *expressions* which constitutes experience. The project will explore how the
134 tools of the artist, can be used, not to express ourselves, but to make expressive technology, that evoke an emotional
135 response, in the image of research made on Edvard Munch's work. Using expressive technological designs alongside
136 the art, we can create other experiences that highlight or mirror certain qualities of the original artworks, and that have
137 the potential to evoke aesthetics experiences in the visitors.

138 In HCI the idea of aesthetics is tightly coupled to the concept of *interaction gestalt* [9] and pragmatist *interaction*
139 *aesthetics* [11]. Namely that the interactive relationship between human and technological system, has an aesthetic
140 in itself. The interaction can be understood through its attributes which in turn are responsible for the experiential
141 qualities of the interaction [8]. However also the performance of the interaction is part of shaping the social aspect of
142 the experience, as the user of a given system takes the role of both operator, performer, spectator [3].

143 The insights that the research above presents into the aesthetic qualities of interactions with technological systems
144 will be the foundation of the designs made in this project. By designing interaction attributes and visitor performance
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157 as well as visual and sound aesthetics it is possible to create installations that let the visitors experience qualities in
158 interaction that are related to the world of Edvard Munch, rather than merely indicating them through statements.
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160 3 METHOD

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162 In this project, I employ a *constructive design research methodology* [7]. Construction means designing and creating
163 concrete objects and installations. This is a future-oriented exercise, aiming to propose and investigate how particular
164 prototypes and designs open up for new kinds of experiences.
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166 Part of the project is done in the *field*, part in the *lab*. The first part of this project has been a lab experiment about
167 the role the material (physical or digital) of paintings plays in the art experience. The current part, where I am stationed
168 at the Munch Museum, naturally makes use of this context, to create design experiments that can be evaluated within
169 the museum context.
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171 Overall the project can be seen in light of what Stolterman & Wiberg calls *concept-driven interaction design research*
172 [13]. The aim is not necessarily to create a design best fit to meet a particular demand, but more importantly one that
173 challenges existing practices to investigate what happens when we go new ways. The main aim is to challenge theory
174 and gain new theoretical perspectives through practical experimentation. However, that does not necessarily mean that
175 the designs cannot be useful in their own right.
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177 The shifting context allows for asking different kinds of questions. Experiments embedded in the museum context
178 allow for investigating the sense-making of the designs in context, however in a complex social setting where experiential
179 factors might be more difficult to single out. The controlled environment of a laboratory experiment, on the other
180 hand, allows for diving deep into a particular aspect of the aesthetic experience, like the influence of the material
181 manifestation on the art experience. These design experiments will be supplemented by a few more analytical studies
182 of related projects, to bring my own projects into perspective.
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184 In all cases, the goals are explorative, in an attempt to expand on existing theory about human-computer interaction,
185 experience, and art.
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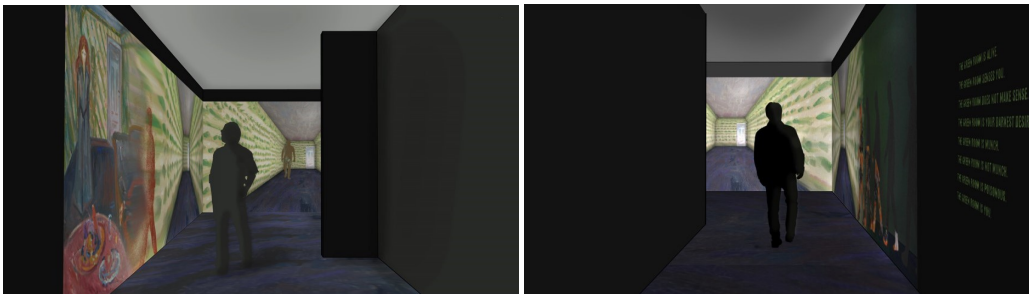
187 4 PROGRESS

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189 Since the Ph.D. project started in October 2020, I have conducted an experiment that explores the experience of paintings
190 as they are represented in a physical condition, in a digital 2D condition, and a digital 3D condition, respectively. This
191 experiment was created early on, to investigate how the representation of paintings in digital media alters the art
192 experience.
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194 One of the most important findings is how the affordances of the manifestations place the painting in different roles
195 that modulate the social role and cultural value of the painting. The different material conditions of the paintings alter
196 the availability of information about certain aspects of the painting, such as size and weight, as well as the affordances
197 for interaction with the paintings. A particular interaction aesthetic emerges from these affordances, which is part of
198 casting the painting in a role in a more complex social and performative sense. In the end, this has effects such and
199 shaping the expectation of value or shifting the focus between the experience of interaction and the pictorial qualities
200 of the artworks. The results from this experiment are currently being written as a paper. At the time of writing this
201 paper, I have two ongoing projects.
202

