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## **Restoring and Preserving Authenticity in Digital Reproductions: Case Studies on Mark Rothko's Harvard Murals and Yves Klein's Monochrome Bleu, sans titre (IKB 63)**

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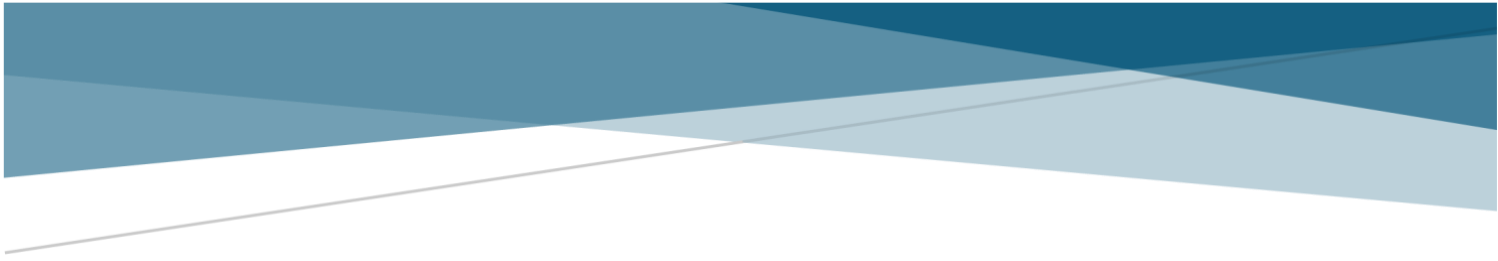
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# Restoring and Preserving Authenticity in Digital Reproductions

Case Studies on Mark Rothko's Harvard Murals and Yves  
Klein's Monochrome Bleu, sans titre (IKB 63)

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# Introduction

## Status Quaestionis

The recent developments of digital reproduction methods, such as advanced three-dimensional scanning, printing, and projecting technologies, have created new possibilities in the art world. These techniques enable conservators to create remarkably accurate replicas of original artworks, which dissolves the lines between the authentic and the reproduced object.<sup>1</sup> In terms of the preservation of cultural heritage, there are ethical implications with the reproduction of artworks, as from the conservational perspective objects are seen as sources of information, which is not passed on to a reproduction.<sup>2</sup> Frequently, traditional notions of authenticity are focused on the uniqueness and aura of an original artwork, in which issues of intention of the artist, materiality and the ownership of art are taken into account, while reproductions are branded as exact copies that are indistinguishable from the original. However, this notion can be contested, as digital reproductions can offer new forms of engagement and interpretation, while at the same time enhancing accessibility and preserving the artwork in ways that the original might not, for instance when physical preservation is challenging.

Authenticity is a very complex concept, of which there are no universal perspectives. With the arrival of new digital innovations, research becomes outdated rapidly, which results in the theories still being relevant, but they are often not tested to new digital reproduction methods. One of these theories is the well-known essay by Walter Benjamin, *The Work of Art in the Age of Its Technological Reproducibility*, in which he states that the authenticity of the work of art cannot be maintained because of the independence of the technological reproduction and the site-specificity of the original artwork.<sup>3</sup> His reflection on the concept of authenticity became a focal point in art criticism and theory, and as the discourse expanded, questions occurred on how digital techniques can influence the perception and preservation of this authenticity. This is particularly interesting in the context of colour-field paintings, since they are characterized as extremely large paintings with one single colour, or sometimes multiple colours, meant to evoke a suggestion of the sublime.<sup>4</sup> Therefore, colour-field paintings provide a unique challenge and opportunity in the implementation of digital preservation methods.

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<sup>1</sup> Tissen, "Authenticity vs 3D reproduction," 21-2.

<sup>2</sup> Van de Wetering, "The Autonomy of Restoration," 197.

<sup>3</sup> Benjamin, *The Work of Art*, 21.

<sup>4</sup> Sandler, *The Triumph of American Painting*, 150.

The integration of digital reproduction methods and the preservation of authenticity in art has been an increasingly developing field of study, which includes research on the use of digital imaging, three-dimensional scanning, and virtual reality to document and recreate works of art. Digital imaging allows for capturing the surface of an artwork, resulting in a high-resolution image that provides detailed information that can be of aid in conservational practices. For example, the Google Art Project contributed to the digitalization of museums by using gigapixel imaging to create images of artworks with the ability to zoom in to the details.<sup>5</sup> The expansion of such techniques has facilitated the circulations of reproductions, which requires an evaluation of the value and significance of both the original artwork and the reproduction. Besides, three-dimensional scanning and printing technologies have been employed to create accurate replicas of sculptures and other three-dimensional forms of art. The application of these techniques is somewhat limited when it concerns paintings, where it primarily focuses on the surface texture and pigment analysis of the painting. However, virtual reality proves to be very applicable for immersive experiences in the museum space, as it allows visitors to engage with the artworks or provides a more profound understanding of the artwork's original environment by reconstructing its historical context. Scholars have discussed the implications of digital reproduction on the notion of authenticity, of which several will be treated in the next chapter.

Although much research already has been conducted on this matter, there are notable gaps regarding the application of digital technologies specifically to colour-field paintings and their unique aesthetic demands. Existing studies tend to focus on digital reproductions of more figurative forms of art, which creates a deficiency of research that addresses how digital technologies can preserve and conserve the immersive, contemplative experience intended by colour-field artists such as Mark Rothko, Barnett Newman and Clyfford Still, and monochromists such as Yves Klein and Pierre Manzoni.<sup>6</sup> Another gap lies in the subjective nature of the aura, since it is experienced differently by different viewers. While digital reproduction methods can replicate the visual aspects of an artwork, it is questionable whether they are able to capture the emotional and psychological impact that is related to the experience of colour-field paintings. Furthermore, it is important to consider what the long-term implications are for the original artworks that are digitally reproduced and the possibility of the digital formats becoming obsolete. Thus, the aim of this thesis is to explore to what extent the existing theories are still valid for examples such as colour-field paintings.

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<sup>5</sup> Brown, "Google Art Project," §3.

<sup>6</sup> Sandler, *The Triumph of American Painting*, 148; Gompertz, *What Are You Looking At?*, 351-353.

In conclusion, the application of digital reproduction methods for the restoration and the preservation of the authenticity of colour-field paintings represents a necessary direction of study. By addressing the gaps in the literature and focusing on the requirements of colour-field paintings, concerning their aesthetics and experience, this research has the potential to contribute to the fields of digital humanities, art conservation, and museum studies. It promises to increase the common understanding on how digital innovations can be of meaning for maintaining the authenticity of artistic experiences, to ensure that future generations also have the opportunity to appreciate these artworks the way they were intended.

### Research question

As mentioned before, Walter Benjamin argues that through a (digital) reproduction, the authenticity or ‘aura’ of an artwork cannot be established. However, an artwork can change over time due to external conditions, such as changes in colours or textual surfaces, and, according to art historian Ernst van de Wetering, “rarely resembles its original appearance.”<sup>7</sup> It is also possible that an artwork moves to another location, which goes against Benjamin’s notion on the site-specificity of an artwork. A digital reproduction or projection might be able to preserve some of the qualities of both the environment of the original artwork and the artwork itself. Therefore, this thesis attempts to provide an answer to the question how digital technologies can contribute to restoring or preserving the authentic experience or ‘aura’ of a colour-field painting. This research question is relevant as it addresses a critical junction of art theory, digital technology and conservational practices. With the rapidly evolving developments of art institutions turning to digital reproduction methods for preservation as well as for accessibility for the public, it is pressing to understand the needs of different art forms. Besides, the focus on colour-field paintings is significant, because these artworks often pose challenges in traditional conservation methods. Their large scale and the oneness of their coloured fields make that the paintings are vulnerable for the slightest disruption by environmental factors or vandalism, of which the destructions of several artworks by Barnett Newman, such as *Who’s Afraid of Red, Yellow, and Blue III* and *Cathedra* (see figures 1-2), are well-known examples.<sup>8</sup> In addition, this research question pushes the boundaries of the current discourse, by stressing the importance of a multisensorial experience for museum

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<sup>7</sup> Van de Wetering, “The Surface of Objects,” 415.

<sup>8</sup> Berry, “Why Were Barnett Newman’s Paintings Destroyed?”

visitors, rather than following the ocular-centric approach that excludes all the other senses.<sup>9</sup> It seeks to understand how digital reproduction methods can replicate not just the visual aspects of the painting, but how it can replicate the feel that comes up while engaging with a colour-field painting.

As a starting point it is important to define the theory of ‘authenticity’, and thus a study of literature will be conducted to extract not only the arguments from an essay by Walter Benjamin, in which he defines the term ‘authenticity’ as the ‘aura’ of an artwork, but also the responses to his essay from multiple other scholars. These arguments will form the theoretical framework to which the case studies, colour-field and monochrome paintings, will be tested. The artworks within the case studies will be analysed from a multi-sensorial approach, since it would not be sufficient to focus only on the visual aspect, as such paintings are meant to stimulate the emotions of the public. Therefore, this analysis will happen as much as possible from personal examination of the artwork, but in the case of the impossibility of visiting the paintings, the public reception will be definite. Furthermore, several archives, such as the Stedelijk Museum in Amsterdam and the Van Abbe Museum in Eindhoven, have proven to be useful in providing important resources on colour-field and monochrome paintings. As a museum for modern art, the Stedelijk Museum has quite some colour-field paintings and monochrome paintings in its collection, which were made by prominent artists, such as Barnett Newman, Mark Rothko, and Yves Klein. Thus, the archives of the museum can provide documentation on the conservation and history of such paintings. The Van Abbe Museum does not have as much literature available, but since it has one of the case studies on view in the exhibition *Delinking and Relinking*, it provides the opportunity to analyse the painting in person. Besides, the exhibition itself gives insights in the use of reproductions, as it aims to be accessible to a wide audience by offering a multi-sensorial experience.

### Theoretical framework

This thesis will build a nuanced theoretical framework, which will be focused on several scholarly debates on authenticity to be able to examine how they can be applied to contemporary digital reproductions methods. This will be done by supplementing responses, that were all written in the last three decades, to Walter Benjamin’s previously mentioned essay that was written nearly a century ago. Firstly, Trevor Fawcett’s article “Art

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<sup>9</sup> Eardley et al., “Devisualizing the Museum,” 150.

Reproductions and Authenticity” provides a relevant foundation for examining the complex relationship between reproductions, in general, and authenticity. Fawcett suggests that although reproductions can never achieve the same authentic experience that the original artwork offers, because part of the meaning is within the material form of the artwork, they can attain their own sort of authenticity.<sup>10</sup> His perspective, albeit quite subjective and brief, offers an interesting possibility for testing the applicability of his claims to the case studies, which will be elaborated on later, particularly in the realm of colour-field paintings, where materiality plays a crucial role in the experience of the museum visitor. Secondly, Boris Groys’ discussion in the chapter “From Image to Image File—and Back: Art in the Age of Digitalization” from his book *Art Power* explores the evolution of digital images within traditional art institutions. According to him, digital copies do not exist, as they effectively become new original artworks, which redefines the concept of authenticity.<sup>11</sup> This argument will be evaluated against the case studies, to determine whether it holds true beyond digital images by applying it to different reproduction methods to be able to assess its validity in preserving the aura of colour-field paintings. Thirdly, David Joselit’s *After Art* further enriches the theoretical framework by examining the proliferation of digital technologies, that make the endless copying and the circulation of images possible. He focuses on how images are linked to networks and how these images circulate within these networks, which provides a contemporary counterpoint to Benjamin’s theory that emphasizes the flexibility and the connections of digital reproductions.<sup>12</sup> This point of view is crucial for understanding how digital networks impact the perception of authenticity. Fourthly, and lastly, Liselore Tissen and Mané van Veldhuizen’s article “Picture-Perfect: The Perception and Applicability of Facsimiles in Museums” critically challenges the Western notion that authenticity is grounded in the materiality of the artwork.<sup>13</sup> By using Benjamin’s theory as a starting point, their study on the painting *Girl with the Pearl Earring* suggests that reproduction methods can convey authenticity.<sup>14</sup> As their research was a pilot and rather explorative, their findings will be expanded and refined through the case studies of colour-field paintings. By integrating all of these perspectives, this thesis aims to address the gaps in existing theories, and in particular wishes to compensate for the lack of focus on colour-field paintings and their unique aesthetic demands. To achieve this, the theoretical framework will be a guide in determining how

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<sup>10</sup> Fawcett, “Art Reproductions and Authenticity.” 20.

