

Panoramic and Immersive Media Studies Yearbook

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Edited by
Molly C. Briggs, Thorsten Logge
and Nicholas C. Lowe

Volume 1

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Contents

PIMS Yearbook Editorial Board — IX

Call for the PIMS Yearbook, volume 2, 2025 — XI

Executive Editors' Introduction — XIII

1 Scholarly Essays

Liz Crooks, Melissa Wolfe

Introduction: Panoramas, Immersive Media, and Lost Worlds — 3

Thiago Leitão de Souza

**The *Panorama of Rio de Janeiro* by Victor Meirelles and Henri Langerock:
Exploring the Virtual *Faux Terrain* in a 360° Experience by Game Engines — 5**

Weiling Deng, Sara Velas, Ruby Carlson, Jonathan Banfill

Relocating Shengjing: Traveling Panorama as Theory — 25

Kohki Watabe

**Immersion and Manipulation of Time in *The Legend of Zelda: Breath of the Wild*
(2017) and *The Legend of Zelda: Tears of Kingdom* (2023) — 55**

Nicholas C. Lowe

**Listening to the Aural Heritage of John Banvard's Mississippi Panoramas:
Reflections on Content and an Initial Speculative Re-Enactment — 77**

Julie Boldt, James Elkins, Arthur Kolat, Daniel Weiskopf

**Panoramas as Projections of the Unconscious in Nineteenth-Century
Fiction — 105**

2 Reprints

Molly C. Briggs, Thorsten Logge, Nicholas C. Lowe

Introduction: *La Nature à Coup d'Œil* — 123

Leen Engelen, Gabriele Koller

Robert Barker's Panorama Patent of 1787—Art and Technique Combined — 125

3 Restoration, Management, and Field Reports

Patrick Deicher, Gabriele Koller

Introduction: Conservation and Restoration of Late Nineteenth-Century Panoramas—The Role of the *Faux Terrain* — 137

Gordon L. Jones

The Nine Lives of *The Battle of Atlanta's Faux Terrain*, 1886–2019 — 139

Ulrich Weilhammer

The Panorama *Jerusalem and the Crucifixion of Christ* in Altötting, Germany — 161

4 Visual and Creative Essays

Thiago Leitão de Souza, Nicholas C. Lowe

Introduction: Landscape, Memory and Place — 173

Charles Hood

The Very, Very Lucky Bad Luck of Jan Styka — 175

Chiara Masiero Sgrinzatto

Recreating a Lost World Through Immersive Illustration: A View from Napoli Capodichino — 185

5 International Panorama Council Conference Report & Papers

Molly C. Briggs, Blagovesta Momchedjikova

Introduction: 33rd Annual International Panorama Council Conference at the University of Iowa Museum of Natural History — 199

Jessica Smith

Surrounded with Sights, Showered by Sounds: The Laysan Island Cyclorama — 201

Jack Tamisiea

At the UI Museum of Natural History, a Paradise Not Yet Lost — 213

Gabriele Koller

**A Story of Sad Losses: On the Fates of Some Nineteenth-Century
Panoramas — 225**

Suzanne Wray

The Kilauea Cyclorama: More than a Picture, a “Spectacular Cyclorama” — 239

Christl Lidl

**Virtual Remediation of Lost Panoramas: Developing Dedicated Tools for
Displaying Panoramas in Virtual Reality — 251**

Molly C. Briggs

**Panoramic Inscriptions: Perspectival Typography and Pictorial Lettering in
Immersive Ephemera — 273**

Daniel Jaquet, Sarah Kenderdine

**The Digital Twin of the Panorama of the Battle of Murten: Notes on the
Creation of the World’s Largest Image — 295**

Conference Program — 307

Presentation Abstracts & Author Biographies — 313

6 Reviews

Lisa Stone

Panorama Histories: Insights From Scholars in the Field — 341

Daniela Chico

Beyond the Real: Alchemy, Illusions, and the City of Angels — 351

7 Call for the 2024 Conference

Index — 367

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Call for the PIMS Yearbook, volume 2, 2025

The *Panoramic and Immersive Media Studies* Yearbook (PIMS Yearbook) is the annual yearbook of the International Panorama Council (IPC), published by De Gruyter (DG, Germany). It surveys the historical and contemporary landscape of panoramic and immersive media. This interdisciplinary field includes—but is not limited to—optical and haptic devices; 360-degree paintings; long-form paintings, photography, and prints; dioramas; museum displays; games; gardens; literature; maps; music; printed matter; still and moving images; virtual and augmented reality; and theatrical productions. Whereas the notion of the panoramic describes extensive, expansive and/or all-embracing vistas, immersion refers to porous interfaces between representation and the real, observer and observed, nature and culture, and past, present, and future. Together, the concepts of panorama and immersion have catalyzed time- and space-bending strategies for creating, experiencing, and transforming culture, ideas, and built social space across the arc of human history.

The PIMS Yearbook welcomes contributions from a range of disciplinary perspectives with the understanding that methodologies in the humanities, the arts, the sciences, design disciplines, social sciences, engineering, and other fields contribute important perspectives to the interdisciplinary field of panoramic and immersive media studies.

The IPC is an international organization of panorama specialists committed to supporting the heritage and conservation of extant nineteenth and early-twentieth-century panoramas, and promoting awareness of the medium's history, derivative forms, and contemporary iterations. As a non-government and not-for-profit association subject to Swiss law, the IPC is active in the fields of panorama research, restoration, financing, management, exhibition, and marketing. The PIMS Yearbook succeeds the *International Panorama Council Journal* (IPCJ), a selected proceedings of the annual conferences of the IPC, published 2017–2023.

The PIMS Yearbook is published in full color, in print and open access digital formats.

1 Call for Contributions for v.2, 2025

This open call invites scholarly, creative, and practical contributions in seven areas including scholarly essays (subject to double-blind peer review); visual and creative essays; restoration, management, and field reports; opinion pieces; IPC conference reports & papers (this section open only to IPC conference presenters; papers are subject to single-blind peer review); reviews; and reprints. Contributions may explore a range of ideas in panoramic and immersive media, such as historical and contemporary uses of immersive technologies; innovative methods in preservation and heritage interpretation; tools for applications in museum interpretation and display, contemporary art practices, or educa-

tional settings; exploring contested heritage; and analyzing nationalist and imperialist discourses.

We welcome contributions from IPC members and non-members alike. The PIMS Yearbook is managed by three Executive Editors, a team of Section Editors, and an IPC Editorial Advisory Board. In addition, each issue invites one or more Guest Editors.

Review the complete and most current call for contributions at https://panorama.council.org/en/publications/pims_yearbook

Executive Editors' Introduction

We are pleased to present the first volume of the *Panoramic and Immersive Media Studies Yearbook*. The PIMS Yearbook evolved from the former *International Panorama Council Journal* (IPCJ), a peer reviewed, open access journal that was published from 2017 to 2022 and documents six years of International Panorama Council conference proceedings. The IPCJ was initiated by its outstanding and long-lasting editor-in-chief Seth Thompson.

With the PIMS Yearbook, the IPC is now taking a major step forward without forgetting its roots as an international, interdisciplinary field. Panorama research and the annual IPC conferences bring together scholars, artists, conservators, art lovers, operators of panoramas, and all people interested in panoramic and immersive media.

The inaugural PIMS Yearbook's Scholarly Essays section reflects the topic of the 2023 IPC conference in Iowa City: Panoramas, Immersive Media, and Lost Worlds. All contributions in this section are subject to double-blind peer review. The Reprints section republishes old and hard-to-access material on panoramas and/or immersive media. The section on Restoration, Management, and Field Reports makes room for the coverage of restorative activities or reflections on the operation and management of current panorama endeavors. It can also present field reports of research visits or participant observations. Artistic approaches find a space in the Visual and Creative Essay section. As a core of the IPC activities, the annual conference proceedings will be documented in the IPC Conference Report & Papers section. All papers in this section are single-blind peer reviewed. New and relatively recent publications on panoramas and immersive media will be announced and reviewed in the Reviews section. Future volumes will include a Forum section to explore differing perspectives by presenting opinion pieces on all things panorama and immersive media. Please feel invited to submit your own contributions to this and all other sections for inclusion in volume 2 of the PIMS Yearbook.

The *International Panorama Council Journal* was published open access in order to make the content accessible to all. We believe that access to knowledge should not be restricted and made complicated by paywalls. Thanks to the Open Access Fonds of the University of Hamburg and the Staats- und Universitätsbibliothek Carl von Ossietzky Hamburg, we are happy to present the inaugural issue of the PIMS Yearbook 1/2024 in open access as well.

The executive editors are grateful for all the important work done by the section editors of this volume. The IPC is a family—and the *PIMS Yearbook* starts as a family project. We are more than happy to bring this project to life.

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1 Scholarly Essays

Liz Crooks, Melissa Wolfe

Introduction: Panoramas, Immersive Media, and Lost Worlds

We are grateful for the honor to participate as editors of the scholarly thematic essays section in this inaugural volume of the *Panoramic and Immersive Media Studies* Yearbook. The section draws from the theme of the 2023 International Panorama Council conference *Panoramas, Immersive Media, and Lost Worlds*. The papers come to this topic of lost worlds from a multitude of interdisciplinary and intersectional perspectives, suggesting a very lively and vibrant state of current panorama and immersive media studies.

Situated at the intersection of panorama studies and game engine design, Thiago Leitão's project integrates a game engine into the digital recreation of a now lost nineteenth-century panorama. Doing so enables the viewer/participant to digitally traverse the boundary between painted and lived worlds mediated in physical panoramas by the area of the *faux terrain*—in Leitão's words, that “continuum space, of sorts, that moved the panorama's illusion to immersion.” Part of a larger, on-going project, Leitão imagines the future possibility of introducing multiple participants, enabling a communal experience that would find much dialogue with several other papers in this section.

The paper by Weiling Deng, Sara Velas, Ruby Carlson, and Jonathan Banfill locates itself in downtown Los Angeles in order to travel across space and time to early twentieth-century China. In embracing the vernacular and the global, it manages to give voice to very human actors in a sea of colonizing power without losing sight of either. The paper's attention to the present, lived experience enfold its considerable historical and theoretical content, allowing it to present, as the writers describe, “a thicker, more open, non-prescribed experience.” This goal finds expression not only in the writers' scholarly inquiry, but even more directly in the connections the panorama has made with its local neighborhoods. These authors accept the unwieldy experience of panoramas and the ways in which they entwine contemporary experience with the past and the loss attendant to it. Deng, et al. share their understanding, even embrace, of this multitudinous experience with Nicholas Lowe, whose paper reminds us of the important role performative elements—the musical accompaniment, song, and spoken narration—played in the immersive experience of moving panoramas. Lowe considers a speculative re-enactment of a moving panorama, and invites readers to “sit comfortably” with the lost elements. He suggests activating the creative and generative scaffolding of conjecture and speculation to shape our experience and, indeed, to be candidates as a viable apparatus of inquiry for historical events. He posits

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Melissa Wolfe, Chair, International Panorama Council Conference Scientific Committee, Curator and Head of American Art, Saint Louis Art Museum, Saint Louis, Missouri, USA

a performative method of inquiry for a performative object, and in doing so suggests that such conjectured re-performances might come as close, if not closer, to recovering the original experiences as do more traditional research modes.

Kohki Watabe analyzes two award-winning video games to find a legacy of optical-based immersive techniques associated with film and panoramas operative in contemporary video games that have been built through three-dimensional computer graphics. In close relation to the three previous authors, Watabe finds the level of immersion experienced by the player/participant related to their degree of agency—to the degree that their experience is embodied or, as Deng et al. note in another context, “felt in the body.” Watabe contrasts this bodily immersion with those that “tend to discard elements other than the eyes.” He also analyzes such games for the ways in which they complicate the dynamics of time and space, central elements inherent in issues of loss in the other papers of this section.

Julie Boldt, James Elkins, Arthur Kolat, and Daniel Weiskopf examine the German author Arno Schmidt’s theory that nineteenth-century authors were unconsciously influenced by panoramas. Their paper posits that not only panoramas’ expansive views but also the experience of their physical constructions provided the “optical unconscious” for Romantic writers of the era. As they note, panoramas have been widely studied in myriad fields, but less so in literature. Their paper opens up a major direction for future panorama studies.

As a group, these papers constitute an exemplar of the ways in which insights and perspectives from a dynamic multitude of fields can be brought to bear on panoramic and immersive media studies. Conversely, panoramic and immersive media studies contribute in multiple directions to broader fields of technical- and humanities-based inquiry. Together, these papers set the tone of creativity, rigor, and diversity to be found throughout this inaugural volume of the *Panorama and Immersive Media Studies Yearbook*.

Thiago Leitão de Souza

The *Panorama of Rio de Janeiro* by Victor Meirelles and Henri Langerock: Exploring the Virtual *Faux Terrain* in a 360° Experience by Game Engines

Abstract: This paper is related to the ongoing research project, *The Immersive Experience in 360°: Investigation, Representation and Digital Immersion in the City of Rio de Janeiro in the Nineteenth and Twentieth Centuries*, developed at Universidade Federal do Rio de Janeiro, Brazil, and presented annually at the International Panorama Council (IPC) conferences since 2018. The present work will investigate a game engine experience in a digital 360° panorama.

The *faux terrain* was one of the main characteristics of the 360° immersive experience of panoramas in the nineteenth century. This term defines the large, three-dimensional scenario built just below a panorama's viewing platform and composed of real objects related to the painting's theme. It was a transitional space that connected the painted space to the visitors' real-world space—a continuum space, of sorts, that moved the panorama's illusion to immersion. The question that drives this paper is how a twenty-first century 360° immersive experience could be developed that replicated the effect of this continuum space. The virtual world's promenade of today is not restricted to the participant's gaze anymore. The virtual traveler can easily operate with his body and reach out to move with six degrees of freedom by either translating linearly or rotating axially throughout the whole scenario. In this way, the *faux terrain* is still active in the simulation for a viewer's gaze, and it also can be improved with the virtual traveler's body movements in different levels. This paper will investigate 360° immersive experiences through different virtual *faux terrain* that we have developed as part of ongoing improvements to our *Panorama of Rio de Janeiro* by Victor Meirelles and Henri Langerock game engine. Several digital and analogical systems of representations will be applied, including computer graphics techniques, 3D models, 3D renderings, and sketches, and some programming codes will be also investigated.

Acknowledgments: We are grateful for the financial support of PIBIC and PIBIAC scholarship programs which are both offered in Universidade Federal do Rio de Janeiro and to Programa de Pós-Graduação em Urbanismo, in Laboratório de Análise Urbana e Representação Digital where this paper was developed. Also, to professors and undergraduate students for the work and considerations made in this investigation and to Melissa Wolfe for her gentle revision.

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Keywords: 3D geometric models, immersive experience in 360°, digital graphics, virtual reality

1 A Brief History of the *Panorama of Rio de Janeiro* by Meirelles and Langerock

The *Panorama da Baía e da Cidade do Rio de Janeiro* (*Panorama of Rio de Janeiro's City and Bay*), or, more succinctly, the *Panorama of Rio de Janeiro*, painted by Victor Meirelles de Lima (Brazilian, 1832–1903) and Henri Charles Langerock (Belgian, 1830–1915) was the third panorama created that depicted the city, but it is the most well-known. The painting represents the city's central area at the end of the nineteenth century in the beautiful dusk of April. From an analysis of the panorama, it is possible to realize a significant part of Rio de Janeiro's history: its natural landscape, architecture, urban form, and symbolism of the political and administrative old regime (Leitão 2009).

Victor Meirelles de Lima was born in Santa Catarina, in Nossa Senhora do Desterro, (now Florianópolis), along the southern coast of Brazil. He was invited to study at the Academia Imperial de Belas Artes (Imperial Academy of Fine Arts) when he was just 15 years old (Pereira 2009). This was followed by a travel award that allowed him to study in several museums and ateliers in Italy and France for eight years (Rosa 1982). His 1860 painting *A Primeira Missa no Brasil* (*The First Mass in Brazil*) received great acclaim, and he returned to Brazil to accept the position as the main professor of historical painting at the Academia Imperial de Belas Artes. Meirelles received several government commissions, including *Moema* in 1866, *A Passagem do Humaitá* (*The Passage of the National Ship Humaitá*) in 1868–1872, and *O Combate Naval do Riachuelo* (*The Naval's Combat of Riachuelo*) in 1882, among others. Recognized for his draughtsmanship and virtuosic painting, he became the most important Brazilian painter of the nineteenth century (Xexéo 2009).

Meirelles was a recognized and experienced artist when he decided to realize his first panorama, around 1869 (Leitão 2014).¹ Knowing that such an enormous undertaking would require a partner, he joined forces with Henri Charles Langerock, a Belgian photographer and painter working in Rio de Janeiro, whose abilities were recognized but who had not yet made a name for himself. Langerock was a landscape painter who had traveled around Europe and North Africa, drawing and painting the main cities' landscapes. He was known especially for being on the artistic team that created

¹ In a report sent to future partners of the Panorama, Victor Meirelles mentioned precisely “for more than 17 years I had cherished the idea of doing a Panorama” and “only after a long reflection I decided to realize it.” This report is dated from 1886, but in the text, the Brazilian artist was referring to 1869, 17 years before. During this period of time, Meirelles was traveling for the second time to Europe, when he decided to do a replica of *Combate Naval do Riachuelo*.

the *Panorama of the Battle of Tell-El-Kébir*, which had been exhibited in London (*Le Gand* 1888). When Langerock arrived in Rio de Janeiro to hold an exhibition at the Academia Imperial de Belas Artes, he had already had three experiences that made him especially fit as a partner for Meirelles's plan: landscape painting, photography, and panorama painting. In 1886, the two painters founded Empresa de Panoramas Meirelles and Langerock (Meirelles & Langerock Panoramas Company) with the purpose of undertaking and executing the *Panorama of Rio de Janeiro*. The two painters were founders and the main shareholders, with a dozen other smaller investors. The company would have a term of six years, defined in their contract (Mello Jr. 1982).

As soon as the project's budget was confirmed, the two painters devoted themselves entirely to the project. They decided that the panorama would take its view from the Morro de Santo Antônio, one of the four hills in Rio de Janeiro city's central area, with the closest south coast view. The initial studies were taken *après-nature*; however, it is likely the painters also used photographs. In six months they finished and exhibited the studies at Meirelles's atelier in Rio de Janeiro. The two painters traveled to Ostend, along Belgium's coast, realizing it would be easier to complete the painting in Europe, where the panorama would be exhibited, than to finish it in Brazil and have to transport it. In Ostend, they worked tirelessly on the immense canvas beginning in the last months of 1886 and finally completing it in March, 1888. The finished canvas was 115 meters in length by 14.50 meters in height (Leitão 2019).

Though the initial idea was to exhibit the panorama in London, there weren't any rotundas available at that moment (Meirelles 1889), so instead they decided to exhibit it in Brussels. On 4 April, 1888, at the Boulevard Hainaut (now Avenue Maurice Lemonnier), the *Panorama of Rio de Janeiro* had its inaugural exhibition in the rotunda of the Grand Panorama National de Belgique.² The Panorama was in exhibition from April 5 to October 16, 1888, about six months (Figs. 1 and 2). Its exhibition in Brussels was moderately successful, with a total of 50,000 visitors (Mello Jr. 1982), or an average of 280 people daily. However, an impasse arose over the dividends. Langerock demanded a higher percentage of the profits, which was not accepted by Meirelles and the other partners. Meirelles sued Langerock in the Belgian Supreme Court, receiving a judgment that enforced the company's contract. In Rio de Janeiro, Emilio Hermann bought the rights of the Belgian painter (Meirelles 1889). With the partnership between Meirelles and Langerock broken, the Brazilian painter traveled alone to Paris.

The *Panorama of Rio de Janeiro* next opened in Paris on 14 March, 1889, before the official opening of the Exposition Universelle, or the World's Fair. Meirelles was unable to install the panorama near the Brazilian pavilion as he had initially hoped. Instead, he found a vacant lot on Avenue de Suffren (Robichon 1982) next to the

² Though the rotunda had been closed, it was opened for the panorama's exhibition. Afterward, it was closed again for 12 years. The building has undergone numerous renovations; currently it is a parking garage in Brussels's city central area.



Fig. 1: Le Grand Panorama National de Belgique in Boulevard Hainaut, now a parking garage in Brussels's city center, 2014. Image, the author.

Champ de Mars, a location not far from the Brazilian pavilion but outside the official exhibition area (Fig. 3).³ As in Brussels, the panorama was a great success in Paris. The exhibition reached an average visitation of 200 to 500 people per day. The panorama's presence during the Exposition was well-publicized in the French press with numerous compliments of Meirelles's painting ability (Bapst 1889). The panorama was well-received among critics, even winning the gold medal in the category *Application Usuelle des Arts du Dessin et de la Plastique* (Usual Application of the Arts of Drawing and Plastics). However, though the panorama was very successful in the critical press,

³ In his PhD thesis, François Robichon mentions that before the *Panorama of Rio de Janeiro* was presented at Avenue Suffren, it was installed in a "waiting" building on Avenue de la Motte-Picquet. Robichon notes that on 11 September, 1888, permission was requested for a provisional construction for the panorama by architect Leon Daubourg. It is not clear what exactly happened. The *Panorama of Rio de Janeiro* probably arrived in Paris and was stored but not displayed. Finally, on January 17, 1889, permission was given for the rotunda's construction on Avenue de Suffren, No. 80, by the owners of Kaeffert et Cie.

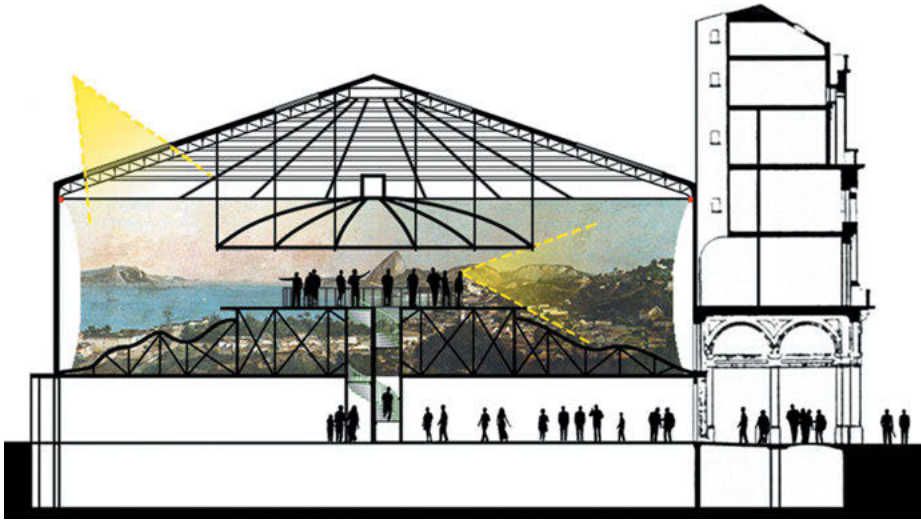


Fig. 2: Cross-section interpretation of the *Panorama of Rio de Janeiro* exhibition in Belgium, 2014. Image, the author.

its public popularity waned. After the official opening of the Exposition, visitation dropped to only 50 to 60 people daily (Meirelles 1889). The *Panorama of Rio de Janeiro* was not able to compete with Exposition's attractions. Victor Meirelles's enterprise was in risk and a new idea emerged: take the panorama to Rio de Janeiro. It would be the first time that a panorama had been displayed in Brazil.