203 Together with the Munch Museum, I am developing a museum experience that lets the visitor immerse themselves
204 in a multi-modal installation, that reflects topics from a Ph.D. project done on a particular series of Edvard Munch's
205 paintings, known as "The Green Room". In this research, the expressivity and the relation between the paintings are
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209 presented through themes such as instability, avatars, and poisonous feelings. The aim of this installation is to use
 210 expressivity to evoke an experience in the visitor related to those themes, and in that way, letting the visitor tacitly
 211 learn about Munch's work. The concrete design is a 40 sqm room in the new Munch Museum, due to open in autumn
 212 2021. Upon entering the room, the visitor realizes the dim lightning and unsettling music playing in the background.
 213 On the wall next to the entrance a poem sets the scene, by replacing the introductory text of the other exhibitions in the
 214 building, with a set of puzzling statements. As the visitor moves further into the room, a (video) mirror image appears
 215 next to them on the wall, gradually transforming into a painted silhouette. The silhouette follows the visitor into the
 216 adjoining space, where the walls are covered from floor to ceiling by projections in a traditional CAVE format. On each
 217 of three walls, a room painted in the style of Edvard Munch is projected, and the visitor's painted silhouette appears in
 218 each of them. The rooms are unstable, slightly changing in size, color, and texture, and as the visitors move around
 219 the space, they are tracked by depth cameras and the silhouettes follow and merge and break with the silhouettes of
 220 other visitors in the room. In the wall where the visitor entered, a small hallway leads away. As the visitor enters their
 221 silhouette dissolves and they step in front of a projection of an Edvard Munch painting. The painting is of a room
 222 similar to the three projections, but it is inhabited by a female figure standing next to the corpse of a man, who lies
 223 bleeding on a sofa. By the end of the small hallway, a short text and a series of images let the visitors know that the
 224 paintings and the projected rooms are related to a series of Munch's paintings all taking place in a green room. From
 225 here the visitor can exit the experience (see figure 1).
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 242 Fig. 1. Two design sketches from the "Green Room" project drawn by Dina Patey. The audience enters the experience on the right,
 243 where they are first met with a poem setting the scene. In the space in the back is the immersive environment, where the audience
 244 will appear as avatars in the rooms projected on the walls. As they exit on the left side, they pass by one of the paintings from "The
 245 Green Room". Before they exit they are met with more information about the series.

246
 247 This design exemplifies the approach of using expressive design to let the visitors experience an aspect of Munch's
 248 universe. The design of the experience is shaped by the research about this particular series of paintings, but instead of
 249 presenting the results of the research in a textual summary, we are letting the visitors experience the themes on their
 250 own bodies. The design process is characterized by the use of experience prototyping [2]. Using various means ranging
 251 from slideshows and video to room-scale mock-ups and interactive prototypes, we are iteratively working through
 252 different elements of the experience. These prototypes are evaluated internally by the design team, and by external
 253 groups. Throughout the process, we are involving non-frequent museum-goers, museum club members, museum
 254 professionals, and professionals in the field of interactive and immersive experiences. These formative evaluations
 255 continuously shape our understanding of the experience and inform our design decisions. Finally, this constructive
 256 design research project will be followed by a summative evaluation including interviews with visitors, investigating the
 257 resulting visitor experience.
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261 Concurrently, I am interviewing the team responsible for a new forthcoming exhibition at the Munch Museum about
 262 how they have used interactive technology to tell a story about Edvard Munch's life and practice. In this exhibition,
 263 Munch's artworks play a minimal role. The only original objects are non-art objects found in Munch's house. However,
 264 even these objects are moved to the edge of the exhibition space. Taking the floor is a range of technology-enabled
 265 interactive experiences, that illustrate aspects of Munch's life and practice. Among other things the visitors can sit as a
 266 model for a shadow figure painting their portrait or they can try out a simulated lithography process. My interest in
 267 this exhibition is again, how interactive technology, is used in an approach where the visitors are invited to experience
 268 aspects of Edvard Munch's life, rather than being told about it. I see it as a way for the museum to convey the expert
 269 knowledge they possess about the artist using what Dewey would call expressions and relying less on statements. Also,
 270 these interviews will be supplemented with interviews with exhibition visitors.
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274 5 TRAJECTORY

276 In the next few months, I will be focused on finishing the two projects outlined above, and in turn, write about them.
 277 The research-through-design project will likely be followed by a second iteration, or a more detached project, to follow
 278 up the learning from the first project. Finally, a third design will follow, further developing this idea of using expressivity
 279 as a means of creating art experiences.
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281 At the same time, I will be diving into particular aspects of the experience, such as the necessity of having *an*
 282 experience and (its relation to immersion) for this type of communication to work at all. A final aspect to explore is
 283 how this approach significantly changes the role of the original artwork, in such art experiences.
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286 6 CONTRIBUTION

287 The expected contribution of this project is to develop an understanding of how the design of expressive technology
 288 can be used in establishing new relations between museum visitors and original artworks. This is done through the
 289 development of designs that proposes such new relations and by analyzing related projects. This is relevant for museums
 290 that want to develop new visitor experiences that both align with their goals for art education while also broadening
 291 their offers and thus appeal to people that normally sit outside the core target group of art museums. Additionally, this
 292 extends on and concretizes research on art experience and aesthetic interaction to further the research agenda towards
 293 a greater understanding of the capabilities of experience design.
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