<sup>11</sup> Groys, “From Image to Image File,” 85-6.

<sup>12</sup> Joselit, *After Art*, 13-5.

<sup>13</sup> Tissen & Van Veldhuizen, “Picture-Perfect,” 3.

<sup>14</sup> Tissen & Van Veldhuizen, “Picture-Perfect,” 7.

digital reproduction methods can restore and preserve the experience of colour-field paintings, which was intended by artists like Mark Rothko, Barnett Newman and Yves Klein.

### Case studies

The theoretical framework as described above, will be applied to two case studies of colour-field paintings, taking into account the public reception and the intention of the artist to create an immersive experience, since these aspects can be quite different from figurative art paintings. The case studies will not only consider the paintings themselves, but also the context of their display, which creates a narrative that to a large extent determines how the artworks are perceived by the public. Besides, the impact that digital reproductions have or might have will be considered, by hypothetically discussing the positive and negative consequences of making a digital reproduction of a colour-field painting.

The first case study examines *Rothko's Harvard Murals* (see figures 3-7) by Mark Rothko, a series of paintings that underwent a digital restoration at Harvard University. The restoration project involved creating a digital projection to replicate the original colours of the murals.<sup>15</sup> It switches the projections on and off, to show the current faded state of the paintings and the digitally restored version. Although this method does not concern a direct reproduction, it serves for conservational purposes and offers a unique opportunity to test theories on authenticity. The digital images of the murals will be analysed to evaluate how effectively they transfer the original experience and aura, as intended by Rothko. The second case study focuses on Yves Klein's *Monochrome Bleu, sans titre (IKB 63)* (see figure 8), which is displayed at the Van Abbemuseum. This painting exemplifies the three-dimensional aspect of Klein's work, which is best appreciated when one is standing in front of it in the museum. The painting is part of the exhibition *Delinking and Relinking*, which will also be considered, as it is designed to provide a multi-sensorial experience and thus enhances the accessibility and engagement of museum visitors. Since a professional digital reproduction has not yet been made of this painting, the discussion will be about a hypothetical creation of a reproduction, to explore whether that would be possible with this painting and how it would be an addition to a multi-sensorial exhibition.

Both case studies are crucial for exploring the potential of digital reproductions to restore or preserve the authentic experience of colour-field paintings. It is important to note that the intent of both Klein and Rothko was to for their paintings to create an experience for

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<sup>15</sup> Cohn, *Mark Rothko's Harvard Murals*, 24-6.

the viewer, and thus were focused on transferring an aura. By examining how paintings that only exist of one of more coloured fields can be reproduced, this opens possibilities for colour-field paintings that are claimed to have lost their aura, due to destruction and the subsequent conservation practices. The theories of Fawcett, Groys, Joselit and Tissen and Van Veldhuizen will be used to test the case studies, so that this thesis will provide a comprehensive analysis on how reproductions can influence the perception and preservation of authenticity in colour-field paintings. The results will help to fill the gaps in existing literature and will offer relevant contributions to the ongoing debate on the role of digital reproductions in art conservation.

### Structure of the thesis

This thesis will have the following structure: the first part of chapter one will offer a deeper notion of the authenticity in the works of Mark Rothko and Yves Klein, by examining the artist's intention. The second part of chapter one will focus on the statement on authenticity by Walter Benjamin, followed by several responses to his essay. The first one of these responses is an article by Trevor Fawcett, which focuses on the possibility of reproductions attaining their own sense of authenticity, as a part of the authenticity of an original artwork always remains locked in its material form. Another response is given in one of the chapters of the book *Art Power* by Boris Groys, in which he describes how digital images have become part of the traditional art institution through time. An important aspect of this response is that a 'copy' does not exist, as every reproduction is an original artwork. David Joselit also gives a response to Benjamin in his book *After Art*, which focuses on the process of art production with the significant role of the artists intention and what happens when digital images of the artwork are circulating in heterogeneous networks. Last, in an article by Tissen & Van Veldhuizen it is stated how the Western idea of the aura, that was created by Benjamin, causes to reject the idea that authenticity can be applied to reproduction methods, as they can be more than just their material form. This is where the responses correspond to each other, since they all in some way suggest that the authenticity of an object should not only be based on its materiality, making digital reproductions also authentic.

Altogether, these theories will form the theoretical framework to which the two case studies will be tested, each in their own chapter. Thus, the second chapter will elaborate on the case study of a series of paintings by Mark Rothko, *Rothko's Harvard Murals*, which are on view in the Harvard Art Museums, with an emphasis on the sub-question: How can the digital light projection on *Rothko's Harvard Murals* by Mark Rothko contribute to restoring

and preserving the authentic experience or the aura of the artwork? As a starting point, the technical research that was conducted will be used to analyse the panels individually. The third chapter will be dedicated to the case study of a painting by Yves Klein, *Monochrome Bleu, sans titre (IKB 63)*, that is currently in the collection of the Van Abbemuseum, and will involve a multi-sensorial description of the work. This will be followed by an extensive analysis that touches upon themes such as authenticity and materiality, to be able to answer the sub-question: How can a potential digital scan of *Monochrome Bleu, sans titre (IKB 63)* by Yves Klein contribute to restoring and preserving the authentic experience or the aura of the artwork? Finally, the conclusion will reflect on the main findings that result from testing the theories to the case studies and will at this consider important themes such as public reception, artists intent, and art conservation with respect to the authenticity and the materiality of the artwork, while also keeping in mind the stakeholders.

## Theoretical framework

### Introduction

This chapter will explicate the theoretical framework, underlining the analysis of authenticity in the context of digital reproductions of artworks, keeping in mind the artist's intention. The aim of this chapter is to build a comprehensive understanding of how authenticity is perceived by both artists and art theorists, by examining the artistic intention of Mark Rothko and Yves Klein and the theories of notable scholars, such as Ernst van de Wetering and Walter Benjamin, and subsequently the comments of other scholars to the latter. In this way, a profound foundation is provided for examining whether authenticity can be maintained in the reproduction of artworks. Specifically, this chapter will address the sub-question: How is the concept of authenticity interpreted by Mark Rothko and Yves Klein, and how does the scholarly perception of authenticity inform the understanding of the potential of maintaining authenticity in digital reproductions of artworks?

Firstly, the intentions of the artists Mark Rothko and Yves Klein, both renowned for their distinctive approaches to art, will be considered, as understanding this is crucial for assessing the authenticity of reproductions of their works, particularly in how these reproductions preserve or alter the original artistic experience. Secondly, the concept of authenticity will be further explored, drawing on historical and contemporary perspectives, by analysing the essay *The Work of Art in the Age of Its Technological Reproducibility* by Walter Benjamin, which will be accompanied by responses to his theory by Trevor Fawcett, Boris Groys, David Joselit, and Leonore Tissen and Mané van Veldhuizen. Eventually, these theories will be applied to the case studies in the next chapters.

### Intention of the artist: Mark Rothko

Mark Rothko (1903-1970), a leading figure in the colour-field movement within abstract-expressionism, is best known for his large-scale paintings with multiple coloured fields. His journey as an artist began with a diverse range of styles, starting with realistic landscapes and still-lives, towards surrealism, and the late 1940s were the years of transition in which he started working towards his signature approach: colour-field painting.<sup>16</sup> In *Janson's History of Art* by H.W. Janson (1913-1982), Rothko's work is described as mythical paintings that exist of many transcendent layers of colour, which evoke a spiritual, or perhaps even sublime,

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<sup>16</sup> Baal-Teshuva, *Mark Rothko*, 17.

experience, although there are no symbols to make out the meaning of the paintings.<sup>17</sup> The scale of the paintings played an important role in creating such an experience, as the large scale of the painting functioned as an invitation towards the viewer to focus on their inner world, by standing close to the paintings and letting themselves get immersed by the colour.<sup>18</sup> His intention as an artist thus was rooted in the aim to create profound emotional and spiritual experiences, which he tried to convey through his distinctive use of colour and composition.

In a statement from 1947, it becomes clear that Rothko was convinced that “freed from a false sense of security and community”, an artist could create paintings that serve as a vehicle for transcendental experiences.<sup>19</sup> He asserted that his paintings were not about an experience, but were the experience itself, which reflects his desire for the viewer to engage with his paintings on an intimate and personal level, of which the *Seagram Murals* is the best example. This series was created to capture and hold the attention of a museum visitor, by getting rid of any recognizable forms or symbols and allowing colour to take on the primary role in conveying emotions, such as “tragedy, ecstasy and doom.”<sup>20</sup> According to Rothko, this was the way he could communicate this, and he states that “the fact that lots of people break down or cry when confronted with my pictures shows that I *communicate* those basic human emotions.”<sup>21</sup> In addition to his focus on emotional expression, Rothko was aware of the dynamics of space within his artworks, as he used diluted layers of oil paint to build up overlapping mixtures of colour.<sup>22</sup> This technique established a sense of depth and movement, that caused the viewers to get into a meditative state. As Rothko was very involved about how his works were displayed, such as he advocated for low lighting and intimate settings to enhance the emotional impact, it can be concluded that there is a certain level of site-specificity is attached to his paintings.<sup>23</sup>

In conclusion, Mark Rothko’s artistic intention was to make artworks to evoke emotional and spiritual experiences. The use of colour, spatial dynamics and his involvement on the display within the museum space all do duty to enhance the engagement with the viewer, which connects his paintings strongly to human emotions.

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<sup>17</sup> Janson, *Janson’s History of Art*, 1040.

<sup>18</sup> Rothko, *From the Inside Out*, 33-4; Janson, *Janson’s History of Art*, 1040.

<sup>19</sup> Rothko, *Writings on Art*, 58-9.

<sup>20</sup> Rothko, *From the Inside Out*, 135, 171.

<sup>21</sup> Rothko, *Writings on Art*, 119; Baal-Teshuva, *Mark Rothko*, 57.

<sup>22</sup> Baal-Teshuva, *Mark Rothko*, 46-9.

<sup>23</sup> Cohn, *Mark Rothko’s Harvard Murals*, 8.