On 3 January, 1891, the *Panorama of Rio de Janeiro* opened to the press in Rio de Janeiro and to the public the following day (Diário de Notícias 1891).⁴ The rotunda had a very particular and unprecedented architecture in the Brazilian landscape; it was an icosagon, or 20-sided polygon (*O Brasil* 1891), built of wood and masonry with no opening to the outside except for the entrance door. It was about 36 meters in diameter, 15 meters high and occupied approximately 1020 m² of built area, with an uninviting appearance (Fig. 4).

Its third presentation was met with great anticipation by Cariocas and Brazilians, as so many of them wanted to see the canvas that had been so successful. Until that time, they had only read comments in the newspapers or heard reports from those who had seen it in Europe. Quickly, the panorama became the city's biggest entertainment spectacle. Local newspapers quickly began to publish their attendance numbers. One of the first to note its visitation was *Jornal do Comércio*, one of the most visible and widely

⁴ The newspapers *Diário de Notícias*, *O Brasil*, *Jornal do Commercio*, *O Paiz*, *Gazeta da Tarde*, and *Gazeta de Notícias* were accessed online in Hemeroteca Digital (Journals Digital Library) of Fundação Biblioteca Nacional (National Library Foundation), Rio de Janeiro, Brazil.

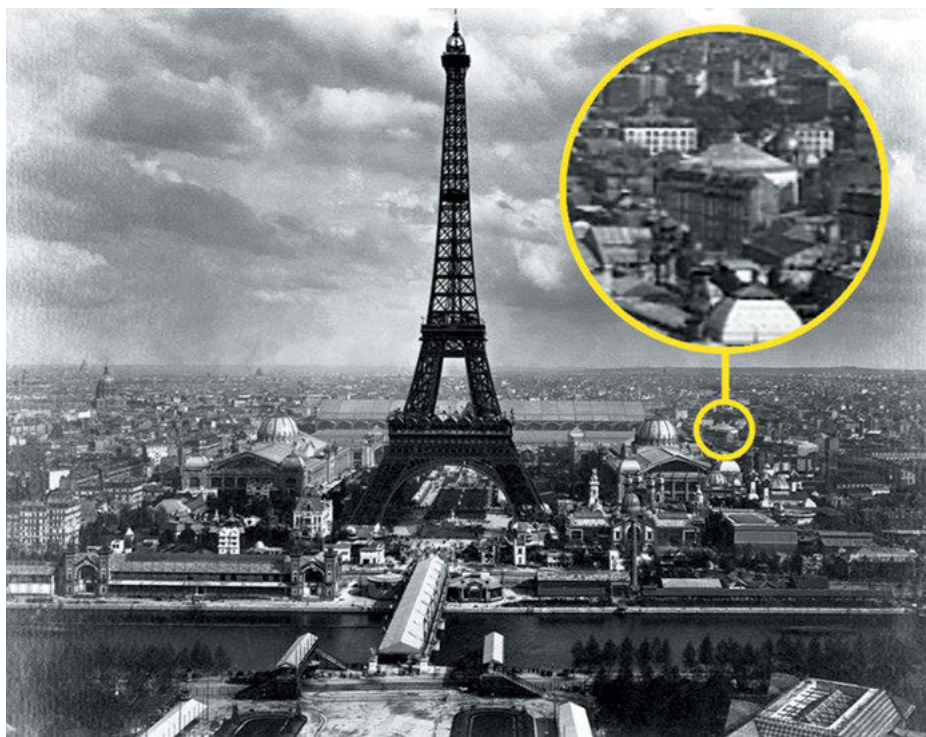


Fig. 3: Panoramic view during the Exposition Universelle, Paris, 1889. Inset added by the author to show the *Panorama of Rio de Janeiro* on the Avenue de Suffren. Image, the author.

circulated of the city newspapers (*Considera* 2000). Certainly, this initiative was an important advertising tool for Meirelles and the enterprise to attract more visitors, consequently increasing profits. Gradually other newspapers, such as *O Paiz*, *Gazeta da Tarde*, *Diário de Notícias*, and *Gazeta de Notícias*, also started to publish the panorama's attendance figures. A careful survey of all these newspapers' reports suggests that the panorama's visitation in Rio de Janeiro surpassed the extraordinary record of 87,500 visitors in the first year of exhibition, or approximately 17% of the city's inhabitants—an unprecedented mark.⁵ The *Panorama of Rio de Janeiro* remained in exhibition for about 5 years. However, after the first year of exhibition, the visitors' frequency reduced gradually. Slowly, the city's greatest entertainment spectacle was no longer an attraction, and the enterprise was closed.

⁵ This estimate was accomplished through careful analysis of online newspapers available in the Hemeroteca Digital (Journals Digital Library) of Fundação Biblioteca Nacional (National Library Foundation). Rio de Janeiro's population in 1890 was approximately 520,000 inhabitants (Leitão 2014).



Fig. 4: Period photograph of Victor Meirelles's rotunda in Praça XV de Novembro em 1890, Rio de Janeiro, Brazil. Image, Museu Histórico Nacional Collection, Rio de Janeiro, Brasil. (<https://brasilianafotografica.bn.gov.br/brasiliana/handle/20.500.12156.1/6256>).

Although the panorama's presence in Rio de Janeiro was well-publicized in the press, very little archival information about its architecture has been located. Only a few photos survive and no architectural drawings have been found. However, through comments and critical reports from visitors found in newspapers, it is possible to deduce the rotunda's interior and spatiality: it had a spiral staircase (*Gazeta de Notícias* 1891); the observation platform featured a terrace on the Morro de Santo Antônio (*O Paiz* 1891); the distance between the canvas and the platform was not very large (*O Paiz* 1891); and the *faux terrain* was composed of natural plants (*O Brasil* 1891). Further research might offer insights into how the 360° immersive experience was created by the panorama and its rotunda in Rio de Janeiro. Meirelles painted two other two panoramas: *O Panorama da Esquadra Legal em 23 de Junho de 1894 Observada da Fortaleza de Villegagnon em Ruínas* (*The Panorama of the Legal Squadron on 23 June, 1894 Observed from the Villegagnon Fortress in Ruins*), exhibited in the same rotunda in 1896; and *O Panorama do Descobrimento do Brasil* (*The Panorama of Brazil's Discovery*), exhibited in a rotunda on Santa Luzia's Street, also in the city's center. Unfortunately, these were not as successful as his first, and they closed after a few months, failing to achieve international interest.

In 1902, a few months before his death on February 22, 1903, at age 71, Meirelles donated his panoramas to the Museu Nacional da Quinta da Boa Vista (National Mu-

seum of Quinta da Boa Vista). They were inadequately stored and disappeared after a few years. A few original documents survived: the original studies by Meirelles and Langerock, now in the Museu Nacional de Belas Artes (National Museum of Beauty Arts); letters from 1910 requesting to remove the panoramas from the museum, held in the Arquivos da Escola de Belas Artes da UFRJ (Archives of the School of Beauty Arts of UFRJ, D. João VI Museum); two brochures from exhibitions of the first and second panoramas, held in the Museu Histórico Nacional (National Historical Museum); and some old and rare photographs showing outside views of the panorama, held in Fundação Biblioteca Nacional (National Library Foundation).⁶ Unfortunately, a very important part of Rio de Janeiro's history, architecture, landscape, and art was lost with the panorama's disappearance.

2 Game Engines: An Alternative for the *Panorama of Rio de Janeiro* Immersive 360° Experience

Today's audiences can no longer experience the *Panorama of Rio de Janeiro*; however, game engines offer a compelling alternative experience. Digital graphics representation tools are constantly evolving, and in recent years, game engines have aroused great interest among those in the academic fields of architecture and urbanism studies, as well as among those working in professional areas. If it was necessary before to have expertise in programming to create immersive experiences based on 360° geometric models in first person with high verisimilitude, today it is possible to obtain very satisfactory results without such training. This is due to greater computer processing capacity, the possibility of rendering in real time, and the availability of a vast library of scenarios, objects, and pre-programmed actions.

Game engines have four basic characteristics: *visualization* and *interactivity* related to the observer-gamer; *reuse of codes* and *use of graphical interfaces* in programming, both aimed at the game programmer; and can be free of charge, which make them accessible to players and programmers. Visualization and interactivity are related to the geometric model's presentation and the realization of the game experience through a pre-established scene with objects, colors, textures and shadows. Furthermore, they establish interaction levels, with movements that simulate observer-gamer actions with a lesser or greater degree of freedom. The reuse of codes and the use of graphical interfaces are intended for the game's development and programming. Thus, the developer can reuse programming codes already written and

⁶ The 1910 letters narrate a long bureaucratic episode between authorities. The panoramas needed to be removed from the Museum because there wasn't space for their storage. This is the last known location of Meirelles's panoramas; their destiny is unknown after October 31, 1910 (Leitão 2014).

also view them through a graphical interface, which makes the development work much simpler. These features combined with the fact that some game engines are free of charge have made them more interesting tools for digital graphics. It is especially worth highlighting the close compatibility between game engines and digital panoramas, as geometric models developed in game engines can easily generate 360° panoramas. The stereoscopic perspective of the observer-gamer with virtual reality glasses, or in a surrounding view in a 360° installation, enhances the immersive experience and makes game engines an even more promising representation tool (Keil et al. 2021).

Although game engines emerged for the video game industry in the 1990s, their application today is much wider. The growing variety of associated tools and data conversion plug-ins makes game engines an attractive and flexible integration platform for generating “digital twin” applications (Julin et al. 2020). In the areas of architecture and urbanism, several applications are being developed for use in building projects, city planning, city visualization data in 3D, and, especially, carrying out immersive simulations of cultural and heritage interest. It is this last application that our project intends to research and develop: an alternative simulation experience for the lost *Panorama of Rio de Janeiro* by Victor Meirelles and Henri Langerock.

When combined, three-dimensional geometric modeling, real-time rendering, and programming codes offer interesting possibilities for digital graphics tools. The two most popular game engines that perform these characteristics well are: Unity, normally used by players and end developers, small academic laboratories, and scientific groups; and Unreal, generally used by large offices specializing in architecture and urban planning visualization, and by companies in the video game industry. Game engines have brought a new way of exploring the digital three-dimensional modeling process. Real-time rendering makes it possible to immediately visualize the final image of the model. Corrections to geometry, balance of colors and textures, and adjustments to shadows can now be made instantly (Gregory 2018). Interaction with the model in real time, with a free and believable movement of the observer-gamer, has sparked even more interest in first-person and 360° simulations and experiences. Tools such as *walking through* have become more widely used in the design and experimentation of projects in architecture and urbanism, and in simulations of historical sites with cultural and heritage interest.

In relation to this last group of applications, geometric modeling is undergoing significant updates. Models of historic cities previously created in traditional digital three-dimensional modeling software such as SketchUp and 3D MAX are being revisited and developed as game engines to offer new 360° immersive experiences. Dattatreya Mandal (2023) has highlighted models that are examples of this: *Babylon*, sixth century BCE, from the Babylon 3D group, which represents the Ishtar Gate with the adjacent urban nucleus (2013); *Alexandria*, 50 BCE, by Steve “Decimus,” which simulates the ancient city, including its lighthouse, library, and Royal Palace neighborhood (2014); *Pompeii*, on August 24, CE 79, by Oberon Bradford and the Zero One Animation group in partnership with the Melbourne Museum in Australia, which depicts houses, bathrooms, tem-

ples, public buildings, graffiti, frescoes, port, and Mount Vesuvius (2014); *Constantinople*, from the CE fifth to the thirteenth century, by Julien Blarel, which recreates the Hagia Sophia, walls of Theodosius, fortifications, and entire urban complex (2015); *Ur*, twenty-first century BCE, by artist-engineer Kais Jacob, who recreates the Ziggurat of Ur and its surrounding landscape (2016); and, the *Royal City of Amarna*, fourteenth century BCE, by prof. Jean-François Bernard from the University of Bordeaux in partnership with the Archéovision group, which reflects the aridity of the Egyptian city in the middle of the desert with its *talatats*, or stone blocks (2016).

Mandal's list (2023) also points out experiments with geometric models of historical cities already developed in game engines, including *Knossos Palace*, in Crete, Greece, seventeenth century BCE, by history professor Marco Mellace, which represents the palace, its architecture, central courtyard, circulation systems, and the houses in the immediate surroundings forming the urban core (2019); *Corinth*, Greece, CE second century, by Danila Loginov and the History in 3D group, which depicts the city's central part with the Agora, temple of Apollo, theater, hippodrome, and amphitheater during the Roman domination period (2020); *Athens*, fifth century BCE, by professor Dimitris Tsalkanis from the Technological Educational Institute of Athens, which simulates the Acropolis and the formation of suburbs on the plain (2021); *Rome*, in CE 320, by Danila Loginov and the same History in 3D group, which recreates the opulence of architecture in the period of Emperor Constantine (2022). All these works are, for the most part, developed with the Unity and Unreal game engines.

The improvements of the *Panorama of Rio de Janeiro* by Meirelles and Langerock game engine presented in this paper draw upon the developments made in these projects, especially the process of formal and spatial modeling, creation of a first-person and 360° immersive experience, and development of the historical narrative and gameplay. The specific topic of this paper is part of a larger, on-going project to understand and recreate the experience of the lost *Panorama of Rio Janeiro* by Meirelles and Langerock.⁷ The main focus now of this larger project is to recreate a 360° immersive experience of the panorama by a game engine.

3 Methodological Framework: Authors, Method, and Tools

Aspects of digital graphics fundamental in the development of first-person and 360° immersive experiences in architecture and urbanism studies—such as incorporation, immersion, levels of immersion, body's representation, invisibility of the interface for

⁷ The development of this larger project has been presented at the 28th through 32nd International Panorama Council conferences (2019–2023).

body's representation, body in movement—have been the topic of considerable theoretical and conceptual discussions. Incorporation is understood as a body immersion, or translation into virtual space. For Kenderdine (2010), the researcher's first objective when developing immersive first-person experiences is the successful incorporation of the observer-gamer into the verisimilitude of the space's representation, otherwise the immersive experience will not be fully developed. The body must belong to the virtual space and perform actions on it. Calleja (2011), on the other hand, stratifies the discussion about immersion and the body by establishing different dimensions through videogame analysis, such as kinesthetic, spatial, shared, narrative, affective, and ludic. Only the kinesthetic is related to the movements of the observer-player, and sometimes of their own body, whereas the other dimensions point to other game characteristics. In order to propose a better bodily immersion in virtual space, Shaw, Kenderdine and Coover (2011) propose the invisibility of the interface in such a way that the observer-player can enjoy the immersive experience as directly as possible, without interruptions; HUD (heads-up display, or status bar) interface information, such as buttons, maps, and extras, are hidden and only shown if selected. Furthermore, to represent the observer-gamer's body in movement, which is increasingly present in first-person and 360° immersive experiences, Kenderdine and Shaw (2017) propose that the ideal camera position for the moving body be the real height of the observer, otherwise the incorporation is broken and the experience is not achieved fully. All these immersive features were taken into consideration in the development of the *Panorama do Rio de Janeiro* by Meirelles and Langerock game engine.

We choose to follow an historical-interpretive method with simulation (Groat and Wang 2013) in developing our game engine. The historical-interpretive method employs the potential of imagination and interpretation in historical research as a way to understand object patterns, and interpretation as a way to relate and concatenate these patterns. In this method, the researcher's main task is to organize this framework scientifically, in such a way as to investigate, collect, select, schematize, and finally, propose a historical-interpretative reading. In order to create a successful simulation, the researcher's task is to represent the main characteristics of the space with as much verisimilitude as possible, understanding and working with the limited historical data in order to propose a probable simulation. This essay explores the observer-gamer's relationship with an historical city simulation in order to continue the development and improvement of the *Panorama of Rio de Janeiro* by Victor Meirelles and Henri Langerock game engine. The main tool for this work is the Unity game engine. The practical approach to programming, essential for Unity's utilization, is offered by Harrison Ferrone's investigation, *Learning C# by Developing Games with Unity 2020: An Enjoyable and Intuitive Approach to Getting Started with C# Programming and Unity* (2020). His work is a guide to creating 2D or 3D games using the Unity game engine with or without any familiarity in programming, especially the C# language.

In using this theoretical-conceptual research, and selecting our particular method and main tools, there are several works that were analyzed and used as references: *SIMRIO* (Vilas Boas 2015); *Viagens Pitorescas* with simulations developed at the Instituto Federal de Ouro Preto (Ouro Preto Federal Institute) (De Paula, Duarte, and Bohrer 2019); *The Virtual Rome* developed at the University of Reading (Nicholls 2019); the video game series *Assassin's Creed: Creed II*, 2009; *Unity*, 2014; *Origins*, 2017; *Odyssey*, 2018; and *Valhalla*, 2020. These works have as their guiding principle the simulation of historic cities using game engines, and more specifically, they position the observer-gamer not only as an agent capable of learning, but of learning and interacting with history (Kapell and Elliott 2013).

4 The Unity Engine for the *Panorama of Rio de Janeiro*: The Interchangeability of Historical Layers in *Faux Terrain* Experiences

In order to reinterpret the 360° immersive experience of the *Panorama of Rio de Janeiro*, a set of three investigations have already been undertaken. The panorama's 360° image was digitally recomposed based on the original studies and its validation in the geometric models of Rio de Janeiro's city central area in 1885 developed in the SketchUp program. Following this, the panorama's 360° image was again digitally recomposed based on a photographic panorama taken by Swiss photographer Joseph Hubmayer in 1915 from the same point of view on the Morro de Santo Antônio used by Meirelles and Langerock (Leitão 2020). Once the interpretation of the panorama image was completed, it was divided into five concentric layers in the Lumion program, generating a viewer's movement around the panorama in a 360° immersive experience (Leitão 2021). All these investigations provide the basis for the present paper.

Once Unity was established to be the main methodological instrument to develop the *Panorama of Rio de Janeiro* by Meirelles and Langerock in a game engine experience, the next step was to verify its compatibility with the geometric models previously created in SketchUp. Unity presented a partial compatibility; although there were no problems with the geometry of Rio de Janeiro's city model of 1885, all colors, textures, lights and vegetation of the *faux terrain* needed to be re-developed. It was possible to work with the free library of assets and C# scripts to assist in this new task (Leitão 2022).

A special menu was developed to launch the game's start screen with the following buttons: *Jogar*, *Pesquisa*, *Histórico*, *Créditos*, and *Sair* (Play, Research, History, Credits, and Quit). Though all items are presented in Brazilian Portuguese, they can be easily converted to English or any other language. *Jogar* starts the game, and the observer-

gamer is transported to 1885, standing on the viewing platform of the *Panorama of Rio de Janeiro*. Pesquisa opens a list of all presentations and articles made by the author about the *Panorama of Rio de Janeiro*, such as International Panorama Council presentations and journals, SIGRADI—Sociedade Iberoamericana de Gráfica Digital (Ibero-American Society of Digital Graphics) presentations and essays, and SIAC—Semana de Integração Acadêmica (Academic Integration Week). Histórico presents all the original documents found from research, such as the painters' original studies, exhibition booklets, reports, and original photographs, among others. Créditos opens a list of current and former project team members, and selecting Sair enables the observer-gamer to exit the game.

The next step was to simulate movement in the first person. A camera was created 1.70 meters high, with horizontal amplitude of 150° and vertical amplitude of 130°, as if the observer were in the scene represented with six degrees of freedom (6DoF): *yaw* (looking left or right), *pitch* (looking up or down), *roll* (peeking around a corner), *elevating* (bending down or standing up) *strafing* (moving left or right) and *surging* (walking forwards or backwards). From these movements, the observer-gamer can explore the panorama's platform in all directions, climbing or descending the helical staircase, or walking in the *faux terrain* of the Morro de Santo Antônio, among other possibilities.

The historical data collected through research allowed us to consider new exploration possibilities beyond the 6DoF movement of the observer-gamer. We could create different historical layers, subsequent to the year in which the panorama was exhibited in 1885, in such a way that the observer-gamer could realize the main architectural, urban, and topographical changes in the landscape depicted in the panorama. To this end, an interface was specially developed. We added buttons that enable the observer-gamer to select the different historical layers; maps that could indicate the observer-gamer's location on the viewing platform and in the *faux-terrain*; and a pause menu to list game control options and to pause the game at any point of view determined by the observer-gamer. There are three historical layers available for the observer-gamer to select: 1885, which replicates the scenes from the six studies for the panorama sketched by Meirelles and Langerock; 1915, which includes the Observatório da Escola Politécnica (Polytechnic School Observatory) and replicates the landscape found in Hubmayer's photographic panorama of 1913; and the contemporary era of 2020–2023, which follows the city's current landscape with its modern and postmodern buildings. Each historical layer was idealized as a game level to be explored by the observer-gamer (Leitão 2023). A specific geometric modeling process was initiated to realize the three historical layers.

For 1885, the natural state of Morro de Santo Antônio was re-imagined by adding open green areas, bushes, small trees, some paths, and the Convento de Santo Antônio (Santo Antônio Convent), the main building on the location in this year. Six easels with painting and drawing instruments are also included to represent the six Meir-

elles and Langerock 's studies (Study No. 01—*Morro de Santo Antônio e Largo do Rócio*; Study No. 02—*Morro da Conceição e Igreja da Candelária*; Study No. 03—*Morro de Santo Antônio e Ilha das Cobras*; Study N0. 04—*Morro do Castelo*; Study No. 05—*Entrada da Barra do Rio de Janeiro*; Study No. 06—*Morros do Corcovado e Tijuca*). These easels are placed at the locations and orientations in which each of the views of the sketches were taken (Fig. 5).



Fig. 5: Unity engine interface of the *Panorama of Rio de Janeiro* by Meirelles and Langerock: observer-gamer in the *faux terrain* of Morro de Santo Antônio in 1885 with the Study No 5, 2023. Image, the Author.

For the historical layer of 1915, the 1885 geometric model could be used with small modifications. For instance, paved areas were created and new paths were designed. Also, the Observatório da Escola Politécnica building complex was added with Cook's Equatorial Tower, the north-south axis house, the east-west axis house, support towers, and the keeper's house, among other smaller houses and buildings (Fig. 6).

For the contemporary, 2020–2023 period, a new urban model was developed, based on the City Hall plan and modern and postmodern buildings found in the 3D Warehouse. It is worth noting that the hill was partially demolished in the mid-twentieth century. Large modern and postmodern buildings from the 1970s and 1980s were added in the area of Morro de Santo Antônio, such as the Petrobras headquarters (Brazilian oil company), Cathedral Metropolitana de São Sebastião (Metropolitan Cathedral of São Sebastião), and BNDES (National Economic Development Bank), among other smaller but striking examples located in the area (Fig. 7).

After geometric modeling of the three historical layers of 1885, 1915, and 2020–2023, with the respective adjusted C# scripts, the *Panorama do Rio de Janeiro* Unity engine was tested. The initial results were quite interesting. The movement of the observer-

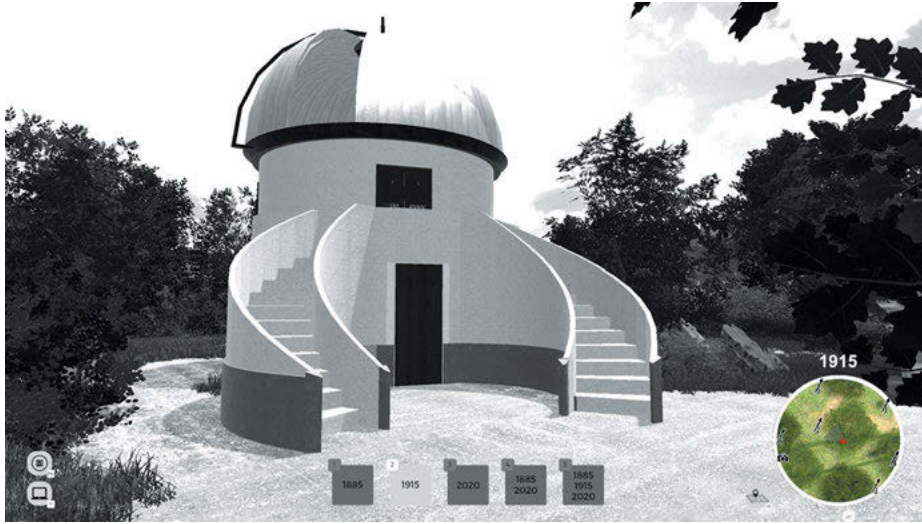


Fig. 6: Unity engine interface of the *Panorama of Rio de Janeiro* by Meirelles and Langerock: observer-gamer in the *faux terrain* of Morro de Santo Antônio in 1915 with Cook's Equatorial Tower at the Observatório da Escola Politécnica, 2023. Image, the author.



Fig. 7: Unity engine interface of the *Panorama of Rio de Janeiro* by Meirelles and Langerock: observer-gamer in the *faux terrain* of Morro de Santo Antônio in the area of the old Morro de Santo Antônio in 2020 seeing the Petrobras building, 2023. Image, the author.

gamer worked naturally, which provided very satisfactory 360° immersive experiences. Additionally, when testing the compatibility of the three geometric models we realized that a new and unique perspective could be explored. The observer-gamer could experience a combination of the historical layers. The 1885 layer could be combined with 2020–2023, or the historical layers of 1885 and 1915, together, could be combined with 2020–2023, so that all three eras could be experienced in such a way as to enhance the observer-gamer's understanding of their relationships. So, for instance, the old scale of Morro de Santo Antônio and the location of the Observatório da Escola Politécnica can be experienced with their relationship to today's environment through the consequent overlaps and intersections with the large modern and postmodern buildings of today now located on its esplanade (Figs. 8 and 9).

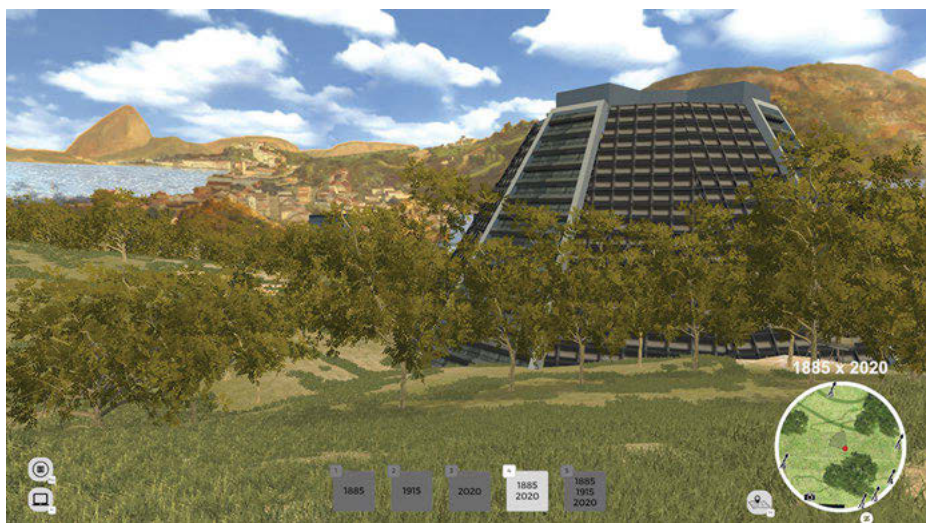


Fig. 8: Unity engine interface of the *Panorama of Rio de Janeiro* by Meirelles and Langerock: observer-gamer in the *faux terrain* of Morro de Santo Antônio as if the hill still existed today, with the contemporary Catedral Metropolitana, in 1885 x 2020–2023, 2023. Image, the author.

After the entire development process, the immersive experience of the historical layers in the *Panorama of Rio de Janeiro* Unity engine finally could be enjoyed. The game engine is still in progress, but it has already presented very satisfactory results when tested by students, professors from architecture and urban planning faculties, and researchers on panoramas and 360° immersive experiences.

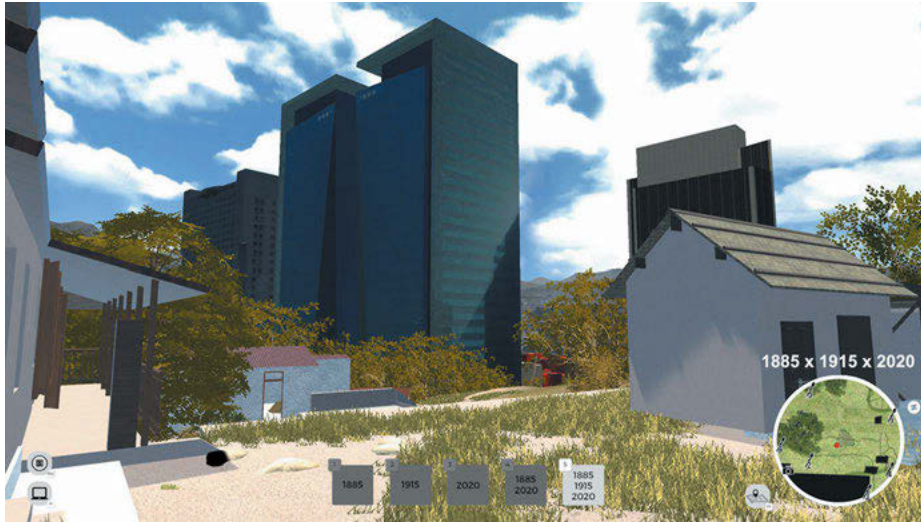


Fig. 9: Unity engine interface of the *Panorama of Rio de Janeiro* by Meirelles and Langerock: the observer-gamer in the *faux terrain* of Morro de Santo Antônio, with the Observatório da Escola Politécnica in 1915, and the modern and postmodern buildings of today, in 1885 × 1915 × 2020–2023, 2023. Image, the author.

5 Concluding Remarks and Perspectives

The author and his team have learned a great deal from the stage of this project that is reported here. The Unity engine has suggested a new methodology to be explored and developed in the following years for this ongoing research project. The *Panorama of Rio de Janeiro* Unity engine has provided a real possibility to explore a walking-through and an immersive 360° experience with great verisimilitude and interactivity. The interchangeability between the historical layers of 1885 with Meirelles and Langerock's *Panorama of Rio de Janeiro*, Hubmayer's photographic panorama and the Observatório da Escola Politécnica of 1915, and the modern and postmodern buildings and urban layout of the current city of 2020–2023 was very successful and achieved an outcome that was even better than expected.

In the light of the work realized, some perspectives and directions have been presented for further investigations. We plan to continue to develop the experience made possible by the Unity engine with more kinesthetic and spatial involvements, and more characterization for movements and virtual environment. We plan to explore greater ludic and affective involvements, or emotional and sensitive capacities, for the observer-gamer, as well as the possibility to interact with characters. We hope to test a prototype for shared involvement to see how the experience would flow with more than one observer-gamer simultaneously. Further possible directions include

creating a Unity engine experience with virtual reality glasses, or even hold an exhibition for a Panorama of Rio de Janeiro in a 360° multimedia art installation. All of these provide further opportunities to foster discussions between students, professors, researchers, and professionals about 360° immersive experiences and how game engines can be developed and applied in the fields of architecture and urbanism.

Author Biography

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Weiling Deng, Sara Velas, Ruby Carlson, Jonathan Banfill

Relocating Shengjing: Traveling Panorama as Theory

Abstract: This paper details the production of *Shengjing Panorama*, a 360-degree illustration of the semicolonial Manchurian metropolis of Shenyang circa 1910–1930. Currently on view at the Velaslavasay Panorama in Downtown Los Angeles, the painting joins three modes of panorama creation—the Chinese revolutionary praxis, the European fine art and the contemporary Los Angeles “feral” DIY method—allowing for a thicker, more open, non-prescribed, visual historiography of the lost world of Shengjing (Wertheim 2007). By focusing on *Shengjing Panorama*’s representation and theorization of Shenyang’s history, its collaborative genesis by artists in contemporary Shenyang and Los Angeles, and its process of installation at the Velaslavasay Panorama, this paper explores how panoramas can theorize both the past and the present, or how the lost worlds of the past can be evoked and communicated to diverse audiences in the present, through engaging the public with ways of knowing and viewing contested landscapes and lost worlds across space and time.

Keywords: Velaslavasay Panorama, Traveling Theory, Shenyang, Los Angeles, Manchuria

1 Prelude

The historic teal-colored Union Theatre in Los Angeles stands in a partially gentrified residential neighborhood of West Adams adjacent to the campus of the University of Southern California (Fig. 1). Since its completion in 1910, this early purpose-built motion picture house has become a palimpsest of neighborhood-based mass media on the outskirts of Hollywood. Of the many incarnations of this building were; a movie theatre, an acting school and playhouse opened by Louise Glaum, a site of church meetings, and the headquarters of the Tile Layers Union Local #18 (Von Blon 1935; *Los Angeles Times* 1955). Since 2004, it has been home to its current inhabitant, the Velas-

Note: The writing of this essay is itself an example of multi-perspective and multi-modal co-creation.

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Fig. 1: Union Theatre marquee of the Velaslavasay Panorama, 1122 W. 24th Street, Los Angeles, California, 90007, USA. Image, Forest Casey, 2016.

lavasay Panorama (VP), a non-profit art space founded by Sara Velas, a panorama artist from Panorama City, California, that was originally located in a vacant round Chinese take-out restaurant on Hollywood Boulevard. The VP's previous panoramas included *Panorama of the Valley of the Smokes* (of Los Angeles two hundred years ago), *Effulgence of the North* (a moonlit arctic landscape), and *Grand Moving Mirror of California* (a moving panorama of a gold-rush era journey).

One would least expect to see in the fourth and current panorama-on-view an old city in northeastern China from a hundred years ago with outstanding Russian and Japanese architecture. It is the *Shengjing Panorama*, an illustration of the semicolonial Manchurian metropolis of Shenyang circa 1910–1930. Leaving behind the sun-filled streets of Los Angeles, the visitor enters the VP through the lobby, gets a ticket and brochure at the front desk, and carries on down a darkened hallway (Fig. 2). This nineteenth-century style entrance forces the eyes to adjust to a different way of seeing (Oettermann 1997, 49). Once she travels up the spiral staircase, she finds herself immersed in the sights and sounds of early twentieth-century Shengjing (today's Shenyang). The imagined viewer is now suddenly far from Los Angeles outside, deep in an aesthetically constructed lost world. Much of what can be seen in the spectacles have been lost in domestic and international wars, anti-Manchu political revolutions, Maoist decolonial industrialization, and post-Mao urban renewal. Yet some iconic architectures survived, including the warlord Zhang Zuolin's mansion and the Shenyang



Fig. 2: Hallway entrance to *Shengjing Panorama* installed at the Velaslavasay Panorama. Photograph courtesy of Velaslavasay Panorama, 2022.

Station of 1899, initiated by Russian investment and completed by the Japanese South Manchuria Railway.

The Shenyang Station can be zoomed in as a landmark of note for highlighting the essay's theoretical set-up. In fact, before the visitor entered the rotunda, she already spotted the station in a diorama in the dim corridor leading to the panorama's spiral staircase. The diorama of Shenyang Station presents a miniature 3D version of the station and is situated across from a diorama of La Grande Station, the erstwhile train station (1893–1939) in Los Angeles to which it bears a striking resemblance (Masters 2013). This opposition of the train stations across from each other positions the viewer in between a dialogue of the two cities that carries on into the panorama itself, creating a third, simulated space combining a prior Shenyang with a prior and present Los Angeles into an imagined domain that preserves prior possibilities. It is this traveling through simulated space that is important. The simulated space both excavates and imagines the past alongside the real and material present. The experience of the panorama is caught in between these shifting temporalities and spatialities, traveling between Shenyang and Los Angeles, or Los Angeles and Shenyang, across intersecting imaginaries.

2 Introduction

This essay seeks to provoke new thinking of the traveling and theory of panoramas. It theorizes not only how panoramas are devices that provide travel through aesthetic immersion, but also considers how panoramas are built, physical objects that can be subjects of traveling. Additionally, it theorizes how panoramas, at least in their contemporary instantiation, can be conceptually formed from the complex interaction of ideas between people and places, such as the artists involved, where instead of a single or direct representation of a particular place, scene, or history, multiple layered representations and meanings can emerge. The essay does so through a case examination of the conceptualization and creation of the *Shengjing Panorama*. In this case, the panorama presents a re-imagining and aesthetic representation of one particular place and time, but is installed in a very different, and seemingly unrelated, place and time. Yet, we argue, it is exactly this disjunctive “interlapping” (Brathwaite 1974, 5; Roberts 2021, 28) of places, times, and imaginaries unloyal to any centralized historical narrative that gives *Shengjing Panorama* its power to evoke lost worlds in a way that is not prescribed to one reading (e.g. nostalgia or political victory), one place (e.g. Shenyang), or one identity, but instead opens up wider ground to theorize.

Shengjing Panorama derives from a multi-year collaboration between artists of the Velaslavasay Panorama and Li Wu, Yan Yang and Zhou Fuxian—painters, historians and professors from the Lu Xun Academy of Art in Shenyang, which originated from Mao Zedong’s Yan’an-era (1935–48) mobilization of mass literary and art revolution. Within this collaboration there is a meeting of panoramic artistic traditions—the socialist, nineteenth century and the contemporary—as well as imaginaries about the cities that each are in—how the American artists imagined Shenyang and its history, how the Chinese artists imagined the city of Los Angeles. Rather than a one-way story of creation—the Chinese panorama going to America—it is instead the crossing of imaginaries that speak to an organic, integrated co-creation, where the perceptions of the artist and each other are blended together with the process of getting to know each other, personally, professionally and culturally, highly informing the *Shengjing Panorama* project. Ultimately this was an “artist-to-artist” collaboration, guided by the desire to create as felt in artist-driven “folk art environments,” such as Los Angeles’ own Watts Towers.

For *Shengjing*, a method of crossing imaginaries for its creation brings this discourse into an approachable, participatory form which includes the audience’s experience and “treats visitors as co-creators in the process of knowledge production, not merely as passive consumers” (Wertheim and Wertheim 2002). An approach countering the top-down consumption of history-telling occurring in the state-sponsored panorama exhibits created by the Chinese state, the conception of the *Shengjing Panorama* was informed by the contemporary history of Shenyang that the artists lived through, that is, a city emerging from socialism in the late 1970s and 1980s, experiencing deindustrialization and changing economic conditions, and since the 1990s has experi-

enced postmodern and postcolonial debates that have influenced experiments in art, architecture, and academia. These lineages are also present within the panorama.

In 2017, upon completion, the 90-foot long painting was ceremoniously handed over to representatives of the Velaslavasay Panorama and transported to Los Angeles (Fig. 3). The connection between Shenyang and Los Angeles may be ambiguous and not fall into any major historical or contemporary iterations of China-US relations. Why Shenyang? Many would wonder. Unlike Beijing, Shanghai, and Guangzhou that strike the major scales of China's modernization, Shenyang plays a minor scale of nostalgia for many suppressed memories and unrealized futures.



Fig. 3: *Shengjing Panorama* painted canvas handover ceremony in Shenyang, China at the Tiexi School for the Deaf on May 2, 2017. Image, Velaslavasay Panorama, 2017.

This essay draws on the traveling of *Shengjing Panorama* to contemplate on panoramas as a medium that transports ideas, people, and goods across times and spaces. Our interpretation of the traveling panorama builds on Edward Said's traveling theory and its ensuing expansion toward "traveling theorists" (Clifford 1989). A *traveling panorama* can be a theoretical tool for thinking about how a panorama operates as a grounded and site-specific interface for evoking complex and layered lost worlds. They complicate our physical, emotional, and epistemological engagements with multilayered landscapes. This has to do not only with what it is representing specifically but also with the publics that encounter it. In the case of the *Shengjing Panorama*, it engages with lost worlds that are both historically specific to the city's represented and evoked past (Shenyang) and parallel spatially through location and programming

(Los Angeles). In turn, theorizing the *Shengjing Panorama* as a traveling panorama can perhaps also help form a more open and generic knowledge that can be applied to understanding the way that lost worlds from the past are composed of similar complexities (postcolonial, postsocialist, changing and redeveloping), in order to better understand the present composition of places and cities, which can then be brought back to existing discussions of panorama as a device that provides “mobilized virtual” travel to another time and space (Friedberg 1994).

The subsequent sections are organized to delve into distinct facets of the panorama’s genesis and significance. “Si(gh)ting the ‘Lost World’” provides historical context, while “Recrafting Shengjing” examines how the evocation of *Shengjing Panorama*’s portrayal of the city was constructed. “Socialist Routes” explores the development and influence of Socialist-style panoramas on the Chinese artists’ training, while “Traveling Connections, Intersecting Imaginaries” investigates the trans-Pacific collaboration between the Shenyang and Los Angeles based-artists. The logistics of creating, transporting, and installing the panorama are dissected in “The (Actually) Traveling Panorama: Shenyang to Los Angeles.” “Interlapping Sound-and-Lightscape” examines how the panorama encapsulates elements from each city via the soundscape that soundtracks the exhibition space. Finally, “Traveling Publics” documents the diverse public engagements facilitated by the *Shengjing Panorama*. The essay concludes by summarizing key theories and contributions, emphasizing how panoramas can offer nuanced perspectives on past and present, engaging diverse audiences across space and time.

2.1 Notes on Naming

In the spirit of a lost world, *Shengjing Panorama* uses Shenyang’s Manchurian name. The Ming Dynasty name “Shenyang” (literally “The Upper Bank of the Shen River”) was revived during the warlord-era in the late 1920s. It suggests the city’s gateway position to the region’s signature Changbai (Long White) mountain range whose fertile river valleys nourished the Jurchen tribes that were a constant military threat to the Ming. Upon capturing Shenyang from the Ming, the Jurchen confederation leader Nurhaci and his descendents, who soon rose to found the Qing empire, renamed Shenyang “Mukden,” meaning “the (place of) rising” in Manchu. “Shengjing” was its mandarin Chinese translation, literally “the flourishing capital” (Rogaski 2022, 75). Once the Manchus relocated the Qing capital to Beijing, a “Fengtian” (“Heaven-granted”) government was established in Shengjing, indicating the siting/sensing of the emperor’s dragon veins (18). These names carry geo-spatial measurements that have cosmopolitical connotations. In this article, we use “Shengjing” to refer to the temporal (1910–1930) and thematic domains of the panorama, operating as a palimpsest of the modernly defined massive metropolis of Shenyang. We use “Shenyang” to address the city from 1930 onward.

3 Si(gh)ting the “Lost World” of Shengjing

Early twentieth-century China stood at the crossroads of a non-Han empire’s fall, a full colonization with foreign investment on industrialization, and a bourgeois society with opaque possibilities of political autonomy. What distinguishes Shengjing from the other metropolises on China’s east coast was its being a political and economic center of an expansive borderland the size of Germany, Poland, and France combined, or that of two Texases (Rogaski 2022, 8). Spanning north-south from Siberia to the Bohai Gulf, and east-west from the Pacific Ocean to Central Asia, Manchuria’s territory at high Qing exceeded far beyond the northeastern borderline of the People’s Republic of China today. Merchants from around the world brought to Shengjing myriad languages and countless kinds of goods (Schlesinger 2017). Ruth Rogaski argues in her seminal work *Knowing Manchuria* (2022, 12) that there has never been a solid ground to claim who was native and who was settler, and whose knowledge of the land (and landscape) was indigenous and whose was imperial. Defying all tendencies of binary thinking, Manchuria was “a series of ‘nested’ imperialisms that encompassed the landscape in layered and interpenetrating hierarchies.”

Panorama as a way of seeing, knowing, and remembering—of influencing the discourse of identity and history through creating knowledge of landscapes—runs directly into the question of coherence. Whose coherent view of the landscape does it represent and at whose expense? While it is not uncommon for a panorama painting to represent conflicting parties and contested territories, for instance, the depiction of a battlefield, re-presenting Shengjing in the 1910–1930 period entails a contextualized understanding of the city as the metropole of many intersected frontiers that would later fade. Shengjing was the center of many peripheries (Fig. 4). Each of those peripheries retained irreducible identity tensions with its respective imperial centers predominantly within Asia—Qing/China, Chosŏn Korea, Japan, Mongolia, and Russia—but also



Fig. 4: Platform view of *Shengjing Panorama*, a 360-degree painting of 90 ft. circumference (27.43 meters) with *faux terrain*, completed 2019. Image, Forest Casey, 2021.

in Great Britain, France, Germany, and the United States. Only under Japanese occupation (1932–1945) did Manchuria have distinct “‘international’ boundaries” as a puppet state (Rogaski 2022, 7), Manchukuo, a political entity that the People’s Republic of China (PRC) vehemently characterizes in history textbooks, films, and documentaries as a predetermined “lost” case. Manchuria’s highly volatile and disaggregated regional identities, as well as the disparity between its boundary and that of the PRC, make “the very moniker of ‘Manchuria’ . . . a political suspect enterprise” that needs to be obscured or erased from the PRC’s grand historical narrative to give way to the myths of inevitable historical progress and inviolable sovereignty (Rogaski 2022, 7). In other words, the memory and knowledge of “Manchuria” in general, and of “Shengjing” in particular, needed, and still need, to be repressed and lost selectively.

For the reasons above, “lost” is the key characteristic of seeing, listening to, and comprehending early twentieth-century Shengjing, not so much a nostalgia that longs for restoration as an identity very specific to Manchuria’s cartographic uncertainties that haunted every settlement. Very importantly, what made a unique Shengjing was not a hybridity of established and coherent identities one can find in the imperial centers; rather, Shengjing was an assemblage of divergents, fragments, and crosscurrents, a spheric local place. In this light, Shengjing may seem antithetical to the coherent view a panorama brings forth, coherent not just in spatial dimensions but also in the mapping of the past’s move into the present, or historiography. And yet, a panorama can also take this challenge to become a critical pedagogical tool that disorients the viewing/knowing of the landscape by reopening the plurality of the past.

Picking up the obsolescent name “Shengjing” not only evokes memories of a “flourishing capital” whose lineage extended to more time-spaces than present-day Shenyang, but also stirs in the “political suspect enterprise” to peruse the multiplicity and contestation of Manchuria’s landscapes. By shifting the inquiry from “what was” to “what could have been,” we view *Shengjing Panorama* as a place-based knowledge production that diverges from the “homogeneous, empty time” of modernist metanarrative (Benjamin 2019, 205). As a “walk-in assemblage” of historically and recently recorded images and sounds, *Shengjing* in the Velaslavasay Panorama engages its viewers in an empathetic si(gh)ting of ambiguous territorial boundaries amidst robust everyday life in what Fa-ti Fan calls a “cultural borderland.” It re-presents the city of Shengjing as a highly contested terrain where knowledge transaction and negotiation took place “between metropole and colony, between colonies, and among Europeans, creoles and autochthons” (Fan 2007, 215)—also noting, as Rogaski warns, it was not Europeans but Asians that played a predominant role (Rogaski 2022, 13).

Drawing on the historical and continuous struggles to control the “knowing [of] Manchuria,” we analyze the creation of *Shengjing Panorama* as a case of recrafting the landscape among historical attempts to open up questions about the mechanism of landscape-mediated knowledge production: What is known and unknown? What does it entail to know an elsewhere and elsewhen? What dynamics of relationship does it insert between the viewer and the view/viewed? If panorama, like film and other mass

media tools, is devised to create a “knowing” spectator by engendering a fantasy of mobility though virtual traveling, what might be lost in this kind of “knowing”?