## Intention of the artist: Yves Klein

Yves Klein (1928-1962) is a post-war French artist, who is best known for his monochrome works and his innovative use of colour, as he developed his own shade of ultramarine-blue, named *International Klein Blue (IKB)*.<sup>24</sup> Klein's artistic intention was based on a strong fascination for immateriality, or what he preferred to call 'the void', spirituality and the infinite.<sup>25</sup> In his search for this 'void', an infinite space above us and beneath us, he started to express his ideas in large, abstract paintings of only one colour, with the aim to present a window that is open to freedom.<sup>26</sup> In multiple references on Yves Klein, his philosophy is explored in depth and especially his belief that his unique blue colour could evoke an experience of the infinite.<sup>27</sup> This is also the reason why he proudly called his blue IKB-series, his 'pure idea', after he got a patent on the pigment he created by mixing a special resin to a synthetic ultramarine.<sup>28</sup> He also claimed that he was the first artist to create an actual monochrome, as "his monochromes were not framed by an atmospheric "background" or three-dimensional space", compared to for example Kazimir Malevich's paintings.<sup>29</sup>

However, Klein had the ambition to stop working with easel paintings, and focused on performance art. In the series *Anthropométries*, he directed nude models to cover themselves in blue paint to imprint their bodies on a canvas, combining the performance with serving blue drinks and with composing his own piece of music, which created a performance that exemplified his intention to capture the immaterial essence of human presence (see figure 9).<sup>30</sup> Such performances were more than solely a spectacle, as they became rituals that were focused on making the invisible visible.<sup>31</sup> By using his models as "living brushes", he tried to show the emphasis on the process and the performative act over the final product.<sup>32</sup> His exploration of the void and the concept of the infinite also recur in the photomontage *Leap into the Void* (see figure 10), which depicts him leaping from a building, as this symbolizes his desire to transcend physical reality and investigate the unknown.<sup>33</sup> This is also what he wanted the viewers of his work to experience, so that they would be challenged to rethink the boundaries of reality and art, through the interaction with his paintings.

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<sup>24</sup> St Clair, *The Secret Lives*, 186.

<sup>25</sup> Charlet, *Yves Klein*, 7.

<sup>26</sup> Gompertz, *What Are You Looking At?*, 351; Klein, *Overcoming the Problematics*, 155.

<sup>27</sup> Charlet, *Yves Klein*, 9.

<sup>28</sup> St Clair, *The Secret Lives*, 186.

<sup>29</sup> Cheetham, "Matting the Monochrome," 96.

<sup>30</sup> Gompertz, *What Are You Looking At?*, 352.

<sup>31</sup> Charlet, *Yves Klein*, 152-4.

<sup>32</sup> Charlet, *Yves Klein*, 170.

<sup>33</sup> Weitemeier, *Yves Klein*, 51, 54.

In conclusion, the intention of Yves Klein was characterized by the use of his unique IKB-colour in his monochromes, in which he sought to evoke a sense of immateriality. His innovative approach extended beyond painting, since he also used performance art to emphasise the importance of the process of creating an artwork. Klein's legacy challenges the viewer to let themselves be immersed into the unknown, while experiencing his paintings.

### Authenticity and Reproduction

Before authenticity in digital reproductions of *Rothko's Harvard Murals* and *Monochrome Bleu* can be analysed, it is essential to define and explore the various interpretations on the idea of an 'authentic' artwork. The concept of authenticity and its relation to reproducing artworks has a complex and evolving history and to understand this, a definition of these terms is required. Generally, authenticity relates to the value an original object has, in other words how 'real' an artwork is. Obviously, the concept will be further examined by means of multiple theories on the interpretation of authenticity.

As a renowned art historian, Ernst van de Wetering (1938-2021) has written extensively about authenticity. He argues that our acceptance towards reproductions is caused by realizing that we can visualize the outer qualities of an object, while in fact renouncing the loss of subtleties.<sup>34</sup> Based on his theories, especially through his specialism on Rembrandt, a distinction was made between three categories of authenticity: material authenticity, which focuses on the original form and content of an object; conceptual authenticity, which is connected to the artist's intent; and contextual authenticity, which focuses on the original site of the object. Additionally, the distinction can be made between ahistorical authenticity, that connects to the material aspect of authenticity of the object in its pure form, and historical authenticity, which accepts the transformations of an object, as with the slightest alteration it has ceased to exist and has created a new object.<sup>35</sup> For this reason, authenticity is often discussed in issues of conservation and restoration, but according to Cesare Brandi (1906-1988) "reconstruction, re-creation or replication have nothing to do with restoration proper", which indicate that reproductions should only be used to understand the process of making an artwork, not by means of replacing it.<sup>36</sup> This highlights the important difference between a reproduction and a falsification, as in this debate the focus should be on copies that intend to

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<sup>34</sup> Van de Wetering, "The Surface of Objects," 416.

<sup>35</sup> Van de Wetering, *A Corpus*, 89.

<sup>36</sup> Brandi, *Theory of Restoration*, 66.

closely imitate the original, rather than to deceive viewers into believing that they are the original.

Even though nowadays we are far more experienced in dealing with reproduction technologies, as they are present in our daily life, this has been different in the past. Historically, reproducing artworks was a common practice, since apprentices used to copy the works of their master as part of their training and these reproductions were thus valued as legitimate works of art. Besides, reproducing functioned as a way to make an artist's personal style more accessible to a wider public, because often only a select group of people could afford works of art. In his essay 'Aesthetics and History in Visual Arts', Bernard Berenson (1865-1959) states that the sculptures that we would now acknowledge as Greek masterpieces, were not the spontaneous creations of their artists, but rather a cast or a copy as a model for the final masterpiece.<sup>37</sup> The awareness that we are not dealing with true originals is not always present, because of the meaning that has been given to an artwork through history. The 20<sup>th</sup> century brought a significant shift with technologies such as photography and digital imaging, in which the mass production caused an increase of creating reproductions, that were sometimes indistinguishable from its original. This led to the loss of a unique presence in a work of art, or 'the aura' as Walter Benjamin would describe it.

Applying these principal theories to the following theories on authenticity and reproduction and eventually to the case studies, will provide deeper insights on how authenticity should be understood and when a reproduction can be determined as authentic. With the categories stated by Van de Wetering, a comparative analysis between Rothko's original murals and the murals with digital projection can be conducted. The projection aims to restore the original colours of the murals, which raises interesting questions concerning the conditions of the original artwork as well as the reproduction. By also considering the described intention of the artist, a complete picture can be composed on whether the reproduction in the form of a projection was successful and what meaning it bears in art conservation and public reception.

Similarly, Yves Klein's painting can be analysed through these categories, as it would explain the significance of creating a digital scan of the monochrome, and how this would be done in the best way possible, especially with its place in a multi-sensorial exhibition. It is interesting to consider the possibility that a digital scan could be used for creating a facsimile, which would add value to such an exhibition as in the Van Abbemuseum. Exploring these

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<sup>37</sup> Berenson, "Aesthetics and History," 45.

categories of authenticity in the context of digital reproductions thus provides part of a comprehensive framework for understanding how new technologies impact the perceived authenticity of the artworks from the case studies.

### Walter Benjamin on Authenticity

Walter Benjamin (1892-1940) was a German philosopher and literary critic who wrote his seminal article on authenticity during a politically unstable time, which was marked by the rise of fascism. His awareness of this political context is evident, as he references in his introduction to Karl Marx's prognostic analysis of capitalist production.<sup>38</sup> Benjamin's essay, *The Work of Art in the Age of Its Technological Reproducibility*, was first published in 1935, with subsequent editions in 1936 and 1939, amidst the political difficulties that were caused by the Nazi regime. His aim was to contribute to "revolutionary demands in the politics of art", and his work has since generated extensive secondary literature, both supportive and critical.<sup>39</sup>

The key argument that Benjamin makes, is that the authentic essence, which he defines as the 'aura', of a work of art disappears when it is mechanically reproduced. He makes a crucial differentiation in this argument, as he states that the authentic qualities of hand-made reproductions will be conserved, whereas this is not the case for a technological reproduction.<sup>40</sup> As stated before, reproductions used to be more accepted and even necessary in the propagation of artworks, despite some of them were already produced by machines like printing presses. However, the mass production methods of the 20<sup>th</sup> century introduced a new standard of reproduction, that also became an artistic process in its own right.<sup>41</sup> This shift raised questions about the loss of traditional values in art, which lead to Benjamin identifying two different manifestations on technological reproduction: the use of modern technological mechanisms to reproduce existing art, and the process of technological reproduction that becomes an artwork itself. He further exemplifies on the differences between manual and technological reproduction. According to him, this distinction is twofold: first, manual reproduction is highly dependent on the original, as the manual reproduction will always be tied to the original, whereas the technological reproduction can surpass these limitations. Second, technological reproduction can be placed in contexts and environments that the original artwork will never meet. The key argument of Benjamin becomes very clear here, as

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<sup>38</sup> Benjamin, *The Work of Art*, 19.

<sup>39</sup> Benjamin, *The Work of Art*, 20.

<sup>40</sup> Benjamin, *The Work of Art*, 21.

<sup>41</sup> Benjamin, *The Work of Art*, 21.

he argues that “these changed circumstances may leave the artwork’s other properties untouched, but they certainly devalue the here and now of the artwork”, an aspect that decides its unique existence, and thus the authenticity of a work of art. When the authenticity is determined by the physical duration and the historical testimony of an artwork, and the latter is removed through technological reproduction, the authenticity logically disappears too.<sup>42</sup>

Benjamin’s essay provides a critical analysis of the impact of technological reproducibility on the nature and value of art. It offers a revolutionary perspective on the role of art in society, which has derived from a context of mass culture and political trouble. Until this day, his insights continue to influence contemporary discussions on art, culture, and politics. Applying Benjamin’s theory to contemporary research means examining what happens to the sense of authenticity once digital technologies are involved. By analysing *Rothko’s Harvard Murals* through Benjamin’s lens, the question can rise on whether the light projection maintains, and thus restores, the murals’ conceptual authenticity, or that it creates a new authentic experience, and how it compares to the authenticity of the original artwork.

### Other authors on Authenticity

#### **Trevor Fawcett**

The article “Art Reproductions and Authenticity” was written by Trevor Fawcett (1934-2017), an author and editor from Bath, who conducted research on several cultural aspects through which he realized how difficult it is to reproduce works of art in print.<sup>43</sup> In the article, which was written in 1997, Fawcett examines the complex relationship between a reproduced artwork and its authenticity. He argues that reproduced artworks are often mistakenly accepted as equal to their originals, and emphasises that reproductions are essentially illusions, but that this fundamental distinction is overlooked frequently.<sup>44</sup> While reproductions can offer significant educational benefits, according to Fawcett they fail to capture the true essence and materiality, to which an original artwork is tied.<sup>45</sup> The key point of his article is that a reproduction can never get to the same level of the original artwork, as a part of its meaning will always remain in its material form.<sup>46</sup> Another interesting aspect that Fawcett mentions, is that artworks change over time, which produces the question on how to

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<sup>42</sup> Benjamin, *The Work of Art*, 22.

<sup>43</sup> Fawcett, “Trevor Fawcett obituary.” §3, §7.

<sup>44</sup> Fawcett, “Art Reproductions,” 21.

<sup>45</sup> Fawcett, “Art Reproductions,” 20.

<sup>46</sup> Fawcett, “Art Reproductions,” 25.

determine what is the original, as it is often thought of as a “unchanging entity” that the reproduction must record in the best way possible.<sup>47</sup>

Comparing Fawcett’s views to Walter Benjamin’s theory, it becomes clear that both scholars acknowledge the fundamental loss of authenticity that occurs during a reproduction process.<sup>48</sup> They both argue that reproductions cannot replicate the unique material and historical context of an original artwork. However, Fawcett’s perspective is more focused on the tangible differences between original and reproduced artworks, whereas Benjamin provides a more expansive critique of how mechanical reproduction changes the very nature and reception of art in society. Fawcett’s article provides a detailed examination of the complexities surrounding art reproductions and their authenticity. His insights complement and extend the discourse initiated by Benjamin, which results in a more focused analysis on the practical challenges and perceptual issues that are involved in art reproduction.