4 Recrafting Shengjing—The (Un)commonground of the Manchuria Landscape

Shengjing’s landscape and the kinesthetic knowledge extracted from it were simultaneously a political product of frontier scheming and a Benjaminian phantasmagoria of imperialist politics that led to two world wars. The mode of knowledge production of the Manchurian landscape through sensing, mapping, documenting, sampling, and storytelling sent back to the empires the illusion of being present in “the here and now” (Mourenza 2010) where the present and the imagined future were collapsed through mass media-facilitated fetishism of commodities. The Manchurian phantasmagoria reflected the shift to a different approach to extracting the region’s natural resources that was reshaping the world of empires, “a shift from commodities to meet the demand of court elites and luxury markets to fossil fuels and agriculture to meet the demand of industry and mass armies” (Rogaski 2022, 18).

The era of *Shengjing Panorama* (1910–1930) is setting up a “hyper cosmopolitan” backdrop of a mix of cultures and ideas (Fig. 5). When the Japanese were at the helm of Manchukuo, the Manchurian landscape was then purposed into a “golden land of opportunity” to promote the region for the Japanese to relocate and get an ethnic stronghold, a version of its own “Manifest Destiny” as experienced here in the American West through land grants and homesteading. As Edward Denison and Guangyu Ren note in their study of the coordinated work of Japan’s Manchukuo government and its film industry, “Manchukuo became a film set on which the drama of Japan’s imperial project was played out in glorious detail and projected back to a thirsty public at home and overseas.” Thinly veiled under a promise to enlighten “foreign people” with Manchuria’s evolving situation, Japan’s production of tourist “brochures, maps, pamphlets, posters, and books and the production of features films and documentaries” aided the empire’s visualization of “a place to experience the future—a land of modernity fashioned by Japan’s benevolent and guiding hand” (Denison and Ren 2016, 61).

After World War II, portraying Manchuria continued to be a political act to territorialize “Chinese” sovereignty. The Battle of Jinzhou in 1948 marked the Chinese Communist Party’s securitizing China’s northeast at the defeat of Chiang Kai-shek-led Kuomintang (Nationalist Party), an event that forty years later became the subject of the PRC’s first 360-degree panorama museum. The project, directed by the central and regional military commissions and painted by Lu Xun Academy of Fine Arts, was to fulfill patriotic education. In the years following the PRC’s founding in 1949, the state arranged mass sketching tours that sent practicing artists to China’s scenic borderlands, including Manchuria’s signature semi-active volcano, Mount Changbai. Those

tours were intended as an educational apparatus to absorb the suspect “bourgeois” Chinese artists into the post-1949 proletarian Chinese socialism to become “cultural workers” (Ho 2020, 4). Asked to understand landscape sketching as revolutionary praxis that aligned the individual with state ideology, the traveling artists were to “recognize and envisage socialist life as palpable” both as art creators and as a medium through which the state spoke to the public (5).

In all these iterations of Manchuria, landscape is not simply a static object to be represented. Rather, it has offered the site, material, and instrument of world-making through people’s traveling, transaction, displacement, appropriation, and settlement. Following Rogaski’s (2022, 19) treatment of Manchuria as a “spatial assemblage” that accommodates a plurality of knowledge- and place-making, we now turn to the crafting of *Shengjing Panorama* as a visual historiographical project that assembled seemingly unlikely partnership between Shenyang and Los Angeles deriving from the peripheries of contemporary panorama practices.

5 Socialist Routes

Backtracking *Shengjing*’s creation, the very idea of this panorama would not have been conceived without the artists on both the Los Angeles and the Shenyang sides traveling to places, in physicality and imagination, that decentralize their respective institutional training to engender a third space. In 2005, the International Panorama Council (IPC) partnered with the Lu Xun Academy in Shenyang to host the Thirteenth Annual International Panorama Conference (IPC 2023). This event connected Sara Velas, founder of the VP, and the three future *Shengjing Panorama* painters (Fig. 6). Velas reunited with two of them again at the 2012 IPC conference in Bulgaria. A year later, an Andy Warhol Foundation for the Visual Arts Curatorial Fellowship flew Velas to multiple Chinese cities to study the state-sponsored panoramas, including Shenyang, Beijing, Jinan, Zhengzhou, and Jinggangshan (Mao’s revolutionary cradle before Yan’an). Each city bears a benchmark memory of a military event that the Chinese Communist Party underscores as a major step to its inevitable leadership of a new republic.

On one of those trips, Velas took a detour to Pyongyang in North Korea to visit the panorama *Taejon Liberation Operation* completed in 1974, a battle during the early years of the Korean War. It was the same North Korean panorama that a Chinese artist and curator visited in 1979. Xia Shushen was a member of the first museum delegation the Chinese government and military sent overseas, to North Korea, to visit a panorama. That experience led to Xia becoming an earnest advocate for building war-themed panoramas in mainland China and bringing the IPC to Beijing, its first non-European location, in 2001 (Xia 2001). According to Xia, the delegation to Pyongyang was assigned the task to seek new methods of building museums in China at the dawn of the country’s cautious and gradual opening to



Fig. 6: Attendees of the Thirteenth International Panorama Council Conference in Shenyang, China, September 22, 2005. Printed photograph from the collection of author Sara Velas.

the market economy (Xia 2014, 6). Foreseeing the imminent danger of a sudden ideological collapse and economic dependence on the United States, the Chinese leadership held tight onto continued, and possibly diversified, patriotic education programs that would retain the metanarratives of nation-building as the younger populations were incentivized to aspire for professional and economic growth (Hoffman 2010). Xia, collaborating with the Chinese People's Revolutionary Military Museum, led a second panorama trip to the Soviet Union in 1987, in preparation for creating China's first 180-degree semi-panorama in Beijing, *The Marco Polo Bridge Event*, to commemorate the beginning of the Second Sino-Japan war in 1937, and the first 360-degree panorama painting, *The Capturing of Jinzhou*, a decisive battle in Manchuria in 1948 during the Chinese Civil War (1946–49) that paved way to the Chinese Communists' nationwide victory (Xia 2014). The latter project was painted by numerous artists including a few from the Lu Xun Academy, a move that the school made ostensibly to renew its institutional commitment to the party-led patriotic education by revitalizing its origin story in Yan'an.

The traveling of Chinese panorama artists in the 1980s, a decade where many Chinese intellectuals sought to reconnect with the "Chinese Enlightenment" era (contemporaneous with the depicted time in *Shengjing*), formed a cultural transaction route of North Korea-Soviet Union-China that was both rooted in and growing beyond the socialist revolutionary art praxis. Given the extent to which the state and the military were involved in the battleground panoramas' production, the socialist route exemplifies the use of virtual landscape as a top-down initiative of political and emotional territorialization—a way of prescribed knowing. The war-themed landscapes in the

Chinese panoramas are distinct from those that encourage the commodification of the visible. The former are sacred, unquestionable, and do not tolerate different interpretations. The spectator is not going to become a flâneur/flâneuse who wanders aimlessly and leisurely in the virtual world, but rather a disciplined and surveilled subject of the state. The feeling of being seen is a mandatory experience in the Chinese panorama museums. Oftentimes, one or two security guards stationed in the rotunda cast the surveillant's gaze on the spectators. The "imaginary illusion of mobility" that Anne Friedberg describes in *Window Shopping* (1994) still applies, only that it is not for consumerism and voyeurism, but patriotism.

Geographically, Shenyang was where Velas's traveling intersected with the working orbits of the Chinese panorama artists. But the slightly wayward pursuit of artist built folk art environments that loosened the institutional and mainstream grip on both parties served as an aesthetic middle ground. In other words, established professional and institutional support conditioned the Shenyang-Los Angeles partnership, but the latter was also readily becoming its own life and engaging new audiences. The *Shengjing Panorama* painting derived from this partnership embraced the aesthetics of the ephemeral from its design and would embark on a journey abroad.

6 Traveling Connections, Intersecting Imaginaries

As teachers and artists, Li Wu, Yan Yang and Zhou Fuxian had participated in large-scale patriotic panorama projects initiated by the state and organized by the central and regional military commissions, much like *Storming Jinzhou* and *Jinan Campaign Storming of Heavily Fortified Positions in the City* that Velas visited (Li 2017). They displayed unprecedented focus, skill and dedication to this media form, fomenting in Velas the idea to create a collaborative work that would negotiate an artistic and thematic space on the periphery of the Chinese state-sanctioned panoramas. The providence in finding each other and experiencing (and experimenting) a mostly wordless exchange of reverence and like-mindedness laid the foundation for the *Shengjing* project that would be integrated into future projects of the VP. Into whatever would come out of this mutually anticipated collaboration the partnering artists inscribed their curiosity and imaginaries of each other's city's cultural aura along with a historicized critical affection for their own cities.

The subject matter of *Shengjing Panorama* was chosen collaboratively and grew out of discussions on the architectural history of Shenyang, the use of the panoramic art form in the past and present, and the context of where the panorama was planned to be exhibited—inside the Union Theatre. The years 1910–1930 resonated for many reasons, including the fact that these years were the heyday of the Union Theatre (built 1910). It was also a time when amateur photography, practiced occasionally by traveling missionaries and emissaries from various European countries, allowed for

an abundance of visual material for the painters to use to reconstruct the “lost world” of Shengjing. Two interrelated questions may have been crucial to the design of the panorama as the subject, not destination, of transnational traveling: What kind of “virtual” world will *Shengjing* allow its viewers to peek into? And in return, what kind of philosophy of mobilized sighting will the panorama like its viewers to nurture in a sight that denormalizes their bodily sense of place as fixed and bounded, and of time as linear and homogeneous? We argue that in inviting the audience to experience what Harri Mäcklin (2022) calls the “paradox of aesthetic immersion”—be[ing] in two worlds at once, and yet . . . not properly in either”—*Shengjing Panorama* is designed not to tell “a tale of two cities,” but rather to evoke new or renewed transurban connections unbounded by the frame of nation-state (Robinson 2016, 3–29).

Velas secured the partnership of Guan Rong, long-time friend and painter of the *Grand Moving Mirror of California*, to join the project and assist with actualization and translation. Velas and Rong visited the artists in Shenyang multiple times and toured significant locations that would later be integrated into the painting, including the mansion of Marshal Zhang, the Zhaoling Tomb in Beiling Park, the Imperial Palace Museum and Shenyang Railway Station. Other documentation and research was conducted at the Guangdong Movie Park, a Hollywood/Universal Studios-style backlot where buildings of various time periods were constructed for the purposes of filming historical dramas and epic costumed television series. It was an inverse to how Hollywood set pieces and indulgent theatrical designs were repurposed into the architecture of Los Angeles’ New Chinatown in the 1930s when the construction of Union Station railway depot displaced the Chinatown community.

In spring 2015, the painters sent digital images of three sketches done on paper showing various iterations of a view of Shengjing. The first focused on landmarks such as the towers and gates of the city wall, the Wenxiang Pavillion and the Confucius Temple. The second sketch emphasized public life, including the five “Largests” on Central Boulevard—the largest department store House Ji Shun Si; the largest shop that sells watches, clocks and glasses, Heng De Li; the largest pharmacy Tian Yi Hall; the largest stationary shop Li Zhan Xin; and the largest imported goods store Tong Yi Cheng. The third sketch focused on eight particular scenes of Shengjing—Nurhaci’s Tomb on Tianzhu Mountain surrounded by pine trees and cedar trees; local dignitaries appreciating lotus flowers; merchants shuttling goods on Shen Water (Shen Shui, known as the Hun River today) during summertime, to name a few. Curators and artists settled on a fourth variation that incorporated elements from all three sketches, with a focus on everyday life over the officially ceremonial.

The final installation consists of a 360-degree painting displayed in the nineteenth-century style with an umbrella obstructing the top edge of the canvas and sculptural *faux terrain* interrupting and concealing the bottom edge to create the illusion of a limitless view within an encompassed domain. The *faux terrain* features houses, lamp posts, foliage, the remnants of the old city wall, horses, chickens and people – getting their hair trimmed, selling vegetables, having their fortunes read. Uti-

lizing architectural methods of perspective representation, the painting is divided into the four cardinal directions to illustrate the local customs and culture of Shengjing during the time period of 1910–1930, including: religious ceremonial practices, marketplace and trading methods, foreign-designed and native historic architecture, transportation hubs, rituals of public life, and the diverse scope of the city (Fig. 7). The painting is a close approximation of the city's geography and features four gourd-shaped Buddhist pagodas dating back to 1643, in the east, west, north and south (which remain in the city today) to help viewers pinpoint their direction. The final painting depicts more than 300 people and over 1000 buildings based on extensive research conducted at city archives and through consulting with local historians.

Contrasting this final work with *The Capturing of Jinzhou* mentioned above, which represents the normative socialist ideal of panoramic art for the socialist nation, can help develop a better understanding and reading of *Shengjing Panorama*, both in how it differs from what came before and how this difference is the result of the specific “traveling” that the artists made in their movement towards its creation (Fig. 8). Since *The Capturing of Jinzhou*, China produced ten more 360-degree panoramas reminiscent of the nineteenth-century style (Li 2017; Xia 2001). Li Wu, Yan Yang and Zhou Fuxian worked on most of them. *Shengjing*, however, diverges from the rest for it travels, embraces the ephemeral instead of the permanent, and does not subscribe to the teleological narrative of nation-building. It prompts us to begin inquiring about the “routes and roots” (DeLoughrey 2009) of panoramas—whether the traveling of panoramas may be an overlooked aspect of this mass media form invented to illustrate a world in motion. That *Shengjing Panorama* is designed to be part of LA raises new hope of creating symbiotic relationships between travel and place.

Likening immersive media to portals is not a new metaphor. But getting beyond the abstraction of traveling theory—a metaphorical, disembodied postcolonial empathy for the “Other” place that is sometimes related to the immigrant theorists as “home”—has been the ironic struggle of postcolonial traveling theorists who reinforce and live in the neoliberal power of the western university that colonizes and gentrifies its surrounding neighborhoods. What is critical about *Shengjing* is that it is an event the VP curates to nurture its relationship with local neighborhoods and its dedication to understanding and showing them as porous places. *Shengjing Panorama* creates aesthetically “radical” connections, through a palimpsestic faux landscape, to multiple colonial Chinas that are ironically alienated by new knowledge-production colonies around universities where empathy with place hardly becomes less academic and “metaphorical” (Mäcklin 2022). As Pheng Cheah has enumerated, the fragmented colonial Chinas within Qing's proper included “colonies (British Hong Kong, Portuguese Macau, Japanese Taiwan) and territories leased to Russia, Britain, Germany, and France, where Chinese sovereignty was suspended . . . treaty ports with foreign settlements governed by extraterritorial law and areas of foreign residence that facilitated imperialist interests without full colonization, as well as coastal and inland zones of foreign colonial influence adjacent to European colonies” (Cheah 2022, 11).

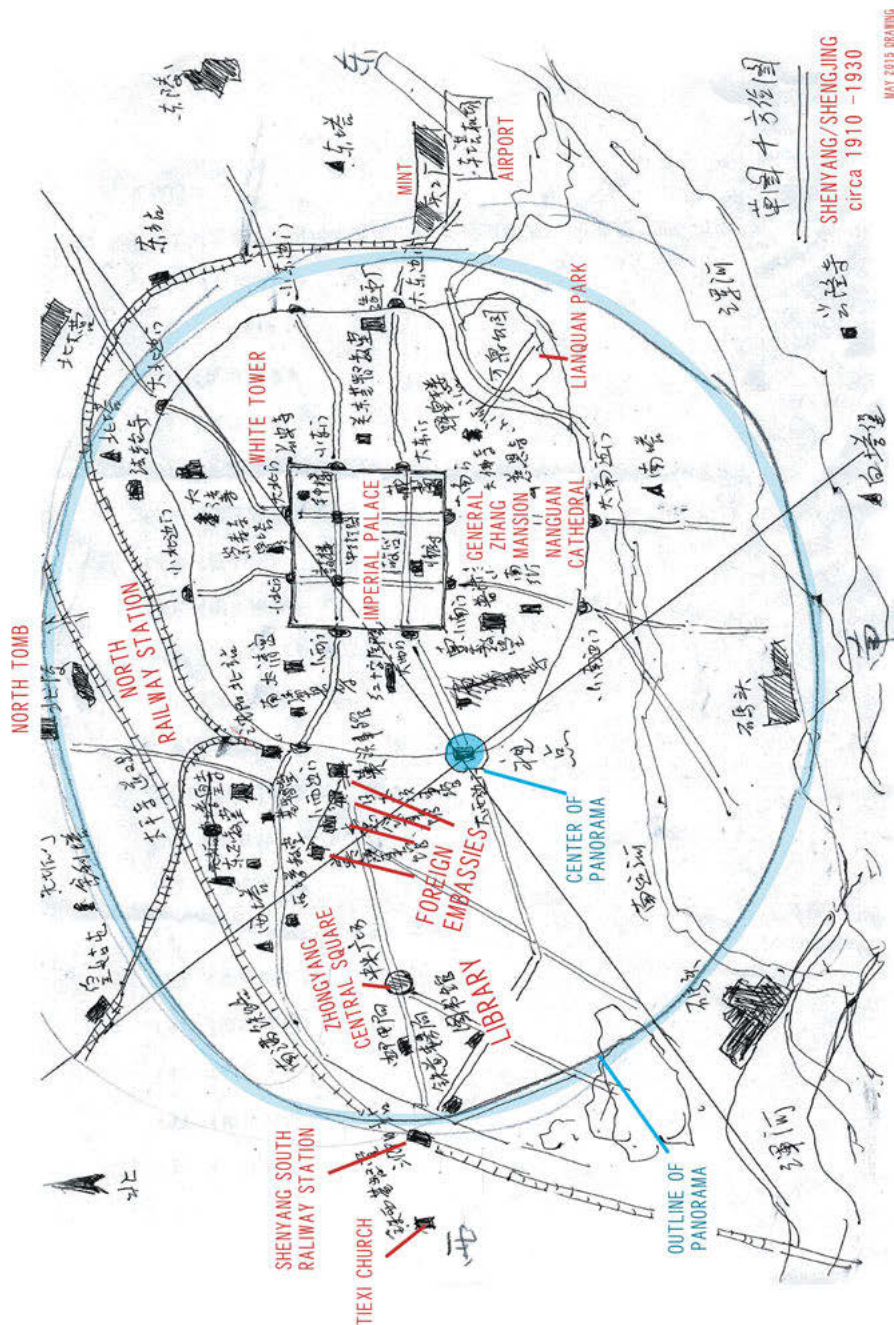


Fig. 7: Li Wu, black and white sketch showing an overhead view map of planned *Shengjing Panorama* highlights with colored labeling by Guan Rong and Sara Velas. Diagram courtesy of Velaslavasay Panorama, 2015.



Fig. 8: Excerpt of *The Capturing of Jinzhou* (Song Huimin, Xu Rongchu, Gao Quan, and others, Painters, Xia Shushen, Curator, 1989) painting and terrain, compared with an excerpt of *Shengjing Panorama* (Li Wu, Yan Yang, Zhou Fuxian, Painters, Sara Velas and Ruby Carlson, Curators, 2019) painting and terrain. Images, author Sara Velas, 2005 and 2019.

These transoceanic Chinese (is)lands configured an archipelagic shape of Sinosphere, a cultural and literary domain loosely and intimately connected through the lingua franca of the Chinese. Notably, as an event, *Shengjing* initiates these connections from within the VP but has no obligation to make the VP a particularly Chinese space. In fact, evoking imaginaries of all these different colonial Chinas at once and chaotically, the VP has deterritorialized China, in both geographical and imaginary terms. In doing so, it also releases “China” from the position of a spectacle, the real/perceived “Chinatown” with an infinite interior that has historically imprisoned all Chinese to be performers to a white western cosmopolitan audience (Yu 2020).

7 The (Actually) Traveling Panorama: Shenyang to Los Angeles

Re-presenting a multiply-colonized city in motion, *Shengjing Panorama* itself traveled across the Pacific Ocean to arrive at the Velaslavasay Panorama. After being created in Shenyang, in the gymnasium of the Tiexi School for the Deaf—a specialized high school for hearing-impaired students—it embarked on the journey to LA in May 2017. Rolled up and crated in preparation, the logistics were handled by a company serendipitously named Guochuang Global 360 logistics. The crate was loaded into a truck and driven to Beijing (Fig. 9). There, it was loaded onto an airplane as cargo and flown to LAX airport. Then, it was processed and delivered to a warehouse in Pa-coima, where Sara Velas and the VP’s technical collaborator Oswaldo Gonzalez transported it to the Union Theatre for installation.



Fig. 9: Loading a crated *Shengjing Panorama* at the Tiexi School in Shenyang, China preparing for transport to Los Angeles, CA, USA on May 11, 2017. Image, Velaslavasay Panorama, 2017.

The VP is located at an intersection of LA's Spanish and Anglo urban planning grids, a junction where the two colonialisms' specific histories, orientations to the world, languages-scapes meet. In the early 1900s, both LA and Shenyang were heavily impacted by railway boosterism. Japanese investment in Shenyang also created an intersection of mapping angles. Grounded in the meaningful multiplicity of colonial histories that wired Shenyang and LA, it becomes evident that we are not seeing the *Shengjing Panorama* as a hybrid of distinct nineteenth-century European and American, twentieth-century Soviet, and postsocialist Chinese "genesises" of panorama art training, but as an artwork that takes on a coherent life of its own, like the city it depicts, growing an inter-marginal identity "with a history and a discrete geographical contour" (Crossley 2000, 49). To be clear, the artists' practices, ethos, and aesthetics undoubtedly come from within the traditions of training, but that should not prevent us from recognizing that the starting point of the *Shengjing* project was outside the traditions. Materially, the neighborhood that the University of Southern California has partially colonized and named "University Park," and imaginarily, the well-known and less-known cultural aura of the two cities with shared tales of colonial metropolitanism, conditioned *Shengjing's* creation. In this light, *Shengjing Panorama* is comparable to the postcolonial, post-modern traveling theories that do not naturally associate location (of their assemblage) with a stable home or pledge to a common experience with a cultural center or past tradition (Clifford 1989). And yet, no less important, it is a material built environment, not a metaphorical empathy, that exists to make peculiar kin with place.

It is worth interpreting the traveling panorama as a methodology of knowledge production, one that can be situated among other contemporary methods of transporting, superimposing, blending and stitching together multiple landscapes that transgress normalized boundaries, whether natural, built, or imagined. These meth-

ods include 360-degree cameras, virtual reality, and augmented reality. But it is also important to cast a critical eye on the consumerist subjectivity and the (techno-)neoliberal fantasy of individual mobility in these virtual travels and landscape-surveying. Rather than simply getting lost—to be a flâneur with princely privilege to override the reality/fiction boundary and to feel at home away from home (Baudelaire 1964, 34)—there needs to be “a field guide to getting lost” (Solnit 2006). It is a flâneuse’s walk, a semi-structured, open-ended programming that properly disorients the (gendered) spectator, pluralizes the “here and now,” and encourages her to “place [herself] as closely as [she can] to the environments” (Rogaski 2022, 15) while cognizant of, and respecting, the impossibility of exhausting the knowledges of a place. Such is the VP’s approach to panoramas, museums, programming, and art in general.