### **Boris Groys**

The next theory that will be considered is the book *Art Power*, which was written in 2008 by Boris Groys (1947), an art critic, media theorist and philosopher. In the book chapter “Art in the Age of Digitalization”, he explores how digital media reshape our understanding and experience of art.<sup>49</sup> He compares the relationship between the image and the image file to the relationship between an original artwork and a reproduction, as he describes the image as the copy of the image file, the intangible authentic original.<sup>50</sup> In addition, he agrees with Benjamin that a loss of aura occurs, since “because nothing has more aura than the Invisible.”<sup>51</sup> The main argument of this book chapter is that in the digital context, authenticity is not tied to the materiality of an artwork, but rather to its presence and circulation within digital networks.<sup>52</sup> His approach opens possibilities, because the statement that the digital image can be adjusted, such as lighting and the material quality, so that it functions as a reproduction, but produces a new original artwork. Groys thus states that copies do not even exist, as “we are only dealing with originals.”<sup>53</sup> This challenges the traditional notions of authenticity, as the value of a digital artwork lies in its ability to be endlessly replicated and circulated.

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<sup>47</sup> Fawcett, “Art Reproductions,” 21.

<sup>48</sup> Fawcett, “Art Reproductions,” 25.

<sup>49</sup> Groys, *Art Power*, 83.

<sup>50</sup> Groys, *Art Power*, 84.

<sup>51</sup> Groys, *Art Power*, 86.

<sup>52</sup> Groys, *Art Power*, 83.

<sup>53</sup> Groys, *Art Power*, 91.

Both Groys and Benjamin are engaged with the impact of technological reproduction on art, but they do so from different historical contexts. Although Groys acknowledges Benjamin's concept on the aura of an artwork, as he even makes a comparison to the relation between images and image files, he suggests that digital art operates in a different paradigm. This clears the way for recognition towards new forms of presence and authenticity, which is afforded by digital technologies. This book chapter offers a critique on the evolving nature of art in the digital era, with an analysis that is based on Benjamin's foundational ideas, but at the same time presents a nuanced understanding on how digital technologies can redefine such concepts.

### David Joselit

David Joselit (1959), an art historian and critic who is currently a professor at Harvard University in the department of Art, Film, and Visual Studies, writes about the power of art through three important aspects, that are subsequently chapters in his book, namely 'Populations', 'Formats', and 'Power'.<sup>54</sup> Joselit argues that the traditional concept of art as a unique object has been profoundly disrupted by the arrival of global networks, with searching machines such as Google.<sup>55</sup> The significance of an artwork is not connected to its physical presence or singularity anymore, but in its ability to connect with these global networks. He responds to Benjamin's essay by stating that it has become an obstacle, since there has not been written a better analysis that matches the developments around digital technologies with the changed dynamics in the art world.<sup>56</sup> In the key argument against Benjamin's argument on site-specificity, Joselit states that in times in which images and artworks are freely circulating across platforms, the value of artworks now depends on "saturation"; whether their images are part of a trend.<sup>57</sup>

When comparing Joselit's views to those of Walter Benjamin, several important distinctions become noticeable. Benjamin states that reproductions cause the original artwork to be detached from its historical and material context and thus loses its authentic value, but Joselit embraces the fluidity that this development brings with it. In contrast to Benjamin, he sees the potential in the new forms of connectivity and circulation. He substantiates that the engagement with global networks has resulted in a redefinition of the capacities of artworks, and that this is not necessarily a negative development. Joselit's book provides an analysis

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<sup>54</sup> Aggarwal-Schiffelrite, "New Faculty,"; Joselit, *After Art*, xiv-xvi.

<sup>55</sup> Joselit, *After Art*, 90.

<sup>56</sup> Joselit, *After Art*, 12-13.

<sup>57</sup> Joselit, *After Art*, 16-18.

that highlights the impact of digital technologies and network culture, and both contrasts with and extends the concerns of Walter Benjamin.

### **Leonore Tissen and Mané van Veldhuizen**

The most recent response to Walter Benjamin's essay from this selection, is the article "Picture-Perfect – The Perception and Applicability of Facsimiles in Museums", written by Liselore Tissen and Mané van Veldhuizen in 2023. The two authors focus on an intersection of art, technology and museum practices, with the aim to determine the impact a facsimile, a three-dimensional reproduction, can have, for both the museum visitor and professionals, such as conservators and curators.<sup>58</sup> The main argument they present is that facsimiles, when used appropriately, can serve as valuable tools in museums for purposes such as presentation, conservation, accessibility, and possibly for education.<sup>59</sup> In support of demonstrating the impact of facsimiles on the original artwork, the case study *Girl with a Pearl Earring* has been used to test their hypothesis to, involving the public reception of the reproductions.<sup>60</sup> Furthermore, an interesting clarification is made on the terminology, which could prove to be useful in determining the best definitions of these terms.<sup>61</sup>

One significant similarity between the argument by Tissen and Van Veldhuizen and Benjamin's essay, is the acknowledgement that technological reproduction can alter the perception of art. However, instead of the by Benjamin suggested loss of the aura of an artwork, Tissen and Van Veldhuizen offer a more nuanced perspective, in which they state that facsimiles can retain a different kind of authenticity. Another key difference lies in the approach towards the role of technology in art, not only since there have been added many new reproduction methods between the two publications, but also since the authors of "Picture-Perfect" believe that facsimiles can coexist with originals in a way that enriches the viewer's understanding and appreciation of the artwork. Their article presents a contemporary take on the issues raised by Benjamin, offering a more optimistic view on how digital reproductions can be an addition in the art world.

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<sup>58</sup> Tissen and Van Veldhuizen, "Picture-Perfect," 1.

<sup>59</sup> Tissen and Van Veldhuizen, "Picture-Perfect," 6, 32.

<sup>60</sup> Tissen and Van Veldhuizen, "Picture-Perfect," 23.

<sup>61</sup> Tissen and Van Veldhuizen, "Picture-Perfect," 8.

## Case study: *Rothko's Harvard Murals*

### Introduction

The first case study on the *Harvard Murals* by Mark Rothko, will focus on the restoration project that was performed with a new digital innovation of using light projection. The project had a clear conservational purpose, which means that there is a lot of documentation on the decisions that were made. This chapter will answer the following sub-question, that is in support of eventually answering the research question: What did the restoration project on the *Harvard Murals* with digital light projection contain and what does it indicate on preserving and restoring the aura of the artwork? First, a general analysis of the paintings will be given to answer the first part of the sub-question, so that the contexts of the artworks and the restoration project are clear. The second part of the sub-question will be answered by means of applying the theories from the theoretical framework to this case study, starting with the role the intent of Mark Rothko has played in the restoration process, which is followed by the theories of Benjamin and other scholars, to wind up with a brief notion on the conservational perspective. Through a provisional conclusion, the benefits and difficulties of using digital techniques as a form of restoration will be stated.

### Analysis of the Paintings

Mark Rothko's *Harvard Murals* is a series of five panels that were all painted in the beginning of the 1960s.<sup>62</sup> As the name gives away, the paintings were commissioned by Harvard University, to which Rothko decided to donate paintings that actually had an interrelation to each other, instead of choosing single paintings.<sup>63</sup> Each painting is characterized by Rothko's use of coloured fields and subtle layering techniques, which together aimed to evoke an emotional experience. This commission was a crucial one in the development of his work, as Rothko started to paint much darker paintings in this period.<sup>64</sup>

The first aspect that strikes the viewer, is the scale of the murals, that was presumably derived from the commission of the *Seagram Murals*.<sup>65</sup> Each panel is large, the width of all the panels is approximately 2,67 meters, and two panels have a length of no less than 4,5 meters, which causes the viewer to be surrounded by enormous fields of colour.<sup>66</sup> As

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<sup>62</sup> Cohn, *Mark Rothko's Harvard Murals*, 7-8.

<sup>63</sup> Cohn, *Mark Rothko's Harvard Murals*, 7.

<sup>64</sup> Rothko, *From the Inside Out*, 64-65.

<sup>65</sup> Rothko, *From the Inside Out*, 63.

<sup>66</sup> Cohn, *Mark Rothko's Harvard Murals*, 27-30

mentioned in the theoretical framework, the scale of the paintings was essential in Rothko's intention, as the dimensions of the panels and their placement within the museum space encourages a sense of sublime, that draws the viewer into a meditative state. Another aspect that is striking are the colours that Rothko used for this series, especially as it differs from the previous bright-coloured works he painted. The colour palette of *Rothko's Harvard Murals* is dominated by deep-reds, maroons and blacks. Eventually, these colours would fade to pink and ultimately to cobalt blue (see figure 11).<sup>67</sup> Rothko's technique in these murals is more layered and precise than may seem at first sight, because he applied diluted washes of paint, which allowed the colours to build up gradually and interact with each other in complex ways.<sup>68</sup> This method results in a luminous effect, that make it seem as if the colour fields were lighted up from the inside, outlined by soft and blurred edges, which recurs often in Rothko's style. Despite the overall dejected tone, these laminations combined with saturated colours create a lively and dynamic surface. The composition is also an interesting aspect of *Rothko's Harvard Murals*, as the panels present more fluid shapes compared to some of his earlier works.<sup>69</sup> Where many paintings by Mark Rothko are metaphorically described as windows, these panels can be characterized in the literal sense of the word. The forms seem to float and shift within the canvas, which gives the feeling that they are moving.

The context in which the murals were displayed, also plays a crucial role in their interpretation. Installed in the penthouse of the Holyoke Centre, a modernist building with large windows and a panoramic view of the city, the murals were intended to interact with natural light and the environment.<sup>70</sup> Rothko desired to be deeply involved in the installation process, as he wanted to ensure that the lighting and the architectural space complemented the paintings. Due to the changing light throughout the day, the perception of the colours would be altered and added another dynamic to the paintings. Unfortunately, this also brought its challenges, as the exposure to light caused the pigments to fade dramatically, which changed the original appearance of the paintings.

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<sup>67</sup> Rothko, *From the Inside Out*, 63-64; Stenger et al., "The making of," 334.

<sup>68</sup> Rothko, *From the Inside Out*, 201.

<sup>69</sup> Stenger et al., "The making of," 332.

<sup>70</sup> Cohn, *Mark Rothko's Harvard Murals*, 1, 2.

## Application to the Theoretical Framework

### Light Projection on the *Harvard Murals*

In order to restore the *Harvard Murals* to their original visual state, Harvard University developed an innovative project that involved projecting light onto the murals. This digital light projection aimed to restore the appearance of the original colours without physically altering the paintings themselves. Conventional restoration methods were not satisfactory, as it would entail using the original pigment Lithol Red, of which conservation scientist Paul Whitmore had proved in 1988 that it was not immune to the amount of light in the installation of the paintings in the Holyoke Centre.<sup>71</sup> Thus, these methods would not give long-lasting results and would eventually be at the expense of Rothko's brushstrokes in the paintings. However, the main intention of this new technology was to spark discussion on a new conservational method, which is already approved according to the ethics of conservation, as the digital technique is reversible.<sup>72</sup> In developing the technique for the murals, a lot of preparation and research needed to be done, which started with the analysis of the original colours of the paintings by making high-quality digital photographs. Hereafter, Rothko's palette was applied directly to the faded surfaces via carefully calibrated light projection. One big difference with other restoration projects is that this project is focused on "restoring the appearance of the paintings", not the painting itself, and thus the projectors are switched on and off to see both the original murals and its digital reproductions.<sup>73</sup> This method allows museum visitors to experience the murals as Rothko intended, despite the inevitable physical deterioration of the original pigments.

This restoration approach raises crucial questions about the authenticity of the artworks and the preservation of its aura. By exploring the implications of this project through the lens of the artist, art theorists and conservators with their theories on authenticity and artistic intention, digital techniques like these can be understood better, to eventually determine whether they contribute or detract from the preservation of the authentic experience of the paintings. The idea of using digital light projection to restore the *Harvard Murals* was not new, as it was described already in the 1980s by the Canadian conservator Raymond Lafontaine, but its execution represented a groundbreaking approach in art conservation, in the first place because it differs from physical intervention with the materials of the artwork.<sup>74</sup>

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<sup>71</sup> Stenger et al., "The making of," 344.

<sup>72</sup> Walsh, "A light touch."

<sup>73</sup> Walsh, "A light touch."

<sup>74</sup> Garber, "How to Restore."

Instead, the digital projection seeks to enhance the viewer's experience by digitally compensating for the mural's faded colours, effectively placing an image of the original colours of the artwork onto the deteriorated surface.

### **Preserving Rothko's Intent**

Understanding Rothko's intentions is crucial for assessing whether the digital projection preserves the authenticity of his murals. Rothko was deeply concerned with the emotional and spiritual impact of his work. His colour-field paintings were made to overwhelm the viewers, inviting them into a meditative state. Rothko was very precise in the presentation of his works, and wanted to have control over the lighting, scale and spatial arrangement, which was integral to achieve the desired immersive effect. The digital projection, by restoring the original vibrance of the colours seeks to honour Rothko's intent. It was stated that Christopher Rothko, the son of Mark Rothko, who took care of his father's legacy after his death, was at first sceptical of the project. Once he saw the rich hues that the paintings used to have restored, he claimed it to be as vividly as possible.<sup>75</sup> The approach that was used in this project, aligns with the idea of 'conceptual authenticity', as explained by Ernst van de Wetering, which emphasizes the importance of preserving the artist's original intent, even if this means deviating from the material authenticity of the original work.

### **Walter Benjamin's Aura**

Walter Benjamin's essay, *The Work of Art in the Age of Its Technological Reproducibility*, provides an important lens for examining the impact of digital reproduction on the authenticity of an artwork, especially in the case of the *Harvard Murals*. Benjamin argues that mechanical reproduction strips artworks of their 'aura', the unique presence that an original artwork possesses, which is derived from its history and physical existence. According to him, the aura is tied to the here and now of the artwork, its existence in a specific time and place that contributes to its authenticity. In analysing the digital projection on Rothko's murals, this concept of the aura might be seen as double-edged. On the one hand, the projection revives the original colours of the paintings, potentially restoring the emotional impact that Rothko intended, which could be seen as preserving the aura in a conceptual sense. On the other hand, the use of digital technology to recreate these colours introduces a new, inauthentic experience, which is separated from the physical materiality of the murals themselves. The projection does not restore the original pigments, but places a digital image onto the faded

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<sup>75</sup> Walsh, "A light touch."

surface, that is turned on and off regularly, creating a hybrid experience that blurs the line between original and reproduction. Particularly relevant here is Benjamin's concern on the loss of aura in reproduced artworks. The projection might be seen as a diminish of the paintings' historical authenticity, because of the introduction of an artificial element into the visual experience. However, it could also be argued that by preserving the aura in a conceptual sense that is close to Rothko's intention, a different kind of aura is maintained; one that is connected to the emotional and spiritual impact, rather than to the physical materiality of the paintings.

### **Other Perspectives on Digital Reproduction**

Other scholars have built upon or challenged Benjamin's ideas on authenticity in the context of digital technologies. Trevor Fawcett's exploration of art reproduction emphasizes the inherent limitations of reproductions in capturing the true essence of the original artwork. He argues that reproductions, regardless of their accuracy, are ultimately illusions that fail to pass on the material and empirical qualities of the original work. The light projection of the *Harvard Murals* can be seen as an attempt to address the illusionary aspect of reproduction, as it does not claim to be the original, and acknowledges the impossibility of a full restoration of the material authenticity of the faded murals.

Boris Groys offers a more optimistic perspective on digital reproduction, as he argues that in the digital age, authenticity is not necessarily tied to materiality, but to its presence and circulation within digital networks. Groys contends that digital reproductions can create new forms of originality, rather than diminishing authenticity. Following his theory, the digital projection should be seen as a new original artwork in its own right, that exists alongside physical murals and interacts with them to create a new experience. This perspective challenges traditional notions of authenticity, as it suggests that a digital intervention does not diminish from the original, but instead contributes to it and its relevance in a contemporary context.

On the other hand, David Joselit emphasizes the role of global networks in shaping the value and meaning of artworks in the digital age. He states that nowadays, the significance of an artwork is not dependent of its physical presence, but of its ability to engage with and be disseminated through digital platforms. From this standpoint, it can be stated that the projection engages with contemporary audiences in new ways, as it does not simply restore the original visual experience, but also brings a broader dialogue on art, technology and

preservation, thus contributing on the relevance and the accessibility of the murals in a digital age.

The research of Leonore Tissen and Mané van Veldhuizen on the use of facsimiles in museums offers a nuanced perspective on the role of reproductions in contemporary art practice. They argue that facsimiles, when used appropriately, can enhance the viewer's understanding and appreciation of the original artwork, providing valuable educational benefits. As the digital projection can be understood as a form of facsimile, not in the sense of a physical copy, but as the digital technique that restores the original experience, this would mean that a different kind of authenticity is attained. The projection not only coexists with the original murals, but it also gives a new value to them.

### **Conservational Point of View**

The restoration of the *Harvard Murals* by use of digital light projection presents a relatively pioneering approach to art conservation that raises questions about the nature of authenticity in restored artworks. In this case, the traditional methods of restoration, such as repainting or retouching with pigments as close to the original materials as possible, were set aside in favour of digital light projection as an innovative technique. The decision to use this technique stresses a shift in conservation ethics, namely one that prioritizes the preservation of the intention of the artist over the material integrity of the physical object. In "Light Repairs: A Roundtable on the Restoration of Mark Rothko's Harvard Murals", a discussion is held between curators and conservators, some of them taking actively contributing to the restoration project. One important question that is asked during the discussion is: Should the light projection not be shown on itself, without using the canvas of the original work? The argument behind this question was that there might be little left of the original paintings, which was repudiated, as there still important aspects like the brushwork and the painted edges present.<sup>76</sup> On the other hand, it was concluded that the light slightly flattens the paintings and causes a loss of the visibility of the many layers that Rothko painted, which devalues the typical impression of inner light that Rothko is known for.<sup>77</sup> However, the discussion highlights that this digital approach aligns closely with Rothko's own intentions, as the technique respects Rothko's original vision in the best way possible, while acknowledging the inevitable decay of material components. The project offers a solution for this decay, and it was executed very well.

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<sup>76</sup> Bois et al., "Light Repairs."

<sup>77</sup> Bois et al., "Light Repairs."

## **Conclusion: Restoring and Preserving the Aura**

The digital projection used to restore the *Harvard Murals* offers a compelling case study in the evolving concept of authenticity in art. By using light projectors to restore the original colours of the murals, the project enters the complex area between preserving the material authenticity of the murals and restoring the conceptual and contextual authenticity. From a material perspective, the projection does not alter the physical surface of the murals, thus preserving their original state. However, the fact that the faded murals are overlaid with digitally restored colours makes this project ambiguous, since the projection creates a new experience that is both connected to and distinct from the original artwork. Conceptually, the projection aligns with Rothko's intentions, as it restores the emotional and spiritual impact that the faded murals can no longer convey on their own. In this sense, the projection can be seen as a successful restoration, preserving the intended viewer experience, even if the material authenticity has been compromised, apart from providing the exact same authentic feeling, as the limitations of the technique forces to make choices. Contextually, the projection respects the original setting of the murals, allowing them to function within the architectural space for which they were designed. This approach maintains the relationship between the murals and their environment.

Through the lens of Walter Benjamin's theory of the aura, the digital projection can be seen as both preserving and transforming the murals' authenticity. While it revives the emotional impact that is central to Rothko's artistic intent, it also creates a new kind of experience that is distanced from the 'here and now' of the original artworks. Contemporary scholars like Boris Groys and David Joselit offer additional perspectives that suggest the potential for digital reproductions to create new forms of authenticity in the digital age. In this context, the project can be understood not as a diminishment of the original authenticity of the murals, but as an innovative approach to reinterpret Rothko's vision for contemporary audiences. The digital projection on Rothko's Harvard Murals contributes to the preservation of the artwork's aura, not by attempting to return to a lost original, but by acknowledging the evolving nature of authenticity in the age of technological reproduction. This approach offers a model for how contemporary conservation practices can navigate the challenges of preserving the emotional and experiential impact of artworks, ensuring their relevance and resonance for future generations.

## Case study: *Monochrome Bleu, sans titre (IKB 63)*

### Introduction

The second case study will consider the painting *Monochrome Bleu, sans titre (IKB 63)* by Yves Klein, that is currently part of the exhibition *Delinking and Relinking*. For this reason, it is interesting how this painting could contribute to making art accessible for a broader audience, but retain its authentic experience or aura, which is a very important aspect of this monochrome painting. The starting point of this case study will be a potential digital scan of *IKB 63*, which can be used for multiple other purposes, which leads to answering the sub-question: How can a potential digital scan of *Monochrome Bleu, sans titre (IKB 63)* by Yves Klein contribute to restoring and preserving the authentic experience or the aura of the artwork? Firstly, just as in the previous case study, a general analysis on the painting will be conducted, after which the positive and the negative aspects of a potential digital scan of *IKB 63* will be analysed. This is followed by clarifying Yves Klein's intention and the relationship to the requirements of a digital scan for it to be successful. Subsequently, Walter Benjamin's theory on the aura will be discussed, as well as the responses by other authors, and will again be used to test the practicability of a digital scan maintaining authenticity. By way of conclusion, the outcome of testing the practicability will be discussed with both the possibilities and the difficulties.

### Analysis of the Painting

The painting *Monochrome Bleu, sans titre (IKB 63)* was made in 1959 by the French artist Yves Klein, who was known for his innovative use of colour.<sup>78</sup> In research which is focused on the acquisition of the painting by the Van Abbemuseum in 1964, it is described how the director at the time, Jean Leering, proposed to acquire multiple paintings from cognate art movements as a unity, instead of assessing the originality of the individual paintings.<sup>79</sup> The acquisition of the painting was closely connected to the museum policy Leering was aiming to execute, in which *Monochrome Bleu* functioned as a representative of the "Nouvelles tendances."<sup>80</sup> Besides, the painting should incite discussion among the different groups within the museum audience, a process of realization that was also very important motive of Yves Klein.<sup>81</sup>

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<sup>78</sup> Van Abbemuseum, "Monochrome bleu,"

<sup>79</sup> Bonnet-Bekkema, "Zonder titel," 11.

<sup>80</sup> Bonnet-Bekkema, "Zonder titel," 18.

<sup>81</sup> Bonnet-Bekkema, "Zonder titel," 21.