The thematic focus of the VP, including events and exhibits, shifts to incorporate every new panorama while preserving ephemera and residue of what came before in fragments and refractions. The *Nova Tuskhut* (2014–2024), an immersive exhibit of a late nineteenth/early twentieth century Arctic explorer’s hut with a painted diorama of the terrain and a 12-minute day-to-night cycle, was created as a companion for and remnant of *Effulgence of the North*, the Arctic panorama, before that 360-degree painting was removed to make way for *Shengjing*. A recreated section of *Panorama of the Valley of the Smokes* (2000–2004) hangs above a diorama of the *Tswuun-Tswuun Rotunda*, the demolished former home of the VP on Hollywood Boulevard. These remnants point to the ever-erasing progression of urban renewal around LA and every major city, including Shenyang. The Union Theatre has survived these many years and punctures its historical influence into curatorial decisions, including the era depicted in *Shengjing Panorama* (1910–1930), which begins with the year the Union Theatre was built – again the past and present Shenyang and LA are emerging from and submerging under the other (Fig. 10).



Fig. 10: A visual example mapping past and present Shenyang and LA. *Los Angeles, Shenyang, Shengjing and Hollywood as Palimpsest*, digital collage by Sara Velas, 2022. Image courtesy of author Sara Velas, 2022.

8 “Interlapping” Sound-and-Lightscape

When depicting the archipelagic territory of the Caribbeans, the Barbadian poet Kamau Brathwaite employs the term “interlapping.” Different from *overlapping*, *interlapping* describes “an unpredictable cutting back and forth, as well as a type of mutual overlap or, better, of mutual palimpsest” between two locales or typologies of place (Roberts 2021, 28). We borrow this term to illustrate the layered sounds and sights of Shenyang and LA that repeatedly emerge in the other. Through this example we are able to behold a fuller picture of the Velaslavasay Panorama’s programming methodology and aesthetic episteme that engage its visitors with unbounded, entangled, and palimpsestic places.

The panorama has a 40-minute light and sound cycle that recreates with archival and present-day sounds the merchant’s shout and the street physician’s bell, the pebbles ground by wheels of a passing wagon or motorcar, the birdsong of a Red-billed Leiothrix, the ferryman’s singing by the dock and the departing train’s long whistle, distorted helicopter noise and electronic music from a boombox that disrupt the “eternal” image, shifting the narrative from “what had been” to “what could have been.” The city remembers, in the archives and in a fabricated landscape elsewhere, even though that world is long gone.

The composite soundscape composed by Berlin-based artist Moritz Fehr combines contemporary field recordings taken in Shenyang and Los Angeles into a third, virtual space: *Shengjing Panorama*. The 16-channel speaker system includes one “container” sound file that is fed into all of the individual speakers, with disparate sounds layered and spatially dispersed to create a panoramic ambisonic surround sound. The container is a singular, 40-minute field recording taken during golden hour in Griffith Park, the largest park in LA. Processed recordings of a musical improvisation by musician Wu Wei on the Sheng, Guzheng and percussion create a polyphonic resonance with the far reaching past as proto versions of the sheng were found from 1100 BCE. Some field recordings were made during 2015 and 2017 trips to Shenyang at locations including the Sacred Heart Cathedral, Middle Street and Beiling Park (location of the Zhaoling Tomb), the largest park in Shenyang. A car horn can be heard, a live recording of a 1920s Franklin from the bespoke collection of Dydia DeLyser and Paul Greenstein, who doubles as the VP’s neon restorer, both being frequent collaborators on events and projects. Most panoramas around the world utilize a voiceover narration in their soundscapes describing what the painting represents or what the viewer sees, but the project of *Shengjing Panorama* is to interlap these cities, to transgress the borders and to create an environment that can be felt in the body more than known through textual history.

The soundscape is synced with a light cycle designed by Taiwanese-born and LA-based artist Chu-Hsuan Chang, representing a shift between night, day and beyond (Fig. 11). The light cycle is a tool to illuminate the veiled qualities of the painting, exploring transformations of hue and tone that the oil paint makes under changing light, sometimes losing its vibrant color and becoming close to black and white. The



Fig. 11: Chu-Hsuan Chang, Lighting Designer, Moritz Fehr, Sound Designer, 40 minute sound and light cycle of *Shengjing Panorama*, completed 2019. Image, Velaslavasay Panorama, 2022.

top lights have a circular sequence that mimics the passing of clouds across the sun, referencing the early days of the panorama when skylights were utilized to illuminate the painting and thus transformed in real time as the weather changed. Many viewers are convinced the painted canvas itself is rotating, when the only real movement is the body of the viewer. In these moments, the viewer confuses their body with the painting and vice versa, or interlaps them.

9 Traveling Publics: *Shengjing/Velaslavasay* as Public Interface

In exploring the multifaceted interactions within the realm of the “Traveling Publics,” this final section of the paper delves into the dynamic relationships that have unfolded with the public since the inauguration of *Shengjing Panorama* in 2019. Since that opening, many people have traveled to the panorama and the panorama has traveled, at least in imagery and through a variety of presentations to many places. In this way, the Velaslavasay Panorama exists as a unique public interface that weaves together diverse publics near and far through its events and programming. From the individuals physically traveling to the panorama to its presence in various media, conferences, and academic circles, the panorama becomes a catalyst for constructing

publics around significant themes such as colonization, media histories, minor cosmopolitanisms, and urban change, all projected through the lens of the lost world.

The Chinese painters made their maiden voyage to the United States for the opening of *Shengjing Panorama* and to place finishing touches on the terrain and canvas in between trips around the city to places like Forest Lawn Museum to see Jan Styka's *Crucifixion* panorama, The Autry Museum of the American West, Universal Studios and to more far-reaching iconic destinations like the Grand Canyon. *Shengjing Panorama* was unveiled to the public at 8:08 pm on June 1st, 2019 during the event "Shengjing Panorama Limited Express," wherein the gardens and grounds of the VP were "transformed" into a train station platform with buskers, dubious wrist watch dealers, roaming puppeteers from Bob Baker Marionette Theatre, snack cart vendors, ticket takers and passengers in transit (Fig. 12). French fries were offered to the guests, procured in bulk from Pete's Burgers, the neighborhood eatery since 1972. Various sounds rang out throughout the entire space indicating travel: bells rang at random intervals, a disembodied voice called out time tables through the loud speaker and the conductors (with digital voice amplifiers) shouted directions on and off the "platform." Guests were given boarding passes (only eight people were allowed in the panorama exhibit at a time) and station agents, costumed by longtime collaborator and artist Lun*na Menoh, roamed around with timetables alerting ticket holders of their impending journey. The following week marked the first regular open day of the new regime; to formalize the moment a ribbon cutting ceremony was officiated by the three painters with three pairs of large scissors. This event was co-led by neighborhood official Aurora Becerra from the University Park Action Coalition, a group fighting against local displacement and advocates for community resources, and representatives from West Adams Heritage Association. Both organizations advocate for preservation and conservation in the VP's historic neighborhood.

Occasionally emigrants of Shenyang stumble into the VP and are astounded to see a facsimile of their hometown. They will locate their old neighborhoods and point out what is most familiar, relaying the accuracy of the layout and their ability to grasp their orientation within the conjured space. Other visitors who have not yet had the pleasure of visiting Shenyang in-person produce interesting interpretations of what the view might be: some hear the name and confuse it for Shanghai, some have said Los Angeles' or San Francisco's Chinatown, always keen to notice the mixture of architecture that problematizes their understanding of "a view of a city in China," especially the domineering presence of the Sacred Heart Cathedral. These (mis)perceptions on the one hand are evidence of Shenyang's obscurity beyond China, but on the other, attest to the recurrence of colonial Chinese "(is)lands" overseas strung together by their common fragmentedness. Contrary to the pleasurable paradox Baudelaire's "perfect spectator" feels to be at home away from home, seeing but comfortably hidden from the world he travels (Baudelaire 1964, 34; Friedberg 1994, 29), the VP's visitor may experience various degrees of disorientation as the sights and sounds of *Shengjing* recalibrate the route the visitor usually takes from wherever they call "home" to knowing "China."

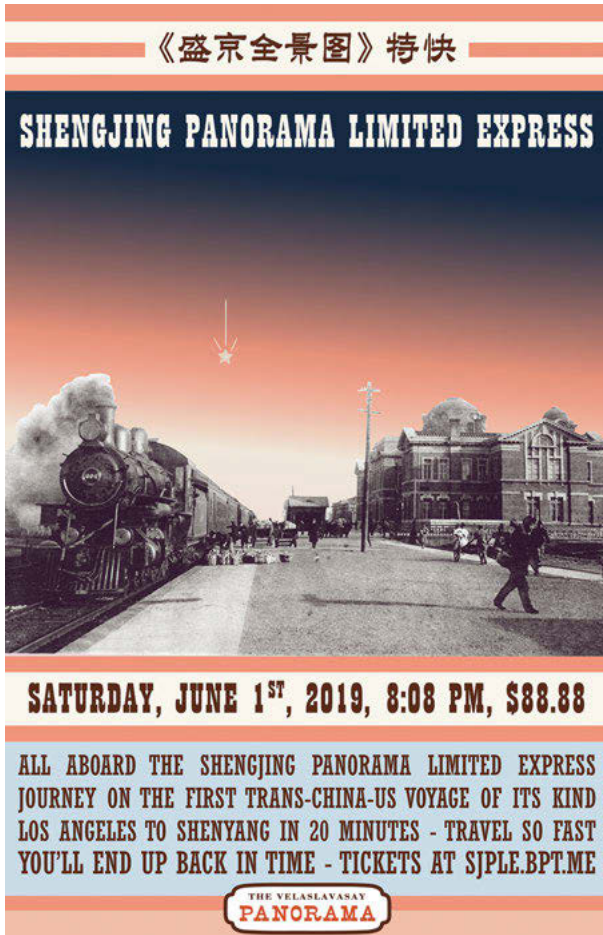


Fig. 12: Sara Velas, poster for “Shengjing Panorama Limited Express,” an event to officially debut *Shengjing Panorama* held June 1, 2019. Image utilizes archival collage elements and digital typography. Image, author Sara Velas, 2019.

The fractals of colonial Chinas that *Shengjing* presents and connects with defamiliarize the imagined “homogeneous, empty time” of China. The virtual world, open to the traveler but containing inaccessible amalgamation of urban temporalities and infinite, un-consumable horizons, redirects the “paradox of aesthetic immersion” (Mäcklin 2022) to the gendered, physically and psychologically locatable body of the imperfect spectator.

An integral part of the project’s design is to have *Shengjing Panorama* evade the grip of the male-dominant, homogenized state narrative in what the China historian Gail Hershatter calls the “campaign time” and embraces instead the unarranged, chaotic, and plural lived times (Hershatter 2011, 4). That the Velaslavasay Panorama is run by women artists and curators contrasts the nearly all-male crew of the Chinese

painters; nor can we take for granted the eminent presence of women in the LA/ American (and European) art world. The history of the flâneuse, the feminine/feminist kinship with the city, prepared the creation and operation of the VP. While the VP space is not purposefully gendered, its curators, executives, and programmers are not derived from the nineteenth-century male painter and poet that Baudelaire deemed the flâneur. Indeed, it is the history of the flâneuse of museums and cities that is discernible in the panorama space and its surrounding art programs. Of the women who produced the VP's public interface, the lead "conductor" for the debut *Shengjing* event was writer-comedian Megan Koester, a frequent VP collaborator, and pivotal female artists involved in the installation included Guan Rong, Sara Velas, Ruby Carlson, Bridget Marrin, Anna Tanner, Andy Cao, Sara Bautista and Ava Salzman.

When visiting a landscape in the flesh, a flâneuse in an unknown city is rarely confronted with its immediate historicization but given an opportunity to absorb the environment and let the landscape speak for itself, presenting itself in a way that reveals more about the viewer than the view. *Shengjing Panorama* evokes the memory of Michael McMillen's first full-scale tableaux *Central Meridian*, a theatrical simulation of a garage the artist created for the 1981 LACMA exhibition *The Museum as Site: Sixteen Projects*. "One of my goals originally was to build a time machine that would take the viewer out of the museum and into another space instantly," McMillen says. "We go from light to dark, day to night, and another time." Detritus, castoffs, and objects found around the streets of LA constituted a "walk-in assemblage" where history came close to the visitor in a neighborly environment. "It's a persona that every viewer constructs in their own mind based on the artifacts," McMillen says. "I think [the viewers] are really as much a part of the work as the artist. They really complete it" (Nguyen 2021).

Since the unveiling in 2019, events at the VP create an indexing of ways to "experience" *Shengjing* in LA, in terms of lost worlds steeped in early 20th century industrialization. There was a three part film screening, *Electric Shadows On Penglai Mountain* (2021), showing films made in China that explore loss and everyday life in their own way. *Spring In A Small Town* (1948) opens with a woman wandering along ruins of the city wall in Jiangnan in the aftermath of the Second Sino-Japanese War; *Scenes of City Life* (1935) has iconic scenes illustrating the magic of film and cinema-going in vibrant Shanghai; and *For Fun* (1992), depicts life among members of an aging opera society in a rapidly decaying/redeveloping Beijing. The opening sequence of the film is a long tracking shot (suggestive of a filmic moving panorama) of the busy Beijing streets in the late afternoon that reads like an effort to preserve the landscape in a place and time as an archaeological record as much as a tool for setting the context of the film.

These events traverse landscapes across space and time, ping-pong between Los Angeles and cities in China, carving routes taken by travelers for generations, some known and many unknown. In February 2021, the VP unveiled a video made in collaboration with Bob Baker Marionette Theater as part of their annual festival celebrating Bob Baker's (with his life partner Alton Wood) legacy since 1963 of presenting and

creating his own DIY universe of marionettes. For the video the VP gave a tour of *Shengjing Panorama* to Happy The Dog (led by Alex Evans) and had Happy watch a short film in the theatre made with members of the Shenyang Visual Archive (SVA), a group of autodidact archivists who explore their city to unearth historic architecture and pre-twenty-first century public infrastructure. In the video a representative from the SVA discussed the architectural history of Shenyang Railway Station, deeming it a mixture of German Baroque Revival style and British Victorian.

The position of all of these events is from the perspective of the wanderer, the flâneuse, the passerby who regards the city and questions its aesthetic arrival as much as their own origin/destination. This way of looking and traversing applies to landscapes abroad and at-home, placing both loci into the position of the knowable unknown. With this perspective in mind hanging heavily during the lockdown of the pandemic in 2020, the VP devised a performance event designed for the passerby called *Union Square Florist Shop*, a recreation of an imaginary mid-century florist shop (that opened in 1937) whose innerworkings and everyday tasks such as cleaning, floral arranging and dubious financial dealings, were visible from the street through the ample lobby windows, lit like a theatrical stage. Passersby were allowed to watch from the sidewalk for as long or little as they would like but not enter the space as a radio-broadcast soundscape of decayed ballroom music and consumer-driven ads played outside. The performance incorporated the Union Theatre's own architecture as a lead character, the façade designed with the spectator in mind and the lived experience of LA streets.

On February 9, 2020 (the last in-person event before the COVID-19 pandemic), a Lunar New Year celebration was held at the VP with musician Sue Chang from LA groups Spring Thunder Music Association and Chinese Kwun Opera Association performing the Ur-hu. Sara Velas gave a presentation of the making of *Shengjing Panorama* and Paul Greenstein (who contributed to *Shengjing Panorama's* sound installation and periodically restores the VP's neon marquee) gave an overview of images and recollections from his LA Chinatown archive he had acquired since late 1978 when he began booking punk shows at Madame Wong's restaurant, in the original 1938 Rice Bowl location (Wojciak 1979).

As we reflect on the "Traveling Publics" it becomes evident that the *Shengjing Panorama* serves as more than a mere visual spectacle but instead has become a site for interfacing with a variety of publics. In this way it is a catalyst for transcending geographical boundaries and fostering connections. In laying the groundwork for transpacific conversations, collaborations, and travels between Los Angeles and Shenyang, the panorama emerges as a powerful agent in forging these complex dialogues (cross-cultural, cross-temporal, cross-conceptual). Its influence extends beyond the physical space, resonating through social media (Instagram), in features of publications such as the *Los Angeles Times*, conference presentations, and academic circles through ongoing publications and research projects. The panorama not only gives back to the feral-DIY Los Angeles art practice, it emerges from on the VP's end, but

also engages with a diverse set of communities, arts organizations, and historical initiatives in Los Angeles through programming, and contemporary Shenyang, such as the Shenyang Visual Archive. In effect, this active process of generating and engaging with lost worlds becomes a living bridge that spans across time and space, addressing present-day concerns in Los Angeles, Shenyang, and beyond. The panorama's continued impact highlights its role as a dynamic and evolving interface that propels us towards a future characterized by increased connectivity, collaboration, and understanding.

10 Conclusion

This essay has explored how the *Shengjing Panorama* transcends the conventional narrative of panoramas that depict a single place and time to present something that theorizes a more open-ended consideration of how to present a lost world. It centers on how the *Shengjing Panorama* was generated from the relationship between the two cities—Shenyang and Los Angeles—that were central to its conception, creation, and installation. We argue that it is this reciprocal exchange of ideas, concepts, ethos, aesthetics, and practices traveling through the artists and the overall project, which has given this particular panorama the power to evoke and theorize a multi-layered and multi-dimensional lost world. The exploration of the historic Shengjing-Los Angeles pairing, through the medium of panorama, rather than existing as a random combination of places, instead becomes a methodological and heuristic tool for revealing inter-lapping stories, histories, and theories of colonial metropolitanism across space and time (Fig. 13). In this way, *Shengjing Panorama* not only evokes the lost world of the past but theorizes its ongoing impact on the present and beyond.



Fig. 13: View from the rooftop of the Union Theatre, home of Velaslavasay Panorama, Los Angeles, California, USA, May 2020. View from the rooftop of the Liaoning Hotel, looking out on Zhongshan Square, Shenyang, China, May 2017. Images, authors Jon Banfill and Ruby Carlson, 2020 and 2017, respectively.

In particular, by centering the concept of “travel” (and traveling theories) in different ways, from the conceptual or theoretical to the real and physical, we develop a way to think about how all these different resonances come together to make the final experience.

The various types of travel discussed—historical, aesthetic, conceptual, interpersonal, physical and logistical, and the travel of the public to it—coalesce to form the theoretical concept of a “traveling panorama.” This multifaceted notion encapsulates the panorama’s layered meanings of travel, offering conceptual tools for engaging with both specific and generic aspects of lost worlds, and the composition of cities and places, the interconnectedness of places and ideas.

Most productive is the meeting through the travel of three traditions, or modes, of panoramic art—the state socialist art school of Chinese revolutionary praxis, the feral-DIY version of Los Angeles, and the European traditions mediated between them. Here a coherent, rather than hybridized, tradition of artwork emerged from within the reflexive effect of each other’s ideas, which is still being unpacked within the way *Shengjing Panorama* continues to be theorized and hosts public events.

Two significant takeaways emerge from this exploration. Both emphasize the interconnectedness of these seemingly disparate locales through themes such as cultural hybridity, colonization, and modernization. Firstly, the *Shengjing Panorama*, and the larger Velaslavasay Panorama project, serves as a vehicle for visitors to comprehend something about elsewhere, offering a unique lens through which to view Shenyang’s past. However, this is done in relation to their contemporary experience of being within Los Angeles. Secondly, this relation in turn enhances the experience of thinking of Los Angeles by fostering an immersive engagement about Shenyang’s past that corresponds in a loose but productive way with Los Angeles’s past of the same time.

In this way, the experience can prompt contemplation of Los Angeles’s own lost worlds, remnants of which exist within both the built environment and the visible/invisible social divisions that exist in the neighborhood environs that surround the Union Theatre. The public nature of the experience becomes apparent when the evoked lost world mingles with the tangible reality of the city, creating a double vision. One enters from the sunlight, into the immersive darkness of Shenyang’s lost past, then emerges back into the sunlight of LA with senses redefined by the experience of immersive travel. This relationship parallels the interplay between a film playing in a dark theater and the existence of the city outside—a cinematic experience that echoes the Union Theatre’s history, and cinema as a portal or threshold to other worlds.

Through its immersive power, *Shengjing Panorama* transcends the boundaries of time and space, inviting viewers to participate in the perpetual journey of understanding lost worlds and their relevance to the present. *Shengjing Panorama* provides viewers with an opportunity to question their individual orientation with the past and present, offering a lens through which to engage with history without imposing

predefined answers. Beyond its role as an art form, it becomes a versatile tool, serving as a pedagogical provocation, experience, object, interface, optical illusion, event, and even a dream.

Author Biographies

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Ruby Carlson is a Curator, Writer and Director of Programs at the Velaslavasay Panorama. From 2015–2018 she served as the elected Secretary of the International Panorama Council. She studied literature and linguistics at George Washington University and is an award-winning cinematographer for media and fine art projects. Since 2010 she has participated in PLACE, a critical return to the discovery of Freud and its construction in the topology introduced by J. Lacan.

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Kohki Watabe

Immersion and Manipulation of Time in *The Legend of Zelda: Breath of the Wild* (2017) and *The Legend of Zelda: Tears of Kingdom* (2023)

Abstract: This study examines the mechanism of immersion in *Breath of the Wild* (2017) and *Tears of Kingdom* (2023), which have won various video-game awards and have been both commercially and critically successful, and it compares them to visually immersive media such as panorama and film. First, this study categorizes visual immersion in the modern era into two types: cinematic virtual reality (VR), from panoramas and cinema to 360-degree camera-based video expression using optical reproduction techniques with camera obscura; and three-dimensional computer graphics (3DCG), which has been developing rapidly since the late twentieth century and uses computers rather than optical devices to create virtual spaces. The two games belong to the latter 3DCG. However, they also have the characteristics of realistic films in the former cinematic VR tradition: the characteristics that André Bazin noted about Neo-realismo (New Realism) and Orson Welles films, such as location shooting, the use of amateurs, long takes, and deep focus. The fact that *Breath of the Wild* and *Tears of Kingdom* have a realist tendency means that they reflect the issues of time and space pointed out by realist film theory. Bazin noted a mummy complex in the history of plastic arts, a human desire for protection against the passage of time. The two games embody the desire in three ways: the storyline in which the contemporary problems are solved by revealing the past events; the ruins embodying the Romantic aesthetics of the sublime are reproduced in the un-temporal 3DCG space; and the player's ability to manipulate time and space by controlling the avatar. In these three respects, the two games are immersive realist media in which players can virtually resist the flow of time.

Keywords: Immersive media, film studies, game studies, time and space, cinematic VR, 3DCG, realism

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1 Introduction

The Legend of Zelda: Breath of the Wild was released in 2017 for the Nintendo Switch and Wii U as the official title of *The Legend of Zelda* video-game series, which began in 1986. The video game is classified as an open-world action-adventure game in which the player controls Link, the player's avatar, in a virtually created space to explore and adventure. *Breath of the Wild* was so critically acclaimed and commercially successful that it won all four Game of the Year awards (Golden Joystick Awards, Game Developers Choice Awards, The Game Awards, and DICE Awards) for the first time as a Japanese video game. Many critics praised the players' freedom and fun of adventure in the game. The game's success led to a sequel, *The Legend of Zelda: Tears of Kingdom*, released in 2023.

Miyamoto Shigeru, creator of the *Legend of Zelda* series and executive producer of *Breath of the Wild*, used the unique term “open air” instead of the commoner word “open world” when describing the game. “Open world” usually refers to the freedom to explore and do various things within a prepared world. *Breath of the Wild* seems to follow the definition and can still be considered an open-world game. According to Miyamoto, it is not only important to be able to do everything; Miyamoto wanted a word that would refer to the organic integration of what could be done in the game and the experience as entertainment and adopted the term “open air” as used by Bill Trine, Nintendo's senior product-marketing manager. In an interview with IGN, Trine explained the background to the term:

I look at this game and I see a world that is fully integrated into the exploration and the adventure [. . .] It's not just a world that you're passing through. It's sort of a world that you're a part of. So much of the adventure and exploration is in this outdoor space, and the theme of wilderness collectively seemed like “open air” was the right fit for it (Otero 2017).

Trine's expression, “a world that you're a part of,” certainly aptly describes the feeling of playing *Breath of the Wild* and, simultaneously, reminds us of the sense of immersion that various technological media from Panorama in the nineteenth century to contemporary VR (virtual reality) headsets pursued. The period from 2017, when *Breath of the Wild* was released, to 2023, when *Tears of Kingdom* was released, coincides with the time when consumer VR headsets became less expensive and more available to the general public. In the last half of the 2010s, inexpensive consumer VR headsets such as HTC Vive, Oculus Rift, and PlayStation VR brought people an immersive gaming experience (Virtual Reality Society 2017). *Breath of the Wild* and *Tears of Kingdom* are designed to be played on a rectangular flat screen and not developed for a VR headset. However, it is also true that the two games provide players a sense of immersion in “a world that you're a part of.”

Using the sense of immersion suggested by the unique term “open air” as a starting point, this study examines the mechanisms of immersion in *Breath of the Wild* and *Tears of Kingdom* and their relationship to time and space. First, this study classi-

fies forms of immersion in visual media into two categories: optical media lineages that utilize camera obscura, which maintain an indexical relationship with the real world, and the more contemporary three-dimensional computer graphics (3DCG). These two genealogies are different regarding how the world is technologically represented, and the former has nurtured discussions of cinematic realism. *Breath of the Wild* and *Tears of Kingdom* are, of course, technically part of the latter 3DCG lineage. However, as expressed in the term above, “open air,” the two games also emphasize a sense of immersion – a concept deeply related to the aesthetics of realism, which emphasizes reproducing time and space as they are. With support from the discussion of André Bazin’s, a key figure in realist film theory, this study discusses how time and space are subject to manipulation in these games, offering players the virtual experience of resisting the flow of time.

2 Two Types of Immersion: Cinematic VR and 3DCG

Apart from the degree of technological development, visual representations have pursued a sense of immersion in history. Panoramas, popular in the nineteenth century, recreated immersive spaces by depicting a 360-degree surrounding painting inside a cylinder-shaped building. In some cases, panoramas placed related objects between the central platform and the painting, thus giving the viewers a more immersive experience. Not limited to panoramas, there are examples in mainstream art history where immersion is emphasized. When Frederic Edwin Church (1826–1900), an American landscape painter known for his detailed depictions of scenery, exhibited *The Heart of Andes* (1859), the 168 cm high and 303 cm wide painting was set up in a dark room with gaslight lighting to match the audience’s eye level. Patrons were handed opera glasses to peer into Church’s paintings for observation of the details (Avery 1986; The Metropolitan Museum of Art 2023; Raab 2015, 65–66).

Painters often used camera obscura to create these immersive landscapes on a flat surface. The camera obscura, a device meaning “dark room” in Latin, used the principle of a pinhole camera to obtain a projected image. The principle has been known since ancient times and used for astronomy and other applications (Hammond 1981; Lefèvre 2007). Artists began using camera obscura for painting to obtain an accurate perspective image in the fifteenth century. Panorama makers used camera obscura because their work aimed to accurately reproduce an existing space in a different location (Oettermann 1997, 27–32). They prepared multiple camera obscura images for each fixed angle to obtain a series of images around 360 degrees from a single point. They then used these collected images to transcribe the actual panorama in their studio (Oettermann 1997, 51–52; Onnes-Fruitema and Rombout 2006, 15–17).

This technological genealogy of using the camera obscura mechanism to recreate a three-dimensional space leads to cinematic VR. Cinematic VR refers to devices/con-

tents that impart to the user the feeling of being virtually immersed in space by displaying photographic images on a head-mounted display whose angle of view changes following the user's movement. Filmmakers use a filming device with multiple cameras to cover 360 degrees, such as Jaunt ONE, a professional camera system, to shoot VR footage (Watabe 2017). For example, Taiwan-based art film director Tsai Ming-Liang used cinematic VR cameras to shoot *The Deserted* (dir. Tsai Ming-Liang, 2017) and exhibited it using the HTC Vive system (Vive Originals 2017).

This lineage of technologies, which use photographic techniques to create realistic images with a sense of immersion, does not reproduce reality as it is. This can be said on several levels. Creating 360-degree cinematic VR images involves stitching multiple photos together, and the computer corrects distortions in the peripheral areas of each photo (Watabe 2017). Even in nineteenth-century panoramas, the artists' skill would have hidden the distortion between adjacent camera obscura images. More essentially, it is just a belief that individual photographs taken with a camera have an indexical relationship to the material world. Indeed, a *photo-graph* describes the truth of the material world in that it fixes a particle of light that has jumped into the camera obscura at a certain moment in the world. However, human artifice cannot be completely eliminated regarding the choice of camera angle, film sensitivity, and exposure. Therefore, the idea that photography has a direct and indexical relationship with the world is a belief shared during a period in human history. The images obtained by photographic technologies provide not reality but a "reality effect."

Immersive experiences using these optical devices are, in fact, minor in current VR-headset experiences or video games. Instead of using a camera to catch the world's reality, the more common model in commercial entertainment is computer graphics (CG) to create a virtual three-dimensional space and immerse the viewer in it. Some pervasive services offer experiences similar to Cinematic VR, such as Google Maps Street View. In the Street View mode of Google Maps, users can pick up a specific viewpoint from which they see the photo image of the location. Then, once the users click on the arrow shown on the photo, another photo from a short distance away appears. Street View allows the users a pseudo sense of moving along the street. However, continuously rendering a photo image of a three-dimensional space according to the user's specific standpoint and direction requires a much larger amount of data processing than 3DCG. In order to realize Google Maps Street View, streets around the world must be photographed by a car equipped with an omnidirectional camera, and the shorter the distance between two consecutive viewpoints, the greater the final data volume. Therefore, the user-selectable viewpoints on Street View are set every few meters, and the angle of viewpoint the user can select is also limited. Any contemporary video game, in which players can move freely in a 3D space, requires rendering a continuously changing 3D space at the frame rates of 24, 30, or 60 fps. This is not feasible with cinematic VR methods because of the infinitely increasing amount of data. Therefore, 3DCG is used in many contemporary contents that express mobility in three-dimensional space.

The history of using 3DCG to recreate space dates back to the 1970s, when first-person shooting games such as *Maze* (1973) and *Spasim* (1974) were developed (Moss 2016). Since the 1980s, games using 3DCG have been offered for consumer computers and home video-game consoles. For example, *Virtua Fighter* (1993), released as an arcade game, was a fighting game played in a 3DCG space using polygonal rendering and was a departure from the two-dimensional fighting games that used dot-pixel rendering. In role-playing games, *Final Fantasy VII* (1997), released for PlayStation, also allowed players to move through a 3DCG space rendered frame by frame using polygons. In the last decade of the twentieth century, these video games mechanically produced three-dimensional time and space using CG, where players' avatars could freely move around. As these 3DCG technologies advanced, the player's freedom increased to freely manipulate the viewpoint, and the games instantly rendered 3DCG space accordingly. The most typical case is the sandbox video game, *Minecraft*, which was released in public alpha in 2009 and has since been developed on various platforms. *Minecraft* represents the three-dimensional game world by combining cubes, and the automatically generated space is almost infinite. The game does not set a specific objective and leaves the players free to decide what they do; *Minecraft* deserves to be called an "open world" game.

As shown above, there are two forms of visual immersion in digital content: 1) cinematic VR, which relies on the technical replicability of optical devices, and 2) 3DCG, which constructs a virtual three-dimensional space through CG. If we follow this classification, *Breath of the Wild* and *Tears of Kingdom* belong to the latter. The player of the games can move relatively freely in the 3DCG space created, such as in *Minecraft*. Panorama pictures mentioned above were an attempt to duplicate real space as accurately as possible using optical reproduction devices; *Breath of the Wild* and *Tears of Kingdom*, thus, belong to a different technological lineage. However, the arguments about immersion with optical visual technology remain valid for understanding the video games.

3 *Breath of the Wild* and *Tears of Kingdom* as Realist Experience

The camera obscura is at the bottom of the technical genealogy from paintings and panoramas to cinematic VR. In all cases, the principle of the pinhole camera plays a key role in obtaining a projected image of the outside world. With the development of photosensitizers, flexible films, and electronic sensors, obtaining an image of the outside world has become possible with less human intervention. The exaltation of the exclusion of human arbitrariness in reproducing images is at the core of realist film theory. This section overviews the realist film theory, with a focus on André Bazin, a French film critic who theoretically led the *Nouvelle Vague* (New Wave) in Post-WWII

France, to consider how the discussion in the realist film theories can be applied to *Breath of the Wild* and *Tears of Kingdom*.

3.1 Bazin's Film Realism

In the process of institutionalizing the new technology of cinema, which was born at the end of the nineteenth century, as a new art form in the twentieth century, two theoretical positions emerged regarding which aspects of cinema were considered artistic. One position, called Formalism, emphasizes the artist's involvement in the film. From this standpoint, it is important to create meanings and effects that could not be expressed in other old art forms through ingenious use of production design and lighting and by cutting and pasting films together. On the other hand, Realism considers that the medium specificity of film art, the technical reproduction device of the image, is its ability to capture the material reality of the world (Turvey 2015, 300–301). While many have discussed the technical specificity of the cinematic medium, Bazin's argument, which emphasizes the mechanical reproduction of optically captured images with minimum artifice, has significantly impacted realist film theory. In his essay, "The Ontology of the Photographic Image," Bazin compares various past art forms to point out that human beings' desire to represent a complete three-dimensional space. He then finds a watershed by saying that "[o]riginality in photography as distinct from originality in painting lies in the essentially objective character of photography" (Bazin 1967, 13). Coupled with the fact that the French word *objectif* means both "objective" and "lens," Bazin here relies on the mechanical nature of the camera to emphasize its objectivity. In other words, he extolled the ontological qualities of cinema as an intact replication of the optically captured image of the external world; his realist film theory would apply to contemporary cinematic VR.

Bazin's argument and the new film movement from which he derived his film theory were rooted in the experience of World War II. The glamorous fictional stories filmed in the studios were no longer acceptable in Italy, which had suffered considerably from the war. Films were made to capture the condition of Italian cities scarred and exhausted by World War II, such as *Rome, Open City* (dir. Roberto Rossellini, 1945), *Bicycle Thieves* (dir. Vittorio De Sica, 1948), and *Germany, Year Zero* (dir. Roberto Rossellini, 1948). These films were appreciated not for their beautiful fiction in the studios but for their representation of the people's living conditions as they were. This new movement was called Neorealismo (New Realism), and Bazin became its strongest advocate (Bazin 1967, 29).

Bazin noted several essential cinematic techniques in his reviews of Neorealist films. First, location shooting was essential, not studio shooting (Bazin 1971, 42–43). Second, Bazin also evaluated the use of amateur rather than professional actors (Bazin 1967, 123; Bazin 1971, 24). The importance of these two techniques should be evident from the discussion thus far: as the antithesis of the fictional world created

by professional actors in the studio, as in the American musical films of the 1930s, Neorealism shot amateur acting on location, not professional actors in a studio, to capture the reality of the ordinary Italian people scarred by World War II. Third, Bazin praised long takes because the technique respected the spatial and temporal continuity of the material world (Bazin 1967, 37–38). Formalist film theory and practice emphasize the effects of editing films together. In contrast, in realism, the camera's job is to respect the material reality of the world, so realist filmmakers minimize editing. Finally, deep rather than shallow focus is essential in film realism (Bazin 1967, 37–38; Bazin 1971, 43). Deep focus allows many of the elements that make up the screen from the front to the back to be visible to the audience, and thus the filmmaker can emphasize the reality of the three-dimensional space. Bazan often cites Orson Welles in this regard. As seen in *Citizen Kane* (dir. Orson Wells, 1941), Welles creates a depth of field that brings all of the foreground, midground, and background into focus and, according to Bazin, allows the audience to engage with reality deeply (Bazin 1967, 33–34; Bazin 1971, 27–29). It is important to note that these techniques considered indispensable in realist film are deduced from the film's medium specificity of mechanically reproducing reality.

3.2 Realist Traits in *Breath of the Wild* and *Tears of Kingdom*

These realist cinematic techniques can be found in *Breath of the Wild* and *Tears of Kingdom*, although the games do not belong to the tradition of the optical reproduction of reality. The video games do not seem to have realist elements if we strictly follow Bazin's argument of photographic film ontology. As already mentioned, the world of *Breath of the Wild* and *Tears of Kingdom* is a fictional one constructed in 3DCG. The game world does not have a photographic indexical connection to the real world. However, it is also true that players have a deep sense of immersion to the extent that they can feel it as "a world that you're a part of" even in a full 3DCG world. Players are free to explore in a virtual space that mimics real space with parameters such as gravity and buoyancy and communicate with varieties of non-player characters (NPC) who are not necessarily related to the main story. If we only focus on the fact that the game world has no indexical relationship to reality, these characteristics are consistent with the first two features of neorealist film techniques: location shooting and the use of amateurs. Playing this game is not an immersion into an indexical world but comes with the sensation of immersive entry into a well-crafted 3DCG space. The spatially continuous and unbroken 3DCG space has a degree of verisimilitude that can be described as Realism, as it precisely reproduces terrain, weather, physical phenomena, animals and monsters, and various human representations with which players can communicate with some patterns of response.

If we regard the 3DCG world of *Breath of the Wild* and *Tears of Kingdom* as a filming location, we can think of the experience of playing the games as a single, long-

take film. Link's exploration of the game world is similar to the worker's wandering the city searching for his stolen bicycle in *Bicycle Thief*. The games are not made entirely of a single take such as *Russian Ark* (dir. Alexander Sokurov, 2002) because past footage occasionally cuts in and the screen blacks out to skip through time as players take actions such as cooking or sleeping. Unless the player performs such special acts, they experience the action of Link, player's avatar, in an un-cut sequence, similar to a realist film's long take. In addition, considering that *Rope* (dir. Alfred Hitchcock, 1948), a pseudo-single-take film consisting of multiple takes connected with blackout to characters' back, players can regard the gaming experience as mostly continuous chronological presentation of Link's adventure with some jump-cuts.

Deep focus, the last trait of realist cinema, is implemented in these games in the form of the player's control of the camera. Bazin appreciated the films of Orson Welles for his use of deep focus (Bazin 1967, 33–34; Bazin 1971, 27–29). In addition to recreating an entire space with depth, Bazin observed that the depth of the space allowed the viewers to choose what to see. Once a deep-focused camera captures multiple events co-occurring in a three-dimensional space, the viewer can choose where to focus their attention. In these games, the right joystick on the Nintendo Switch is assigned for camera control, allowing the player to freely control their perspective. The player can move the camera position back and forth, left and right of Link as needed, and even use the zoom function when looking into the distance. Thus, the liberty to choose what to see is realized differently from the cinematic arts in the twentieth century.

3.3 Section Summary

From the standpoint of emphasizing the indexical relationship of photographic technology to the world, *Breath of the Wild* and *Tears of Kingdom* cannot be considered realist art. However, although the 3DCG world is not exactly the same as the real world, the mountains, plants, and buildings are covered with textures that impart a sense of reality to them. Although the reproduced world in the games is not as optically accurate as that in photographs, it has a similar level of verisimilitude as the nineteenth-century panoramas, which relied on the artist's hands. In addition, the player is free to move around in the three-dimensional space with such a sense of reality and can control the camera's viewpoint to observe the movements of the player's avatar without interruption. In this sense, *Breath of the Wild* and *Tears of Kingdom* have much overlap with the techniques that Bazin pointed out as characteristic of realist film.

4 Wandering the Lost World

The realist cinematic qualities in *Breath of the Wild* and *Tears of Kingdom* allow for a deeper understanding of temporality in the two games. The player's time experience in these two games can be described as a progressive game in a coherent game world, following Jesper Juul's classification of video games in *Half Real*. Here, "coherent" means that the fictional world is presented in a way that maintains its illusion. The "progressive" type means that the game develops solely according to the player's action. The opposite concept is the "emergent" type, which requires interaction with other game participants. In other words, the games immerse individual players in the fictional world, and the player's experience proceeds chronologically except for cut scenes (Jesper 2011, 121–196). The player can move around in this consistent time-space by manipulating Link, the player's avatar. Not only do the games provide the pleasure of exploring space, but the exploration of space is also connected to the desire to preserve and manipulate time. Bazin's discussion of the mummy complex helps us understand this. According to Bazin, realism is the desire to preserve time and space:

The process might reveal that at the origin of painting and sculpture there lies a mummy complex. The religion of ancient Egypt, aimed against death, saw survival as depending on the continued existence of the corporeal body. Thus, by providing a defense against the passage of time it satisfied a basic psychological need in man, for death is but the victory of time (Bazin 1967, 9).

For Bazin, cinema, with its photographic indexicality, is the ultimate art form "against the passage of time" and his commitment to realism stems from this understanding. The mummy complex can be found in *Breath of the Wild* and *Tears of Kingdom* in many ways. In particular, the overall storylines of both games have the same structure: the player tries to understand what happened in the past and, thus, to solve the problem in the present. In this sense, the games are "a defense against the passage of time."

4.1 Stories to Explore the Past

Breath of the Wild begins with Link waking up with amnesia. As the player's avatar, Link is unaware of what has happened to his surroundings; as he explores the world, he learns that Calamity Ganon attacked and destroyed his native Hyrule one hundred years ago. He learns that Zelda, the priest-princess of the Kingdom of Hyrule, has been sealing Calamity Ganon alone for one hundred years. The goal of the game is to defeat Calamity Ganon by gathering the four heroes' power and lost Master Sword, the iconic item in the game series. In short, major events have already occurred in the past, and the player is unaware of them at the start of the game.

By exploring the three-dimensional space, the player discovers the truth of the hidden past. There are NPCs throughout the game world who know about past events and can tell players what happened in the past, but more important is an item called Utsushie's Memory, hidden in the game world. *Utsushie* is a photo-taking function of Seeker Stone, an in-game device miming a Nintendo Switch. It also refers to a Japanese term that refers to a type of art form popular from the end of the Edo period (1603–1868) to the Meiji period (1868–1912). Exhibitors of *utsushie* projected the images of people and scenery painted on glass plates onto walls or white cloth using a magic lantern. Utsushie's Memory in the game are represented as dots of light on the field, and by touching them, players can see a cut-in movie of Princess Zelda's past memories. By searching for the memory of Zelda, in other words, by exploring the three-dimensional space and seeing the temporal representation of the hidden past in Utsushie's Memory, players can get closer to the narrative truth. In this sense, when combined with the self-referential emphasis on the game's virtual indexicality to 3DCG space embodied by *utsushie*, the in-game photographic function, *Breath of the Wild* has the characteristics of a realistic film, "a defense against the passage of time," by respecting three-dimensional space.

The same narrative structure is found in the second game, *Tears of Kingdom*, set several years after the ending of *Breath of the Wild*. While working on the reconstruction of Hyrule, Zelda and Link encounter a mysterious, mummy-like man underground in Hyrule castle. The mummy's magical powers cause a natural disaster throughout Hyrule, and Zelda goes missing. While exploring the world damaged to the extent that its topography has changed, Link learns that the mummy is Ganondorf (Fig. 1), the original form of Calamity Ganon, who attacked the Kingdom of Hyrule more than ten thousand years ago during its founding period, and that the missing Zelda has traveled back to the time. Zelda, with the heroes of the founding period, fought Ganondorf but was defeated. To instill hope in Link, she decided to be reborn as White Dragon. She can live an eternal life as White Dragon at the cost of losing her ego. Zelda uses ten thousand years to store the power of the sun in the Master Sword stuck in her head as she travels above the kingdom. In the present, Link draws the Master Sword from the White Dragon to defeat Ganondorf, who is about to resurrect, and restore peace to Hyrule.

As is the case in *Breath of the Wild*, the storyline of *Tears of Kingdom* can be seen as a variant of what Bazan calls the mummy complex. Ganondorf has endured more than ten thousand years in the underground world as a mummy in his attempt to conquer the Kingdom of Hyrule and is the literal embodiment of the mummy complex. In addition, Zelda's reincarnation into the White Dragon flying in the sky over the Kingdom of Hyrule is another form of mummy complex. Considering that photography and cinema were the art of light, that light-sensitive materials were necessary for their technical development, and that the mechanical reproduction of photographs and films, which eliminated human arbitrariness, was important for realism, Zelda, who lost her human ego and has been gathering light in her body for over ten thousand years, is truly a mummy of light, the very essence of photography and film (Fig. 2).



Fig. 1: Ganondorf sealed under Hyrule Castle in *The Legend of Zelda: Tears of the Kingdom* (2023). Image, Nintendo.

Similar to Utushie's Memory, a device to learn about past events by watching cut-in movies prepared is also provided in this work. It is called Dragon's Tears. As the name suggests, these are tears dropped on the ground by White Dragons, to which Zelda was reincarnated, flying over Hyrule. As Zelda, who has lost her ego and continues to gather light energy, is a mummy of light, equivalent to a medium that fixes light on it, such as photograph and film, then the tears dropped by White Dragon, which triggers a touch of past memories, can genuinely be called crystallization or materialization of time.



Fig. 2: White Dragon with Master Sword and Link on Her Head in *The Legend of Zelda: Tears of the Kingdom* (2023). Image, Nintendo.

4.2 Ruins as Traces of the Past

The narrative structure of both works is to recall lost events of the past using some object placed in three-dimensional space as a clue. *Breath of the Wild* and *Tears of Kingdom*, therefore, inevitably include an element of wandering in a lost world. Japanese art historian Tetsuya Matsushita's discussion that *Breath of the Wild* cites Romantic masterpieces in art history helps us understand how the two games deal with the lost world.

Matsushita discusses *Breath of the Wild* in relation to Romantic tradition and picturesque aesthetics in art history (Matsushita 2018). He points out that the package art of *Breath of the Wild* (Fig. 3) is an homage to Kaspar David Friedrich's *Wanderer Above the Sea of Fog* (1818, Hamburg Museum of Art, Hamburg), in which a man stands on the top of a rocky mountain with his back to the viewers (Fig. 4). This homage reveals that *Breath of the Wild* emulates a Grand Tour-like experience of the sublime. The Grand Tour refers to the extensive out-of-country travel undertaken by the children of aristo-



Fig. 3: Package Design of *The Legend of Zelda: Breath of the Wild*, 2017. Image, Nintendo.

crats and the wealthy from the early seventeenth to the early nineteenth century. They traveled for several months to France and Italy, the culturally advanced countries of the time, where they were familiarized with subjects such as politics, culture, art, and archaeology and also learned socializing and etiquette in practice. While crossing the Alps for the tour, people discovered rocky and stark landscapes and developed the concept of the sublime, which was associated with majesty and grandeur, as opposed to classical beauty norms. Like the solitary man in *Wanderer above the Sea of Fog* or the people on the Grand Tour, the player controls Link to climb high mountains and descend deep valleys, discovering photogenic landscapes.