The painting measures a length of 92,4 centimetres and a width of 73,3 centimetres, and it is dominated by a vibrant ultramarine-blue, which he created himself by developing a binder that preserved the brightness of pure pigment.<sup>82</sup> This blue transcends merely the application of colour, as the intense and luminous hue evokes a sense of infinity and immateriality, creating an immersive experience. At first sight, and especially from a digital image of the painting, the surface of the painting seems to be flat and smooth, yet a rich texture can be observed when it is viewed from a different angle (see figure 12). Klein achieved this texture by applying the paint with a roller, so that it became a uniform, velvet-like surface that is matt and evenly, as the composition “must be highly effaced, intensely worked, strong, and serious, in order to permit the display in all its splendor.”<sup>83</sup> As there are no brushstrokes or interruptions visible, the result is an expansive field of colour that directs the attention of the viewer away from any representational content, which makes the viewer focus on the experience of the colour. In comparison to the *Harvard Murals*, the colour of *Monochrome Bleu* did not fade as much due to a special varnish, consisting of alcohol, acetone and vinyl resin, which allowed for the present museum public to view the painting and have the same experience as to when Klein made the painting.<sup>84</sup>

Currently, *Monochrome Bleu* is on view in the Van Abbe Museum in the exhibition *Delinking and Relinking*, which is a multi-sensorial exhibition that aims to make art as accessible as possible for people with disabilities. The painting is placed in a room with paintings by among others Piet Mondriaan and Jan Schoonhoven, and is protected by a transparent case. It is not mentioned why this measure was taken; possibly it was done for conservational reasons; or for protection against vandalism, as many paintings with large, coloured fields have been destructed in the past. As Klein made many monochromes in the IKB series, one might question the importance of the individual monochromes, but in argument of this the metaphor of identical twins can be used: although the paintings may look like one another, they both have their own identity.<sup>85</sup>

## Application to the Theoretical Framework

### A Potential Digital Scan

The preservation of Yves Klein’s *Monochrome Bleu, sans titre (IKB 63)*, facilitates relevant questions for art conservationists. In this case not necessarily concerning the deterioration of

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<sup>82</sup> Van Abbemuseum, “Monochrome bleu,”

<sup>83</sup> Van Abbemuseum, “Monochrome bleu,”; Charlet, *Yves Klein*, 60; Klein, *Overcoming the Problematics*, 16

<sup>84</sup> Klein, *Overcoming the Problematics*, 51.

<sup>85</sup> Charlet, *Yves Klein*, 70.

the painting, but more in terms of enlarging the public that has access to it, as the painting is part of an exhibition that is focused on accessibility. *Delinking and Relinking* in the Van Abbe Museum is a collection presentation that started in September 2021, still in times of the pandemic, and will last until June 2026.<sup>86</sup> Apart from other multi-sensory tools, such as braille, cards with scents and audio-fragments, for several artworks in the exhibition tactiles were made, which allowed (partially) blind people to touch them and feel the paintings. It is interesting to consider whether making a tactile from a monochrome painting could add to its value, as it has more texture than one might think initially. It would at least add to Klein's idea of creating an open window to freedom, as a broader public would be able to experience the painting. This painting, that is part of Klein's exploration of immateriality through his patented International Klein Blue (IKB) of which he painted a series, is namely the manifestation of the intention to create a sense of infinity. With the advance of the digital age, the prospect of creating a digital scan of *IKB 63* offers interesting possibilities for preservation, education and accessibility. However, a potential technological intervention also raises significant concerns on maintaining the authenticity of the painting.

One of the primary advantages of digitally scanning *IKB 63* is that by creating a digital replica, the Van Abbe Museum could make the painting accessible to a global audience. Digital reproductions can be shared online, included in virtual exhibitions, and used in educational programs. It thus allows individuals who may never have the opportunity to visit the museum in person to engage with Klein's work. Immersive experiences, such as virtual reality (VR), could even allow viewers to experience *IKB 63* in a simulated environment that is designed to closely mirror the original spatial context of the painting. In addition to accessibility, a digital scan offers potential to preserve and protect the work from the inevitable deterioration over time, even though this might not be visible yet. Klein's combination of pigment and binder is known to be sensitive to environmental factors such as light, humidity and temperature. A high-resolution digital scan could capture the painting in its current state, providing a detailed record that has an invaluable function for future conservation efforts. Moreover, a digital scan could facilitate study and analysis by art historians, conservators, and restorers, without requiring physical access to the artwork, thereby reducing the risk of damage.

However, the downsides of making a digital scan of *IKB 63* are equally significant and complex. One of the main concerns is the question whether a digital reproduction can ever

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<sup>86</sup> Van Abbe Museum, "Delinking and Relinking."

truly capture the essence of Klein's work. His painting is not just about colour, it is about his attempt to evoke the immaterial and the infinite. The unique properties of the painting, like its depth, luminosity and the way it interacts with light, are integral to the viewer's experience. A digital scan, no matter how advanced, may struggle to replicate such qualities fully, leading to a loss of the artwork's material authenticity. Furthermore, the notion of contextual authenticity might become at risk here. Klein's art was intended to be experienced in a specific setting, where the physical presence of the painting, the space and the ambient conditions of the space all contribute to the perception of the viewer. A digital reproduction could be viewed almost anywhere nowadays, and thus may detach the artwork from its setting.

### **Preserving Klein's Intent**

To assess how a digital scan of *IKB 63* might contribute to preserving its authenticity, an understanding of Yves Klein's artistic intentions is necessary. Klein's work is deeply rooted in the concept of immateriality and the infinite, which manifested in his development of International Klein Blue (IKB). His monochrome works, particularly the IKB-series, were not merely about the colour blue, as they represented a transcendence of materiality and aimed to evoke an experience of what he called 'the void.' The paintings were meant to be a gateway to such a spiritual contemplation. The fact that Klein has a strong emphasis on achieving a state of immateriality suggests that the conceptual authenticity of *IKB 63* might be more important than its material authenticity. However, the specific shade of blue, which Klein himself developed and patented, proves to be a critical component of the artwork's authenticity. The success of a potential digital scan thus depends on whether it can faithfully capture the unique ultramarine colour, as it would then preserve both the material and the conceptual aspects of authenticity.

### **Walter Benjamin's Aura**

Walter Benjamin argued that mechanical reproduction leads to the loss of an artwork's aura, which he defined as its unique presence in time and space, or in other words its here and now. According to him, the aura is tied to the original context of the artwork, which includes its materiality and its historical testimony. Benjamin's theory of the aura and the implication of technological reproduction provide a critical lens for examining these aspects, because it means that the loss of the aura of the original in a digital scan is inevitable. The aura will always be diminished in the age of digital reproducibility, because of the possibility of mass-producing reproductions, which cause them to be placed in a context far from the original.

This approach is central to understanding the possible impact of digital reproductions on Klein's *IKB 63*.

### **Other Perspectives on Digital Reproduction**

Trevor Fawcett agrees to Benjamin, in the sense that with a digital scan, he fears the loss of tactile and spatial qualities that are integral to the original experience. He emphasises the significance of an artwork's physicality and context in conveying its meaning. According to Fawcett, the ultimate purpose of a digital scan is for educational benefits, as it will most definitely fail to get a hold of the true essence of the original artwork. Besides Fawcett is not convinced that a digital scan could copy the material aspects of *IKB 63*, such as depth, texture and luminosity.

These rather pessimistic views are challenged by other scholars, like Boris Groys, who argues that with a digital reproduction the original artwork is not just copied, as it creates a new original in the digital realm. He suggests that in the digital age, authenticity might be less about materiality and more about the presence and circulation of the artwork within digital networks. This perspective implies that a digital scan of *IKB 63* might not merely be a reproduction, but a new original that carries its own authenticity within the digital realm. This aligns with Klein's interest in immateriality and the infinite, suggesting that the digital reproduction might not just preserve the artwork's authenticity, but transform it into something new.

Similarly, Joselit emphasizes the role of digital circulation in redefining the value and significance of artworks. Joselit's notion of saturation insinuates that the more an image or artwork is circulated, the more valuable it becomes. This view supports the idea that a digital scan of *IKB 63* could enhance the authenticity of the painting, by expanding its reach, which allows more people to engage with Klein's vision on the infinite. He states that the developments of digital reproduction techniques might bring new capacities of the artworks to the surface.

The research by Leonore Tissen and Mané van Veldhuizen might be most in line with the potential digital scan of *IKB 63*, as they offer a contemporary take on the issue, stating that digital reproductions can serve as valuable tools for preservation and presentation. They argue that facsimiles, when used appropriately, can retain a different kind of authenticity that complements the original artwork. If Yves Klein's painting would be digitally scanned, a lot of other possibilities could be realized, such as using the digital scan to understand the texture of the painting and create a three-dimensional facsimile with it. This option would be an

interesting addition to the exhibition *Delinking and Relinking*, as it would contribute to increase the accessibility of Klein's artwork. Besides, an immersive experience could be created, in which at best the viewer would be literally engulfed in the painting, which would be the ultimate way to express the intention Yves Klein had with his paintings.

### **Different categories of Authenticity**

Understanding the concept of authenticity in the context of art is essential to be able to explore how digital reproductions can impact the viewer's experience of an artwork. As previously discussed, the concept of authenticity can be divided into different categories; material, conceptual, and contextual authenticity, as outlined by Ernst van de Wetering. Material authenticity relates to the original form and substance of the artwork, while conceptual authenticity is connected to the artist's intent, and contextual authenticity refers to the original site or environment of the artwork. By elaborating on each category, it can be determined in how far the authenticity could be maintained in a possible digital scan of *IKB 63*.

With preserving the material authenticity of the painting through digital reproduction, a challenge is presented in accurately capturing and rendering the unique shade of International Klein Blue. The visual experience of IKB is not just about colour, but also about texture, depth, and the way the pigment interacts with light. It cannot be said with certainty that a digital scan succeeds in replicating these qualities. Furthermore, Ernst van de Wetering's distinction between material and conceptual authenticity is particularly relevant here. While the digital reproduction might preserve the conceptual authenticity by conveying the idea of the infinite, it may fall short in preserving the material authenticity. However, as Cesare Brandi noted, reproductions should focus on preserving the process of the artwork, rather than creating an identical copy. In this light, the digital scan could be seen as part of an ongoing process of preserving Klein's legacy, even if it might not be able to fully replicate the material qualities of the original.

Contextual authenticity refers to the artwork's original environment and how it was intended to be experienced. In *Overcoming the Problematics of Art: The Writings of Yves Klein*, Klein describes extensively how the exhibition space was prepared and what choices were made for the material presentation of the exhibition.<sup>87</sup> This proves that he was very conscious of creating a spiritual experience for the viewer, not only with the painting itself, but also with the space in which it was placed. He was aware that these factors, for example

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<sup>87</sup> Klein, *Overcoming the Problematics*, 50.

lighting, play a significant role in how the artwork is perceived. A digital reproduction could, with the help of art-historical research, be able to recreate or innovate these contexts, offering new ways to experience *IKB 63*, in virtual or augmented reality environments. Such technologies could allow for the reconstruction of the original exhibition settings, or the creation of entirely new contexts that align with Klein's vision.

### **Conclusion: Restoring and Preserving the Aura**

In conclusion, the potential digital scan of Yves Klein's *Monochrome Bleu, sans titre (IKB 63)* presents both promising possibilities and significant challenges in preservation, accessibility, and authenticity. This case study highlights the complexity of preserving the essence of an artwork that is fixed in concepts of immateriality and infinity. While a digital scan could significantly enhance accessibility, allowing a broader audience to engage with the painting and potentially offering immersive experiences through virtual reality, it also risks losing the very qualities that define the impact of the artwork. Klein's intention to evoke a spiritual experience is intricately tied to the material qualities of the painting, such as its texture, depth, and interaction with light, that is elements that are challenging to digitally replicate.