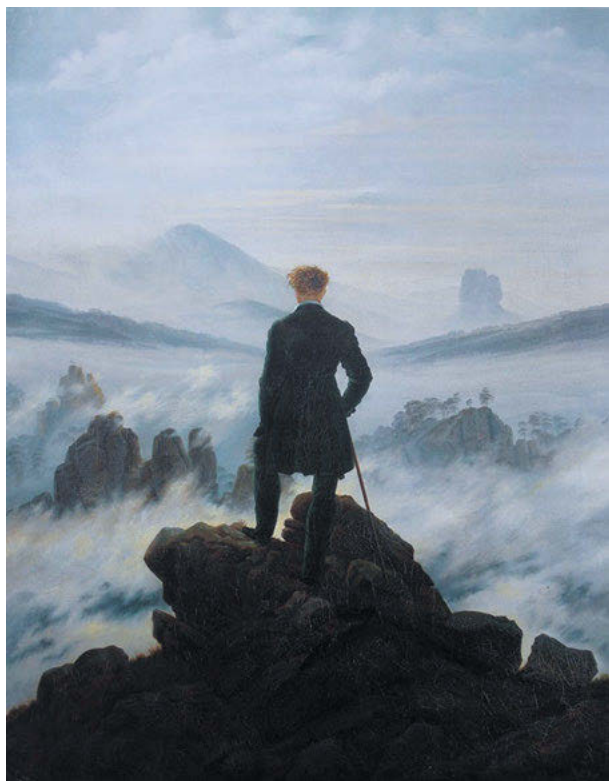


Fig. 4: Casper David Friedrich. *Wanderer Above the Sea of Fog*. 1818. Image, Hamburg Museum of Art, Hamburg.

Matsushita further emphasizes the strong connection between *Breath of the Wild* and the picturesque aesthetic by noting that the player visits the ruin of the Temple of Time at the end of the tutorial. The architecture of the temple, as seen in the arches, windows, and columns, is the Gothic style of medieval Europe. The ruins of Gothic churches are among the most desirable motifs for Romantic landscape paintings. Mat-

sushita points out the similarity of the Temple of Time to the paintings of the ruins of Tintern Abbey by Joseph Mallord William Turner (Fig. 5). Tintern Abbey was built in 1131 along the Wye River in Wales; it could not stand the passage of time and became a huge ruin by the end of the eighteenth century, when Turner painted the picture. Decayed by the forces of time and nature, which man can never overcome, the structure evoked a sense of the sublime in people.

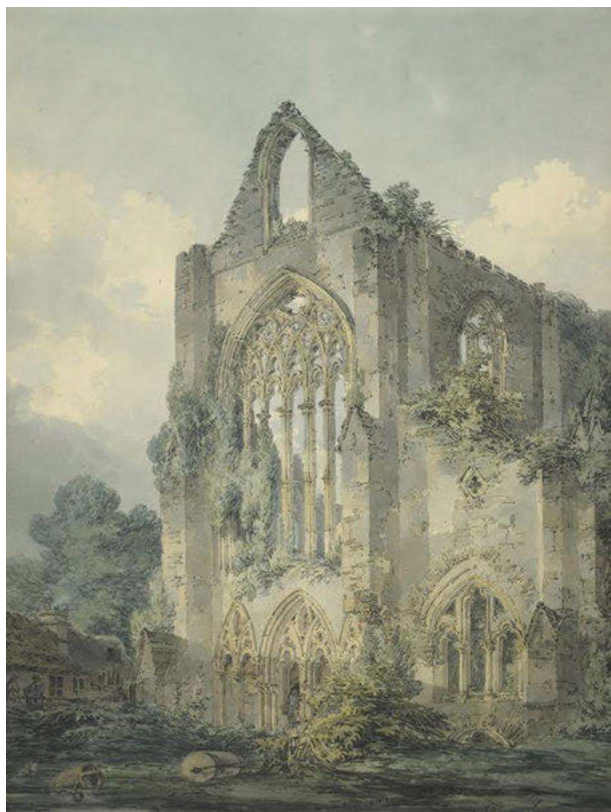


Fig. 5: Joseph Mallord William Turner. *Tintern Abbey, West Front*, 1794. Image, the British Museum, London.

Matsushita's argument connects *Breath of the Wild* to art history and finds elements of the Grand Tour, the aesthetics of the picturesque, and the sublime in the game. His argument is quite valid: compared to games such as *Minecraft*, the experience of playing *Breath of the Wild* is distinct in evoking an aesthetic of Romanticism.

In addition, some characteristics Matsushita identifies correspond to realist film theory. Western civilization has had a positive interest in ruins since at least late antiquity (Stewart 2020, 1). In describing the Western attitude to ruins historically, Susan Stewart states that people had had “a voyeuristic pleasure in images of ruins” (Stew-

art 2020, 5) since the twentieth century when photographic technology became widely available. The aesthetics of ruins evoke a sense of the sublime through the irresistible flow of time and, simultaneously, are understood in relation to the mummy complex in realist film theory. For example, Bazin notes the couple's wandering through the ruins of Pompeii in Rossellini's *Journey to Italy* (dir. Roberto Rossellini, 1954), while philosopher Gilles Deleuze emphasizes the importance of the ruin motif in postwar art cinema, which began with realism in his *Cinema* (Bazin 1971, 93–101; Deleuze, 1989, 94–95, 198, 233). Postwar realist art cinema represents the passage of time that creates ruins as something humans cannot resist. *Breath of the Wild* and *Tears of Kingdom* depict the time differently. Link explores a world on the verge of collapse after a calamity and a disaster. In the process, he explores decaying architecture and old ruins, which is similar to a Grand Tour. Throughout the stories summarized above, he will ultimately triumph over his enemies and restore peace to the Kingdom of Hyrule and Zelda after one hundred or ten thousand years. In these games, the player wins against time.

We can understand that *Breath of the Wild* and *Tears of Kingdom* bring time under control by addressing the artwork in the work, which Matsushita did not discuss. Matsushita discussed the game in relation to Romanticism; however, these games also cite more contemporary art pieces. For example, the Rist Peninsula, located in East Akkala in the game world (Fig. 6), is a spiral-shaped sandy beach jutting out into the ocean. The peninsula refers to a 1970 land artwork on Salt Lake in Utah called *Spiral Jetty* (Fig. 7) (Dia Art Foundation 2023). This artificial structure, created by Robert Smithson (1938–1973), was not intended to be perfectly preserved, but rather to corrode and change in its natural environment. Art critic Rosalind Krauss, who redefined the category of sculpture, had this to say about *Spiral Jetty*:

Smithson creates an image of our psychological response to time and of the way we are determined to control it by the creation of historical fantasies. But the *Spiral Jetty* attempts to supplant historical formulas with the experience of a moment-to-moment passage through space and time. (Krauss 1977, 4–5)

In other words, just as the picturesque gaze sees decaying Gothic architecture as an embodiment of the effects of time, *Spiral Jetty* is a work in which temporal changes are embedded in audiences' experience of it. When *Spiral Jetty* is recreated in *Breath of the Wild* and *Tears of Kingdom* and presented as a photogenic site, the peninsula becomes an object in the 3DCG space that does not undergo any change due to the effects of time. In other words, the Rist Peninsula is preserved in a mummy-complex manner. Thus, this peninsula, as well as the Temple of Time, an imitation of a decaying Gothic building, is preserved in 3DCG space as an object that no longer changes.



Fig. 6: *Rist Peninsula*. N.d. *Zelda Wiki*. Image, Gabo 200. Accessed December 1, 2023. https://zeldawiki.wiki/wiki/File:TotK_Rist_Peninsula.png#filelinks.



Fig. 7: Robert Smithson. *Spiral Jetty*. Image, Soren.harward at en.wikipedia, public domain, via Wikimedia Commons. Accessed May 28, 2024. <https://commons.wikimedia.org/wiki/File:Spiral-jetty-from-rozel-point.png>.

4.3 Section Summary

Bazin, the realist film theorist, used the expression “mummy complex” to point out that film is a lineage of plastic arts that defends itself against the passage of time. The human desire to resist time is expressed in two ways in *Breath of the Wild* and *Tears of Kingdom*: in the narrative development of the two games and in the preservation of the architecture within the 3DCG space against weathering. In this sense, players touch the lost world of the past by walking around the 3DCG space.

5 Visual Immersion and Controllability

From the discussion thus far, it is clear that in these games, the Grand Tour-like qualities of wandering through ruins are reminiscent of the lost world. While the Grand Tour focuses on the experience of the sublime through the irresistible onslaught of time, *Breath of the Wild* and *Tears of Kingdom* focus on the mummy complex in a realist film theory. Romantic ruins, *Spiral Jetty*-like structures, and various other picturesque or photogenic landscapes are all lent eternity as immutable objects in the 3DCG space. The critical point is that while evoking these lost worlds, what players actually do is to look around for objects fixed in time, and in their wake, Link grasps the passage of time in the past. Here, these games are separated from realist films because the player can control Link.

5.1 Lack of Controllability in Cinematic Experience

In the case of optical-mechanical immersion leading to cinematic VR, the audience has a very limited sense of control. As in Plato’s metaphor of the cave, the film spectator has been thought of as a subject fixed to a chair in a dark room, the pure eye, looking at representations projected on the screen. This is symbolized in Hitchcock’s *Rear Window* (dir. Alfred Hitchcock, 1954), in which the protagonist, a photographer with an injured leg who cannot leave his bed, observes and deduces a crime in the building across the courtyard of his apartment complex. François Truffaut, in his review of the film in 1954, stated, “This parable: The courtyard is the world, the reporter/photographer is the filmmaker, the binoculars stand for the camera and its lenses” (Truffaut 2014, 123). In the case of Tsai Ming-Liang’s *The Deserted*, the only freedom afforded the viewer is the ability to change the angle from which they view the film and to decide which part of the 360-degree view they want to see. Thus, immersion through devices that rely on optical indexicality to the world tends to discard elements other than the eyes.

While the sense of control is absent in cinema due to its technical characteristics, the ability to control the game forms the medium's specificity. In addition to the level of pleasure of freely manipulating the objects and characters in the game world in general, the player can also control the virtual camera set in the 3DCG game world when technology reaches a certain point. Players can manipulate the camera to choose the perspective they desire. For example, in the history of *Final Fantasy*, the famous Japanese RPG series, polygonal 3DCG was used for the first time in *Final Fantasy VII* (1997), and the camera in the game world became controllable in *Final Fantasy XI*, released to the public in 2002.

In the case of film art, the indexical relationship with the world that the camera guarantees defines its medium specificity. The angle of the camera is thus always an issue for the art form. In *Rear Window* mentioned above, the key to immersion in the film world was the audience's identification with the protagonist, a photographer who could not leave his room due to a leg injury. In addition, suture theory, which examines the mechanism of immersion in the film with the aid of psychoanalysis, is a good example of how the art form concerns the camera angle (Oudart 1989; Dayan 1974; Watabe 2017). In an attempt to theorize cinematic immersion, film scholars have discussed the importance of mechanisms that render the camera's presence invisible. When the audience immerses themselves in the world of the film, they inevitably ask, "Who is operating this camera?" The sequence of shots and reverse shots makes the camera's presence invisible by revealing that no one is behind the camera.

In the history of film medium, which emphasizes an indexical relationship with the real world, the camera's gaze, or the question of who is controlling the camera, is expressed in Samuel Beckett's *Film* (dir. Alan Schneider, 1965). The film stars old Buster Keaton, a big star of slapstick comedy, as he wanders through the city and enters the interior of a building. The camera follows Keaton, and the constant delay and repetition of the camera's movement make the viewer constantly aware of the camera's kinetic movement. Put another way, the film expresses two different kinds of identification. Jean-Louis Baudry, a film scholar who developed an apparatus theory of cinema from a Marxist standpoint, distinguished between identification with the camera's gaze and identification with the characters' gaze within movies (Baudry 2004). If we follow this classification, these two kinds of identification do not coincide in Beckett's *Film*, making the film viewer aware of the problem of the gaze in the medium.

5.2 Controllability as a Means of Immersion in 3DCG Games

Meanwhile, in games using 3DCG, where the player can manipulate the camera in the game world, the mechanism of immersion is very different from that based on the indexicality of optical devices. If the player can operate the camera themselves, there is no doubt about who is operating the camera in the fictional world. However, the aes-

thetics of cinema could also be employed in the game. For example, the action game, *God of War*, which won numerous Game of the Year awards in 2018, employed one scene/one shot in cut-in movie scenes. The game uses realist cinematic techniques to reinforce the sense of immersion in the game world. On the contrary, *Minecraft* and many other games that employ 3DCG space assume that the player can freely manipulate the camera within the game world, and *God of War* is an exceptional case.

Considering the changes in the game system from *Breath of the Wild* to *Tears of Kingdom*, beyond simply being able to manipulate the in-game camera, it becomes clear that this series of works provides the player the pleasure of manipulating time and space in a virtual 3DCG space. The player can use special abilities exclusive to Link in both *Breath of the Wild* and *Tears of Kingdom*; Remote Bomb, Ice Maker, Magnesis, and Stasis in *Breath of the Wild*; Ultrahand, Fuse, Recall, and Ascend in *Tears of Kingdom*.

In *Breath of the Wild*, three of the four abilities simply imitate a substance or phenomenon that exists in reality. Remote Bomb is the ability to create virtual bombs, and Ice Maker is the ability to create pillars of ice where there is water. Magnesis creates a virtual magnet whose force can be used to move metal objects in the game world. These abilities lend the player a sense of control within the game world; however, they are not essentially different from a setting such as being able to cast a fireball in a game set in a world of swords and sorcery. Only the last one, Stasis, is involved in the manipulation of time. When this ability is activated, it stops the time of the targeted object and causes the kinetic energy imparted to that object to accumulate during that time. Then, when a certain amount of time has elapsed, the stored kinetic energy is released in the targeted object all at once. With this ability, the player can send heavy objects flying over great distances. Only this last ability can manipulate time in the game world.

The newly added four abilities in *Tears of Kingdom*, which replaced the four in *Breath of the Wild*, allow players to have a greater sense of control over objects, time, and space. Ultrahand and Fuse are the abilities to provide a sense of freedom to create things in bricolage using materials in situ, such as in the world of *Minecraft*. With Ultra Hand, the player can manipulate many objects in the game world and combine several to create a new object that the player desires, such as vehicles, weapons, and buildings. Fuse combines objects in the game world with Link's own weapons and shields to increase their attack/defense power or give them special effects. While the two abilities allow for free crafting, Recall and Ascend directly manipulate time and space. Recall is the ability to rewind time only for the targeted object. Using this, the player can bounce a weapon thrown by an enemy back at the enemy, reverse the gears in a dungeon to solve the gimmick, or jump on a rock that has fallen from the sky and travel to a sky island. Meanwhile, the Ascend is the ability to slip through the ceiling above the head of Link and move above it. Using the ability from under a bridge or a huge enemy made of rocks, the player can move onto the bridge or its head slipping through the bridge or the enemy's body. It is evident that Recall is the manipulation of time; however, as for the Ascend, time in the game world is sus-

pended while Link is using the ability. For characters other than the player, Link behaves as if it has moved instantaneously.

In the case of *Breath of the Wild*, the ability to emulate real substances, such as bombs and ice, was the main focus, while Stasis was the exception related to the manipulation of time. In *Tears of Kingdom*, the four abilities are reorganized into two categories: one to exercise the freedom to fabricate things and the other to manipulate time and space. The increased freedom of a player's production and manipulation in *Tears of Kingdom*, when compared with realist film theory, is aimed at increasing immersion through a sense of manipulation. Furthermore, considered in conjunction with the game's overall story, the heightened manipulation of time and space in *Tears of Kingdom* is a realization of the tendency of realist films to "provide a defense against the passage of time" within the characteristics of the game medium.

5.3 Section Summary

Again, with the help of realist film theory in this section, we better understood the relationship between immersion and time and space in *Breath of the Wild* and *Tears of Kingdom*. While optical-immersion devices, from panoramas to movies and Cinematic VR, lack a sense of manipulation, video games, with their simultaneous interactivity, create a sense of manipulation that allows the player to work on the objects in the game world, creating a sense of actual presence in 3DCG space. In *Tears of Kingdom*, the sense of manipulating time and space becomes more pronounced, and the desire to protect oneself from the flow of time, which is the goal of film realism, is realized in the games.

6 Conclusion

This study examines the mechanism of immersion in *Breath of the Wild* and *Tears of Kingdom*, which have won various video-game awards and have both been commercially and critically successful, and it compares them to visually immersive media such as panorama and film. First, this study categorizes visual immersion in the modern era into two types: cinematic VR, from panoramas and cinema to 360-degree camera-based video expression using optical-reproduction techniques with camera obscura, and 3DCG, which has been rapidly developing since the late twentieth century and uses computers rather than optical devices to create virtual spaces. The two games belong to the latter 3DCG; however, they also have the characteristics of realistic films in the former's cinematic VR tradition: the characteristics that André Bazin noted about *Neorealismo* and Orson Welles films, such as location shooting, the use of amateurs, long takes, and deep focus, can be found in the two games.

The fact that *Breath of the Wild* and *Tears of Kingdom* have a realist tendency means that they reflect the issues of time and space that realist film theory points out. André Bazin observed a mummy complex in the history of plastic arts, a human desire for protection against the passage of time. The two games embody the desire in three ways. First, the storyline is about overcoming a problem over a long period. In both games, Link lacks knowledge about what happened in the past but solves the current problems by exploring the world and disclosing the history. Second, the ruins in the game world embody the Romantic aesthetics of the sublime, which is an awe of the greatness of nature and passage of time that no human being can resist. In addition to these ruins, even more modern structures such as *Spiral Jetty*, a land art made in 1970, are reproduced in the un-temporal 3DCG space. Third, taking advantage of the interactive nature of the game medium, Link has a unique ability to manipulate time and space. By controlling this avatar, the player can resist the flow of time in a way different from how they can with cinematic VR, which is, in principle, passive. In these three respects, *Breath of the Wild* and *Tears of Kingdom* are immersive media in which players can virtually experience “a defense against the passage of time.”

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Nicholas C. Lowe

Listening to the Aural Heritage of John Banvard's Mississippi Panoramas: Reflections on Content and an Initial Speculative Re-Enactment

Abstract: John Banvard (American, 1815–1891) is understood to have been amongst the most influential performance entrepreneurs of the mid-nineteenth century. His most celebrated work, *The Panorama of The Mississippi River* (circa 1847) in its various iterations depicted the Mississippi, the Ohio, and the Missouri rivers. Moving panorama paintings were a form of theatrical entertainment, viewed by audiences as a latterly scrolled series of passing scenes. Presented by Banvard himself as the creator and protagonist of a simulated river boat journey, his entertaining and dramatic narrative delivery was accompanied by musical performances, while the painting was enlivened with specialized stage effects and lighting. Press from the 1840s and 50s, enthusiastically reported that watching these performances accurately mimicked the experience of river boat travel itself. The levels of realism achieved in the live event has continued to receive tacit acceptance by scholars well into the mid-twentieth century and after, who largely paid closer attention to the mechanics and material detail of mid-nineteenth-century moving panoramas. From the vantage point of the early twenty-first century, a time that is additionally replete with many new digital media formats, a return to the study of nineteenth-century immersive entertainment media is timely.

Amongst the available range of archival materials there are four published musical scores, for voice and piano, that point to a range of narrative and sensory qualities in Banvard's performances. The idea of a speculative re-enactment is offered here as an approach to viewing and investigating Banvard's work for its sensory details. To be studied, music must be performed. The occasion of the 32nd International Panorama Council in Iowa City (September 2023) made it possible to explore the music in performance, in a presentation that was part lecture, part recital, part moving image display. The intention in this paper is to begin a re-examination of the archival records to better understand the context and nature of the mid-Victorian experience of Banvard's performance.

Keywords: Panorama, Mississippi river, piano music, performance, heritage

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Banvard's Panorama has been nightly filled this past week. Every one should see this beautiful painting, before it is removed from the city. —John Banvard and Family Papers, Scrapbook

As the curtain rises and the painting begins to move, the visitor has only to imagine himself on board of the swiftest steamers, passing on towards New Orleans, and he can enjoy a life-like and pleasing view of all the interesting scenery, towns, islands, boats, &c.&c —John Banvard and Family Papers, Scrapbook

Like modern movies, panoramas provided for the hordes who saw them vicarious experiences of travel and adventure. —Bertha L. Heilbron, 1936¹

1 John Banvard, Moving Panoramas and the Mississippi River

John Banvard's *Panorama of The Mississippi River* is generally understood to have been one of the most influential performative experiences of its time, and yet so many aspects of it as a multi-sensory encounter remain elusive. The extant scholarship on Banvard's work has grown through observations drawn from news print sources, from playbills and from Banvard's many self-published panorama souvenir pamphlets. Information about the dates and locations of each performance can be drawn together by aligning details in Banvard's own journal with a 75-page scrapbook of press clippings, apparently made by the artist in the mid 1850s. The scrapbook and diary are housed at the Minnesota History Center in St. Paul, Minnesota. (*John Banvard and Family Papers 1840s–1850s*).

There were a number of panoramas featuring the Mississippi River aside from Banvard's, and they are discussed at length principally by Bertha Heilbron (1936, 1949, 1967) and John F. McDermott (1949, 1958). Heilbron and McDermott's scholarship is invaluable for tracing the array of secondary sources, articles, papers, and books on the histories of Panoramas featuring the Mississippi River. Subsequent authors who reference Banvard have tended to repeat the details as they are set out by Heilbron and McDermott. Much of the subsequent writing, while marveling at the scope and scale in the achievements of Banvard and other panorama impresarios, doesn't explore too deeply their effects and the experiences of viewing. As much can be said though of Banvard's contemporaries, journalism of the 1840s and '50s tended to be hyperbolic. Banvard's own boosterish tones made claims to scale including "Three Miles of Canvas" and "The Largest Picture Ever Executed by Man." Claims of this nature around moving panoramas and other mass media entertainments in the 1800s

¹ Between 1919 and 1960, Bertha L. Heilbron (1895–1972) was on the staff at the Minnesota History Center in St. Paul, Minnesota. She made significant contributions to *Minnesota History*, the quarterly journal of the Minnesota History Society, as staff editor of the first 37 volumes.

were common, and the repetition of such assessments based on scale have contributed generally to a less developed understanding of the experience itself.

Not surprisingly, given that Banvard's "three mile painting" has long since perished, there can be almost no analysis of the painting at the heart of the performances. Looking for more concrete evidence of the viewing experience would demand an examination of all of the elements, including the painting with the dramatized spoken text, music, lighting, sound effects, but principally of the performance as an artifact. The responses of an audience too present a contributory unknown aspect in the making of each of the performance events. While it seems arguable to suggest that a sample of Banvard's writing may produce an impression of his narrative voice, his vocal delivery, etc., an experience of its effects is only discernible as an imaginary echo.

Performance events are like this, and like lived experiences of all kinds, performance events that cease to exist beyond their presentation can never be available for study as anything other than a lost artifact. Re-performance can offer a way to gain insights though, and amongst the range of extant archival materials are four piano manuscripts that were written as accompaniment for the panorama. Documents like these are easy to accept as residual evidence of the lost artifact of performance. Their presence compounds the idea that in any archival record, there will always be some things that are literally missing, and this is certainly the case for moving panorama performances, none of which persist in what might be understood as a complete artifact. The un-know-able and un-reproduce-able lived experiences of the performance of John Banvard's panorama itself will always be missing.