Furthermore, the discourse on authenticity, as discussed by scholars like Walter Benjamin and Trevor Fawcett, underscores the inherent limitations of digital reproduction. Benjamin's theory of the aura suggests that the unique presence and historical context of an artwork are inevitably diminished in the process of reproduction. Fawcett's concerns align with this, emphasizing the potential loss of tactile and spatial authenticity. However, contrasting perspectives, such as those of Boris Groys and David Joselit, introduce the idea that digital reproductions can create new forms of authenticity within the digital realm. They argue that the value of an artwork might be redefined by its circulation and presence in digital networks, thus aligning with Klein's own interest in transcending materiality.

The discussion on different categories of authenticity, material, conceptual, and contextual, further complicates assessing the impact of a digital scan. While a digital reproduction might preserve Klein's conceptual intent by conveying the idea of the infinite, it could struggle to maintain the material authenticity that is central to the viewer's experience of the original painting. Contextual authenticity also presents a challenge, as the original spatial and environmental conditions that Klein carefully curated are integral to the artwork's impact. Nevertheless, with advanced technologies like virtual and augmented reality, there is potential

to recreate or innovate these contexts, offering new ways to experience *IKB 63* that might align with Klein's vision.

Ultimately, while a digital scan of *Monochrome Bleu* offers exciting possibilities for expanding access and preserving Klein's legacy, it also raises important questions about the preservation of authenticity and the viewer's experience. The success of such a digital technique will depend on the ability to balance these considerations, ensuring that the reproduction respects the original artwork's integrity, while embracing the opportunities presented by digital technology.

## Conclusion

### Research question

At the beginning of this thesis, the following research question was introduced: How can digital technologies contribute to restoring or preserving the authentic experience or ‘aura’ of a colour-field painting? The research finds that digital technologies offer both opportunities and challenges in the preservation of art. For Mark Rothko's *Harvard Murals*, digital projection successfully navigates the complexities of authenticity by preserving the emotional and spiritual impact of the artwork, even as it introduces a new kind of experience, which eventually blends preservation with innovation. This approach highlights the potential for digital technologies to contribute to the preservation of an artwork's aura. In contrast, the potential digital scan of Yves Klein's *IKB 63* raises more complex questions about the preservation of authenticity. While digital reproduction could enhance accessibility and offer new ways to engage with Klein's work, it also risks compromising the material and contextual authenticity central to the viewer's experience. The research concludes that the success of digital techniques will depend on the decision-making that will be executed in such a restoration process. Overall, the findings highlight the need for a nuanced approach to art preservation in the digital age, one that carefully considers the balance between maintaining material, conceptual, and contextual authenticity and embracing the possibilities of digital innovation.

### Main Findings

This research has delved into the complex relationship between artistic intention, authenticity, and the evolving role of digital technologies in art preservation, using Mark Rothko's *Harvard Murals* and Yves Klein's *Monochrome Bleu, sans titre (IKB 63)* as case studies. The findings underline the balance that is required in contemporary conservation practices, particularly in a digital age, as the boundaries between preserving the materiality of an artwork and maintaining its conceptual and contextual impact become increasingly faint.

### Harvard Murals

Mark Rothko's artistic intentions were based on the emotional and spiritual experiences that his works were designed to evoke. His meticulous use of colour, spatial dynamics, and involvement in the display of his paintings within museum spaces, were all meant for the viewer's engagement, so that the artwork connected directly to human emotions. In the

context of the *Harvard Murals*, the digital projection used to restore the original colours of these paintings serves as a compelling case study in navigating the complexities of authenticity in art.

The restoration project for the *Harvard Murals*, which involved overlaying faded murals with digitally restored colours through light projectors, presented a nuanced approach to authenticity. On one hand, the project preserved the material authenticity of the murals by not altering their physical surface, thereby maintaining their original state. On the other hand, the projection created a new experience that is simultaneously connected to and distinct from the original artwork, blurring the lines between preservation and innovation.

Conceptually, this approach aligns with Rothko's intentions, by restoring the emotional and spiritual impact that the faded murals could no longer convey independently. The digital projection thus succeeds in preserving the intended viewer experience, even if it compromises the material authenticity of the murals. Contextually, the projection respects the original setting of the murals, allowing them to function within the architectural space for which they were designed. This careful attention to context ensures that the relationship between the murals and their environment is maintained, preserving a key aspect of Rothko's vision.

Walter Benjamin's theory of the aura, which states that the unique presence and historical context of an artwork are diminished through mechanical reproduction, offers a perspective to which the digital restoration of the *Harvard Murals* can be reflected. While the projection revives the emotional impact that is central to Rothko's intent, it also creates a new kind of experience that is distanced from the original 'here and now' of the artwork. However, contemporary scholars like Boris Groys and David Joselit provide alternative perspectives, suggesting that digital reproductions have the potential to create new forms of authenticity in the digital age. In this context, the project can be understood not as a diminishment of the murals' original authenticity, but as an innovative approach to reinterpret Rothko's vision for contemporary audiences.

The digital restoration of the *Harvard Murals*, therefore, contributes to the preservation of the artwork's aura, not by attempting to return to a lost original, but by acknowledging the evolving nature of authenticity in the age of technological reproduction. This approach offers a model for how contemporary conservation practices can navigate the challenges of preserving the emotional and experiential impact of artworks, ensuring their relevance and resonance for future generations.

## Monochrome Bleu, sans titre (IKB 63)

Yves Klein's artistic intention, characterized by the use of his unique International Klein Blue colour in his monochromes, sought to evoke a sense of immateriality and infinity. Klein's innovative approach extended beyond painting to include performance art, emphasizing the importance of the process of creation and challenging viewers to immerse themselves into the unknown. Klein's legacy, particularly in the context of *Monochrome Bleu, sans titre (IKB 63)*, presents both opportunities and challenges in the digital age, especially concerning the preservation of authenticity.

A potential digital scan of *IKB 63* offers the possibility of expanding accessibility and preserving Klein's painting. It could make the painting accessible to a broader audience, and allows for immersive experiences through virtual reality and other digital platforms. This aligns with Klein's intention to create a spiritual experience, offering new ways for viewers to engage with the painting's immateriality and infinite nature.

However, the digital reproduction of *IKB 63* also raises significant challenges, particularly in preserving the qualities that define the artwork's impact. Klein's intention to evoke a spiritual experience is expressed in the material qualities of the painting, such as its texture, depth, and interaction with light. Such elements are challenging to digitally replicate, and it is thus important to note that a digital scan may struggle to maintain the material authenticity that is central to the viewer's experience of the original painting.

The discourse on authenticity, as discussed by scholars like Walter Benjamin and Trevor Fawcett, highlights the inherent limitations of digital reproduction. Benjamin's theory of the aura suggests that the unique presence and historical context of an artwork are inevitably diminished in the process of reproduction. Fawcett's concerns align with this, emphasizing the potential loss of tactile and spatial authenticity in digital reproductions. However, contrasting perspectives from Boris Groys and David Joselit suggest that digital reproductions can create new forms of authenticity. They argue that the value of an artwork might be redefined by its circulation and presence in digital networks, which is in line with Klein's own interest in transcending materiality.

The discussion on different categories of authenticity, namely material, conceptual, and contextual, further complicates assessing the impact of a digital scan on *IKB 63*. While a digital reproduction might preserve Klein's conceptual intent by conveying the idea of the infinite, it could struggle to maintain the material authenticity which is central to the original painting. Contextual authenticity also presents a challenge, as the original spatial and

environmental conditions Klein carefully curated are crucial to the artwork's impact. However, with advanced technologies like virtual and augmented reality, there is potential to recreate or innovate these contexts, offering new ways to experience *IKB 63*.

### Acknowledging of Limitations

While this research offers valuable insights into the evolving role of digital technologies in art preservation, several limitations must be acknowledged. First, the scope of the study is largely confined to the specific cases of Mark Rothko's *Harvard Murals* and Yves Klein's *Monochrome Bleu, sans titre (IKB 63)*. These works represent only a small fraction of the diverse landscape of modern and contemporary art. The conclusions drawn from these case studies may not be fully applicable to other artworks, particularly those with different material compositions, historical contexts, or artistic intentions.

Additionally, the research heavily relies on theoretical frameworks such as Walter Benjamin's theory of the aura and contemporary perspectives from scholars like Boris Groys and David Joselit. While these theories provide a foundation for analysing the impact of digital reproduction on authenticity, they are not without their critics and may not encompass all aspects of the complex relationship between art, technology, and experience of the viewer. The interpretations of authenticity presented here are thus shaped by specific academic perspectives, which may limit the applicability of the findings to other approaches in art conservation.

Another limitation lies in the exploration of digital technologies themselves. The study discusses the potential of virtual and augmented reality, digital projection and digital scanning, but does not delve into the technical specifics or the quality of these technologies in different applications. The effectiveness of digital reproductions in preserving the emotional impact of artworks is likely to depend on the fidelity of the technology used, which is a variable that this research does not fully address. Future research could benefit from a more detailed examination of the technological aspects.

Lastly, the study is constrained by the current state of technology and theoretical discourse, both of which are rapidly evolving. As new technologies emerge and theories of authenticity and preservation continue to develop, the findings of this research may become outdated. This highlights the importance of ongoing research and adaptability in the field of art conservation, particularly in an era where digital innovations are constantly reshaping the boundaries of what is possible.

## Valid Results

While these limitations might seem to constrain the scope of this research, they actually enhance its value by highlighting the nuanced and evolving nature of the issues that were discussed.

Firstly, the focus on specific case studies, Mark Rothko's *Harvard Murals* and Yves Klein's *Monochrome Bleu*, might appear narrow, yet it provides a focused examination that is essential for understanding how digital technologies interact with particular artworks. By concentrating on these two cases, the intricate details of how digital reproductions impact the emotional qualities that are central to each artist's intention could be explored more profoundly. This deep analysis offers a model for how similar studies could be conducted with other artworks, providing a foundation for future research that could extend these findings to a broader range of cases.

Moreover, the reliance on theoretical frameworks such as Walter Benjamin's theory of the aura, along with the perspectives of Boris Groys and David Joselit, anchors the research. While these theories are not in-depth, they provide a structured lens through which to interpret the impact of digital reproduction on authenticity. The limitations inherent in these frameworks are useful, because they reveal the boundaries of current theoretical understanding, inviting further inquiry and the development of new models that might better accommodate the complexities introduced by digital technologies. This, in turn, encourages an ongoing dialogue in the field, which encourages intellectual growth and innovation.

The discussion of digital technologies, while not exhaustive, serves as a crucial starting point for considering the practical implications of their use in art conservation. By identifying the challenges of digitally replicating texture, depth, and colour, the research stresses the importance of technological precision and fidelity in preserving the integrity of the original artworks. These limitations emphasize the need for further technical research and development, pushing the field towards more solutions.

Finally, the acknowledgment of the rapidly evolving nature of technology and theoretical discourse highlights the importance of flexibility and adaptability in art conservation. This limitation is valuable, because it positions the research as a snapshot in an ongoing process, rather than as a definitive statement. It underlines the necessity for continual reassessment and adaptation as new technologies emerge and as our understanding of authenticity and preservation evolves. This approach ensures that the research remains relevant to future developments.

## Future research

Future research in the field of digital art preservation, particularly concerning the works of artists like Mark Rothko and Yves Klein, presents an intriguing field that is ready to be further explored. Building on the findings of this thesis, future studies into several critical areas that have emerged to deepen our understanding of how digital technologies impact the preservation, interpretation, and experience of art, especially in relation to concepts of authenticity, materiality, and the engagement of viewer.

One significant direction for future research involves expanding the scope beyond the specific case studies of Rothko and Klein to include a broader range of artists and artworks. This could involve examining how digital preservation techniques are applied to different artistic mediums, such as sculpture, installation art, or mixed media works. Investigating how the principles of authenticity and materiality are involved in these contexts would provide a more comprehensive understanding of the challenges and possibilities inherent in digital preservation. Additionally, comparative studies across different cultural and historical contexts could reveal how digital technologies are being adapted to preserve artworks from diverse traditions and periods, offering insights into the global implications of these practices.

Another important area for further research is the development and application of advanced digital technologies in the preservation of art. The current study highlights the challenges of replicating the material qualities of artworks, such as texture, depth, and interaction with light, in digital reproductions. Future research could focus on the potential of emerging technologies like 3D printing, augmented reality (AR), and virtual reality (VR) to overcome these challenges. For example, exploring how 3D printing could be used to create physical replicas of artworks that retain the tactile qualities of the originals, could open new possibilities for preservation and accessibility as seen in the case study of *Monochrome Bleu, sans titre (IKB 63)*. Similarly, AR and VR technologies could be used to create immersive environments that faithfully reproduce the original settings and contexts of artworks, thereby preserving their contextual authenticity, while offering new ways for audiences to engage with them.

The ethical implications of digital art preservation also need further investigation. As digital reproductions become more sophisticated and widely used, questions arise about the ownership, control, and distribution of these digital assets. Future research could examine the legal and ethical frameworks that govern the use of digital reproductions, particularly in relation to issues of copyright, cultural heritage, and the commercialization of art. This could

include exploring how artists' intentions are protected in the digital realm, as well as how institutions and collectors navigate through the complexities of digital ownership and authenticity.

Theoretical exploration of the concept of authenticity in the digital age is another rich area for future research. This research has drawn on theories by Walter Benjamin, Boris Groys, and David Joselit, among others, to explore how digital reproductions challenge traditional notions of authenticity. However, the rapidly evolving nature of digital technology and its integration into art conservation suggests the need for ongoing theoretical development. Future research could delve deeper into how digital reproductions create new forms of authenticity and how these might be understood in relation to existing theories. This could involve interdisciplinary approaches that bring together insights from art history, philosophy and media studies to develop a more nuanced understanding of authenticity in the digital era.

Finally, there is significant potential for research that engages directly with the practical aspects of digital art preservation. This could involve collaborations between scholars, conservators, technologists, and artists to develop and test new digital preservation techniques and methodologies. Such practice-based research could provide valuable insights into the challenges and opportunities of digital art preservation, offering practical solutions that are informed by both theoretical considerations and technological advancements. Additionally, this research could involve case studies of institutions, that are currently implementing digital preservation strategies, providing a closer look at how these techniques are applied in practice and how they impact the preservation and interpretation of artworks.

In conclusion, the future of digital art preservation is a rich field for research, offering opportunities to expand our understanding of how digital technologies can be used to preserve and restore art. By exploring these suggested areas, future research can contribute to the development of more effective, ethical, and innovative approaches to preserving the authentic value of artworks in the digital age.

## Illustrations

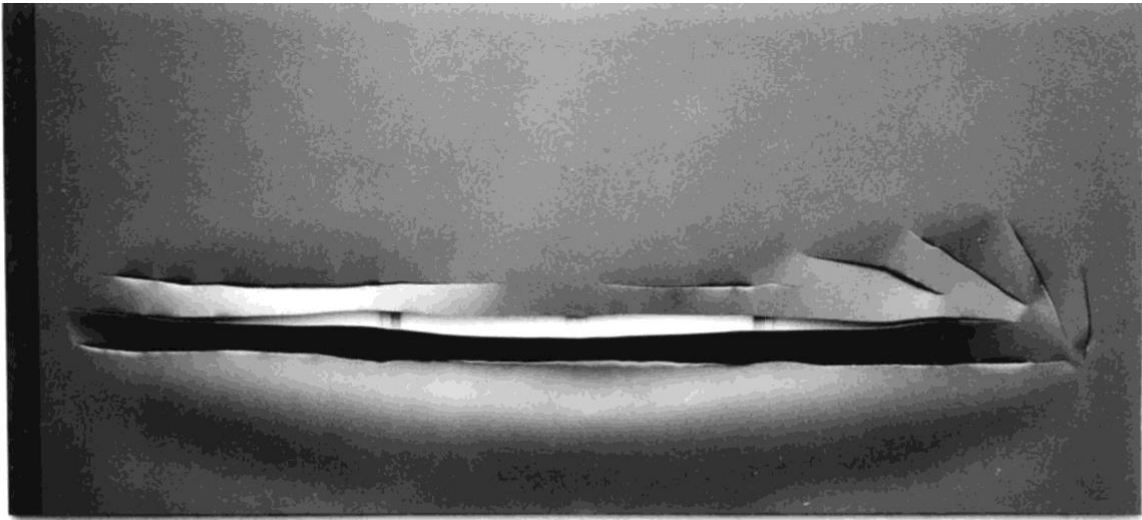


Figure 1. Barnett Newman, slashed *Who's Afraid of Red, Yellow, and Blue III*, 1967-1968, oil paint on canvas, 245 x 543 cm, (Amsterdam, Stedelijk Depot).



Figure 2. Barnett Newman, slashed *Cathedra*, 1951, oil paint and magna paint on canvas, 243 x 543 cm, (Amsterdam, Stedelijk Museum).



Figure 3. Mark Rothko, *Panel One (Harvard Mural Triptych)*, 1962, egg tempera and distemper on canvas, 267,3 x 297,8 cm, (Cambridge, Harvard Art Museums, 2011.638.1).



Figure 4. Mark Rothko, *Panel Two (Harvard Mural Triptych)*, 1962, distemper, egg tempera and acrylic copolymer on canvas, 267,3 x 458,8 cm, (Cambridge, Harvard Art Museums, 2011.638.2).



Figure 5. Mark Rothko, *Panel Three (Harvard Mural Triptych)*, 1962, egg tempera and distemper on canvas, 267 x 243,8 cm, (Cambridge, Harvard Art Museums, 2011.638.3).



Figure 6. Mark Rothko, *Panel Four*, 1962, egg tempera and distemper on canvas, 266,7 x 457,2 cm, (Cambridge, Harvard Art Museums, 2011.638.4).

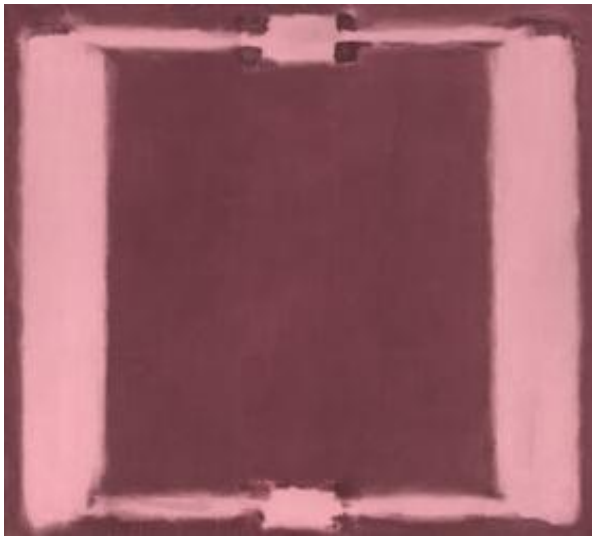


Figure 7. Mark Rothko, *Panel Five*, 1962, egg tempera and distemper on canvas, 266,7 x 297,2 cm, (Cambridge, Harvard Art Museums, 2011.638.5).

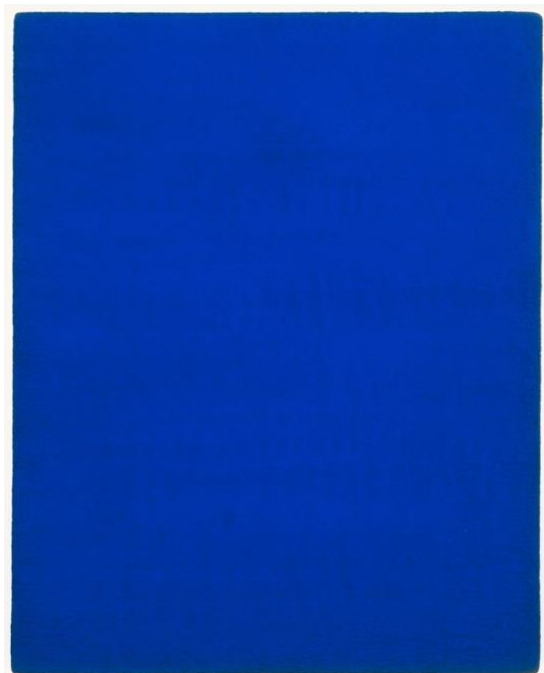


Figure 8. Yves Klein, *Monochrome Bleu, sans titre (IKB 63)*, pigment and synthetic resin on canvas on plywood, 92,4 x 73,7 x 2,6 cm, (Eindhoven, Van Abbe Museum, 192).



Figure 9. Yves Klein, *Anthropometry performance*, using models as living brushes and ultramarine paint (Paris, Galerie internationale d'art contemporain).



Figure 10. Yves Klein, *Leap into the Void*, staged portrait (Fontenay-aux-Roses).



Figure 14. Panel Five as it appeared in 1963.

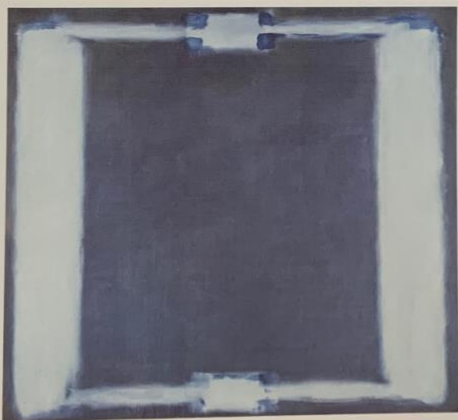


Figure 15. Panel Five as it now appears (1988).

Figure 11. Mark Rothko, *Panel Five*, 1962, egg tempera and distemper on canvas, 266,7 x 297,2 cm, (Cambridge, Harvard Art Museums, 2011.638.5).



Figure 12. Yves Klein, *Monochrome Bleu, sans titre (IKB 63)*, pigment and synthetic resin on canvas on plywood, 92,4 x 73,7 x 2,6 cm, (Eindhoven, Van Abbe Museum, 192).

## Illustrations credits

- Fig 1. Fontein 2013, Ill. 6.
- Fig 2. Van Adrichem 2001, Ill. 11-12.
- Fig 3. Downloaded 11 August 2024. <https://hvr.d.art/o/172716>
- Fig 4. Downloaded 11 August 2024. <https://hvr.d.art/o/173198>
- Fig 5. Downloaded 11 August 2024. <https://hvr.d.art/o/173199>
- Fig 6. Downloaded 11 August 2024. <https://hvr.d.art/o/173200>
- Fig 7. Downloaded 11 August 2024. <https://hvr.d.art/o/173201>
- Fig 8. Downloaded 11 August 2024. <https://vanabbemuseum.nl/en/collection/monochrome-bleu-sans-titre-ikb>
- Fig 9. Charlet 2000, p. 156.
- Fig 10. Weitemeier 2016, p. 50.
- Fig 11. Cohn 1988, Ill. 14-15.
- Fig 12. Photo author, March 7, 2024.

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