The occasion of 32nd International Panorama Council Conference, at the University of Iowa, in Iowa City, Iowa, with its relative adjacency to the Mississippi River and the river systems of the Midwest, presented itself as an opportunity to bring the music of the panorama back to its landscape. If Banvard's painting, the *Panorama of The Mississippi River*, on its "Three Miles of Canvas" can no longer be viewed, perhaps by presenting the music it might be listened to. My initial conference proposal set out to "draw upon the existing scholarship on Banvard's Mississippi Panoramas, and their related visual legacies, to re-situate Banvard's 'lost worlds' with their sonic counterparts." An initial and very tentative reconstitution of some elements of Banvard's panorama was performed on the 28th September 2023. Made possible as a collaboration with pianist Doreen Lee, and Mezzo-Soprano Élise DesChamps—both of whom are faculty at the University of Iowa School of Music—a performance was given of five of the "Mississippi Waltzes" with the song *The White Fawn of The Mississippi River*.

A narrative delivery that was as much a recital as an illustrated performance—lecture was devised to introduce the musical content. Beginning with a brief preliminary report of my research, reflecting on the sources and availability of information, my aim was to forefront the music through depicting its implied content: each of the musical scores is nominally connected to a specific place on the Mississippi River. A visually rich projected moving-image backdrop was developed through a collaboration with Jeffrey Ose Ohuaregbe, a Master of Architecture student at The School of the Art Institute of Chicago. Work-

ing with materials from the archival and visual records that depict the landscapes along the river, a series of digital moving image animations were produced to evoke the content of each musical piece. What follows is an initial description of some of the content, the research, and a speculative exploration of the effects of the live aural content in Banvard's panorama.

2 Mid-Nineteenth Century Purveyor of Landscape Illusions

The reputation of John Banvard's moving panorama is apparently undisputed. His *Panorama of The Mississippi River*, in all its many iterations, is understood to have been among the most influential performative experiences of its kind. Banvard's panoramas presented audiences with a narrated travelog, in the form of a simulated riverboat journey, with views of the landscapes of the Mississippi, the Missouri, and the Ohio Rivers. The qualities and vivacity of the viewing experience was reported enthusiastically in the press on both sides of the Atlantic. Life on the rivers was vividly presented in a dramatic and romantic extemporized narrative delivered by Banvard himself. Press clippings from the mid-1840s to about the mid-50s include reviews from reporters and letters from audience members who are unanimous in their praise for the effective, realistic, romantically engaging qualities in the panorama. A writer in the *Police Gazette* emphasized the scale and the value of repeat viewing: "its grandeur baffles all terms of expression . . . it must be seen; and it may be visited more than once" (*John Banvard and Family Papers*, Scrapbook, 11). A writer for the (New York?) *Mercury* (circa 1846) was just as taken in by the experience:

The illusion of the artist is so perfect, that when you see a steamboat, it appears in its full size and dimensions, with the steam and vapor passing out of the smoke pipes, and the water splashing and foaming about the huge paddles on the sides of the boat, and so with other objects. Indeed, the whole painting appears more like the living reality than a work of art (Fig. 1) (*John Banvard and Family Papers*, Scrapbook, 9).

The press write-ups are a rich and unceasing source of such hyperbolic praise (Fig. 2). Audible throughout is the literary character in Banvard's narrative, both in his turn of phrase and his vocal delivery. These same erudite qualities echo through the many souvenir programs and pamphlets that iterate the journey in copious detail alongside Banvard's biography (McDermott 1949, 48–62).

Much is told that hinges on details in the lives of people on the river too. Everyone is in motion and so too are tons of lumber, cotton, sugar, tobacco, and livestock. People are doing business, building settlements, working their newly acquired land and defending their homesteads. There are landmarks to explore, and landscape features with native traditional significance to reflect upon. In a report from London's

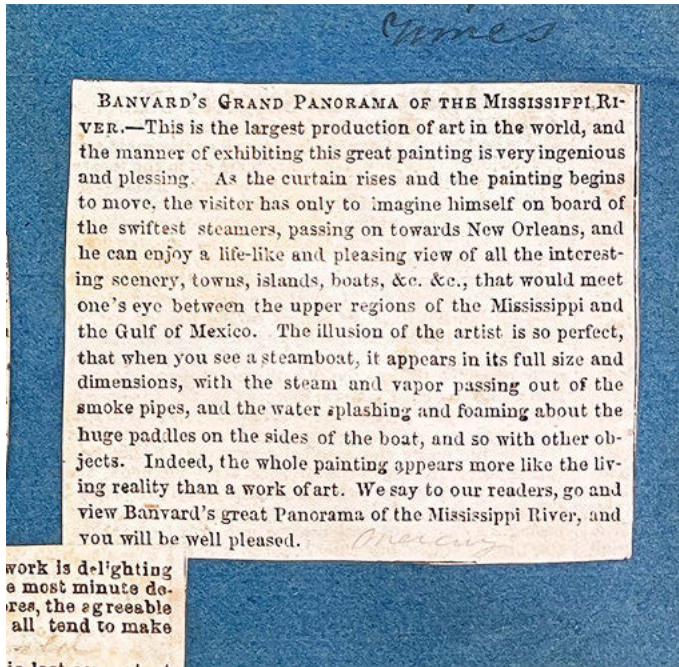


Fig. 1: Anonymous. New York Mercury, USA 1847. Banvard, John and Family Papers. 1840s–1850s. Scrapbook, p.9. Image, N. Lowe; courtesy of the Minnesota History Society, Saint Paul, Minnesota.

Egyptian Hall in 1848, with an illustrated “view . . . taken from Banvard’s great Panorama” (*John Banvard and Family Papers*, Scrapbook, 12. 1848.) is a narrative comparing Banvard’s representation with the landscape as it might have been seen by Louis Phillippe, the Duke of Orleans² in 1796. Traveling from Philadelphia to New Orleans along the Ohio and Mississippi Rivers,

What a change he would behold! Instead of endless forests, he [Louis Phillipe] would see beautiful plantations; instead of the rude dwellings of Indians, he would behold noble cities; and where the impenetrable canebreaks existed, he would find numerous towns and villages. Where he heard only the cry of the wolf and the howl of the panther, he would now hear the song of the husbandman, and the busy hum of civilization. (*John Banvard and Family Papers*, Scrapbook, 12.)

The point is amply made about the panorama as a “work of art” and therefore by implication, as an image of civilization. There are narrations of notorious and news-worthy

² Exiled from France in 1793, Louis Phillippe III, the Duke of Chartres (1773–1850), had settled in Philadelphia in 1797. He traveled on the Mississippi in the late 1790s. Banvard’s inclusion of Louis Phillippe’s narrative in the panorama in London in 1848 appears to be related to the protection given to Louis Phillippe by Queen Victoria, who housed him until his demise in 1850 at Clairmont, an estate in Surrey, England.

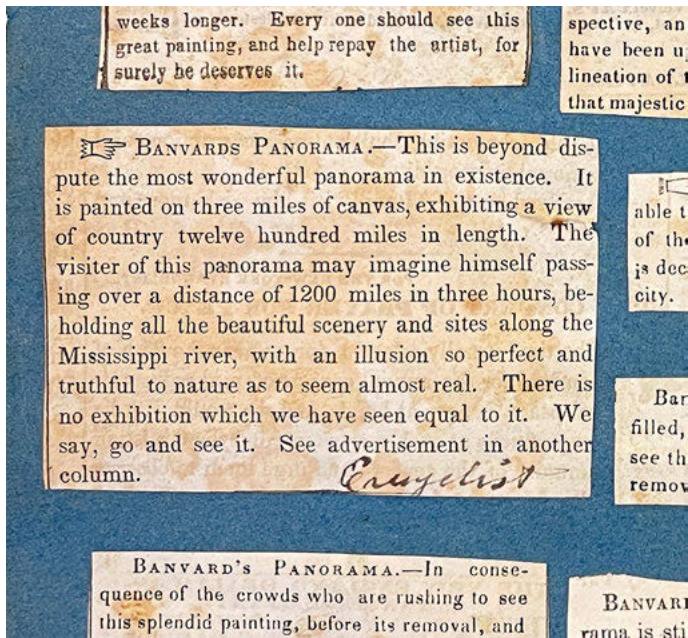


Fig. 2: Anonymous. *The Essayist*, USA 1847. Banvard, John and Family Papers. 1840s-1850s. Scrapbook, p.4. Image, N. Lowe; courtesy of the Minnesota History Society, Saint Paul, Minnesota.

events, such as riverboat accidents, shipwrecks and horrific steamboat boiler explosions. There are robbers, and hard-bitten boatmen, rubbing shoulders with finely dressed ladies and enslaved laborers. The French, the English and a good many “new” Americans encounter each other. The locations sail into view as a sequence of revelations, characterized by their sequential panoramic narrative flow which becomes synonymous with the presence and persistence of the flowing rivers themselves.

All these descriptions, anecdotes and poetic narratives are interwoven, and there is a distinct iterative romantic quality. This landscape is presented as a living entity, and its lived experiences are entwined with Banvard’s own story, which he tells with authority and a keen linguistic dexterity, as its authentic interlocutor. An issue of the *New York Tribune* in 1847 offers the following comments: “The racy and well-told anecdotes of Mr. Banvard are an important item of the exhibition, and their genuine humor is quite an attraction. The artist is reaping a rich reward for his great work” (*John Banvard and Family Papers*, Scrapbook, 9). In many respects the whole endeavor amounts to a robust retelling of the artist’s own biography. He is presented as the protagonist and very much as a heroic artist who, through his experiences of personal loss and physical ordeals in the landscape, is in possession of unique insights and connected knowledge. His undertakings, and the means through which all of the above are made visible, are evidently understood as a confluence of elements that constitute the exhibition of his panorama.

Amongst the Banvard family papers at the Minnesota Historical Society is a small stack of fan mail. One of the most striking of these is a letter, in verse, dated 9 May 1852, from James Smith, a cabinet maker from Fife, Scotland. It begins, “Immortal Banvard, sacred is they name, awakening up an extacy [sic] of flame Of high, upheaved rapture, and delight, In all the potent spell of magic might, it's sound awakes a high and holy feeling As beauteous paintings shine, Thy worth What noble art, is there displayed to view” (*John Banvard and Family Papers*, Letter). Another letter from Robert Compton, of Liverpool (UK), dated 8 October 1849, poetically aligns the mighty Mississippi River with Banvard as a person. The Mississippi in maps and literature is often called “the Father of Waters,” a name that is applied, up to the present time. Compton writes, “Sir, Excuse the liberty I take in addressing to you the following production written upon witnessing your beautiful Panorama.” Compton then follows with an eight-verse poem which opens with the stanza, “Father of Rivers! We gaze upon thee” (*John Banvard and Family Papers*, Letter). In this allusion Compton deifies Banvard, conflating him, as author and presenter of the panorama, with being the maker or father of the river and its landscape. Evidently gazing upon Banvard in the theater is akin for Compton with gazing upon the “Father of Rivers.” In all likelihood Compton's sole encounter with the Mississippi River was through having seen it in the panorama, his only points of reference being the combined effects of Banvard's performance (the painting, Banvard's vocal delivery, music and sound effects, lighting etc.). John Banvard is situated here as if he were the actual father of the river, as well as the medium of its nature, through the power of his work as an artist.

Another stream of poetic adoration appears as a press clipping in the Banvard Scrapbook from Mrs. T. P. Smith of Woodvale, Roxbury, Massachusetts.³ Again, Banvard is described as having godlike powers. Her title and opening lines alone offer enough of a glimpse of the whole:

Tributary Lines, On seeing Banvard's Panorama of the Mississippi River.

Painting, thou wondrous, glorious art!

Thine, painter, a transcendent, lofty part—

Omnipotent, our memory to aid—

Omniscient, —through all distance thou dost lead, [. . .]

(*John Banvard and Family Papers*, Scrapbook, 8.)

The epic tone continues in a further endorsement of Banvard, in a poem by a better known poet, William Wallace (1819–1881). A fellow artist and peer, he perhaps more realistically pegs Banvard as an instrument of the “God of Nature.” Included amongst

³ A person who appears to be the same Mrs. Eliza T.P. Smith receives comment in volume 46 of the diary of John Quincy Adams. In the entry for “Wednesday 28. October 1846,” Quincy Adams suggests Mrs. Smith is the producer of a Miscellany. John Quincy Adams Digital Diary, Massachusetts Historical Society, accessed December 1, 2023, <https://www.masshist.org/publications/jqadiaries/index.php/document/jqadiaries-v46-1846-10-28-p053/dual>.

an additional sheaf of press clippings, under the title, *To Banvard, After Visiting his Great Panorama of the Mississippi River*, Wallace writes,

Brave Artist! It is thine to show
 With what a liberal hand
 The mighty God of Nature strewed
 The Glorious of our land!
 The bright, the dark in harmony –
 The Beautiful—The Grand:
 Let him who found no shrine before
 Come hither and he must adore.
 (*John Banvard and Family Papers*,
 press clipping.)

In the closing verse, with much the same approach, Banvard is situated as a skillful conduit of nature rather than as its author:

Brave artist whose conceptions teem
 With river, cloud and fell—
 O! painter of the noblest Stream
 That cleaves the Earth! Tis well
 Thy Pencil chose no fleeting glance
 Of ladye-love or fairy-dance,
 But nature's grandest dream:
 And Europe in thy work shall see
 What God created for the FREE!
 (*John Banvard and Family Papers*,
 press clipping.)

The last two lines re-situate Banvard in his American context, with a reminder of transatlantic cultural and historic political rivalry.

3 Immersive Experience

Many reports have described feelings of having been actually transported by the experience of viewing, and allusions of this kind are common with other moving panoramas too. Based on the extant archival record of Banvard's work, his panorama, for its technical dexterity, appears to have been a field leader. For those who had seen the landscape for themselves, the accuracy and realism of what was being presented is never questioned; on the contrary it is, "correct and faithful to nature" (Moorhead 1847). And the detail in the passing scenes for those who had not traveled along the river was evidently as affecting as actually seeing it might be:

As an elaborate series of pictures, well drawn and well coloured from nature, presenting all the varied and (to European eyes) novel features of 4000 miles of American scenery—broad and rapid rivers, stupendous rocks, deep and variegated forests, thickly inhabited towns, isolated villages, richly cultivated corn fields, sugar and cotton plantations, intermixed with scenes of American life, savage civilized, —the panorama affords vast delight to all spectators (*John Banvard and Family Papers*, Scrapbook, 32).

A panoramic image of a riverbank might evoke a real experience of a passing landscape, as seen from an actual boat on the river. Reviews in the New York Sunday newspapers *The Atlas* and the *Mercury* readily make these connections. “As the curtain rises and the painting begins to move, the visitor has only to imagine himself on board of the swiftest steamers, passing on towards New Orleans, and he can enjoy a life-like and pleasing view of all the interesting scenery, towns, islands, boats, &c. &c.” (*John Banvard and Family Papers*, Scrapbook, 9). The same review concludes, “Indeed, the whole painting appears more like the living reality than a work of art” (*John Banvard and Family Papers*, Scrapbook, 9). An immersive effect can be felt easily with a controlled view of lateral motion. Anyone who has experienced such a sensation of movement when sitting on a train will know the feeling that occurs when the train next to yours starts to move; it can feel like your own actual movement, even though everything else tells you, you are not moving. But what of the other elements in the production? What of the interweaving of the effects of sound, music and light, in the experience?

To some degree the image qualities can be assessed from a few examples of Banvard's work that remain, notably, two small landscape paintings by Banvard belong to the collection of the Codington County Heritage Museum in Watertown, South Dakota. An anticipation of the lighting and light effects may be drawn from knowledge of the sophisticated light techniques that were commonly applied in mid-Victorian theater. Panorama showmen, like Banvard, are typically understood to have been skilled in the theatrical production methods. Many, including Banvard, worked as carpenters and scene painters in the theater, and some were adept museum display builders too. The historical ancestor of moving panoramas is generally cited as emanating from exactly this combination of theater and museum production skills. Philippe James De Loutherbourg's Eidophusikon was a kind of tableaux-vivant staging of landscape views. De Loutherbourg, (French-born British, 1740–1812) dissatisfied with the limits of scenic design for the theater through searching for a more expressive and experimental form of entertainment, developed the Eidophusikon (Huhtamo 2012, 93–112; Angelo 1828, 247–250).

Banvard grew up with a background in self-taught entertainment and entrepreneurship, and it is likely he knew of moving dioramas, alongside other handheld scroll images which were commonly available for home entertainment as toy-like objects throughout the early to mid-nineteenth century and after. Banvard, like De Loutherbourg, would have been familiar in his own time with a range of magic tricks and entertainment media that utilized light and lenses, equipment like magic lanterns, or toy theatres and manual shadow making. It is likely too that each discovered their

innovations by creatively responding to the range of diorama-like presentation media in their midst.

A letter pressed handbill in the Banvard family files at the Minnesota Historical Society appears to have been printed by John Banvard as a child. The range of performance types that are listed seems ambitious and yet aspirational. But this document shows him as being evidently in possession of a developed media skillset and of the combined capacity to project himself as a producer, a performer and a promoter (Fig. 3). Understanding the business of showmanship appears to have saved his life on a number of occasions. The threat of poverty following the death of his father when he was 14 drove Banvard to leave Boston and head west along the Ohio River in search of a living. His biographers describe how, with endless spirit and resourcefulness and the assistance of a close group of fellow artists he'd met in New Harmony, Indiana, he constructed dioramas, which ran for public viewing on a raft down the river. (Lovett 1847, 145–48) With varying success and many failures, he eventually made his first Mississippi Panorama in the years leading up to 1847 and slowly made a success of it.

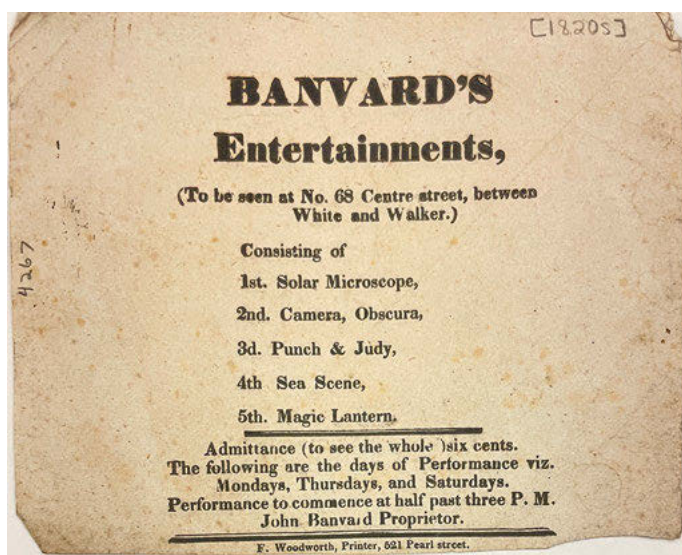


Fig. 3: John Banvard, (1815–1891) Handbill, printed by John Banvard. Banvard, John and Family Papers. 1840s–1850s. Image, N. Lowe; courtesy of the Minnesota History Society, Saint Paul, Minnesota.

4 The Panorama and its Enduring Echoes

While not necessarily the inventor of the moving panorama, in 1848 John Banvard was certainly amongst the first to have presented a well-functioning moving panorama mechanism. (*Scientific American* 1848, 100). There were many imitators besides, and other showmen exhibiting related attractions, all vying for a share of what was evidently a robust and lucrative market. The managers of such attractions, to keep audiences coming back, were in the business of constantly updating and adding new features and new scenes. The fierce competition undoubtedly played a role in the descriptive hyperbole that pervades the printed records. Banvard claims to have been the exhibitor of “Three Miles of Canvas,” and by extension, the author of “the largest picture ever executed by man.” The claims of a monumental scale are as often repeated as they are disputed,⁴ and it is important to note that while none of John Banvard's painted panoramas have survived, other examples have. Moving panoramas were typically painted on lightweight cotton fabrics, usually a plain-woven light calico type cloth. The surviving examples confirm their relative material fragility. Moving panoramas are essentially a performing scenic object that, like other elements in the service of theatrical performance, was seen only as a component part of a production, rather than as a main artifact. As a piece of painted scenery, a panorama had to withstand being repeatedly rolled and unrolled, being transported and exposed to environmental changes, both damp and heat. Regular repair and replacement were expected of any such item in a theatrical performance. The general material conditions are well understood through the conservation and study of the few surviving examples.⁵

An accepted understanding of moving panorama histories then has largely been established through the remaining trail of ephemeral printed materials that made it into the archives. Coupled with the panorama paintings that remain in museums and a few experimental reconstructions, the material qualities can be accurately described. But a fuller appreciation of the moving panorama for its effects, what its performative instances are understood to have been, is an ongoing exploration that demands performative methods. But as already stated performance events can defy capture through traditional academic methods that focus on material evidence rather than conjecture. With performative media there is always going to be something missing, beyond the event, incomplete, rather like a jigsaw with missing pieces.

4 For an extensive bibliography of panorama scholarship, surveys and sources, see Hyde, n.d. See also Hyde 1988; Huhtamo 2013; McDermott 1958; and Rathbone 1950.

5 There are three panoramas that can be used as a comparison to understand the size, scale and material of a moving panorama: the *Panorama of the Monumental Grandeur of the Mississippi Valley*, circa 1850, Saint Louis Art Museum (distemper on cotton muslin, 348 ft × 7.5 ft); *A Grand Panorama of a Whaling Voyage 'Round the World*, 1848, New Bedford Whaling Museum (1275 ft × 8 ft); *Scenes from the Life of Christ*, late 1870s, Krannert Art Museum, Champaign, Illinois (3 rolls of painted muslin 525 ft × 7 ft).

Locating the legibility of experience in material things is the focus of Jules David Prown's approach to material culture methods. Prown proposes that, "an artifact—a made object, whether you call it art or not—is an historical event, something that happened in the past" (Prown 1995, 2). If this is the case, then material things might retain evidence based on their experience. The marks of a production or manufacture, for example, may differ significantly between a hand-made ceramic vessel and a mass-produced mold cast plastic bottle, but the materials and the modes of production can be enlisted to tell a story of cultural, social, political and material conditions. Between situation, location, and motivation, a contextual intelligence is arguably evident. Perhaps these same markers can be legible in the residual material of a live event, especially if that evidence is understood as being existent in an ever unfolding present. Much like human experience which accrues as memory in an individual person, the experience of material objects might be understood similarly as accumulative and always in the present.

In acknowledgment of the problems of reading presence from objects, the French archeologist Laurent Olivier offers a complementary approach which reads material evidence through a network of connections. "We can look to see the connections between remains, separate the variable elements from the stable ones, and distinguish things that change from those that endure. The present, in this respect, opens onto all the pasts that have preceded present time and that are recorded in it. The archeology of the present is in fact all archeology" (Olivier 2015, 53). The idea of remains that endure beyond any individual event iterations of John Banvard's panorama seems tantalizingly like an opportunity to at least try looking for experience. Prown's thinking along with Olivier's nuanced understanding of the palimpsest might offer a way of locating meaning in the missing live material. Prown qualifies his speculative method by pointing out that "the past cannot be retrieved in its affective totality," and again it seems we have to take what we can from a reconstructed event. Which is as much to say individual instances of an event can never be repeated, and what remains is only ever going to be the echo of it (Prown, 1995, 2).

Acknowledging the inherent incompleteness of archival evidence is key. Arlette Farge explores related questions through her encounter with a series of bodily traces in late medieval materials in the French National archives. Farge is emphatic when she points out how "archival documents cannot be definitive proof" (Farge, 2013, 100). Instead, she places an emphasis on the importance of paying attention to the details in order to establish grounds. While not incontrovertible, things in the archives "are reference points we cannot ignore, whose meaning must be constructed through rigor and precise questioning" (Farge 2013, 100). How the performances of moving panoramas felt, what they looked like, how their enduring popularity was sustained is a conjecture based upon ephemera. But the extant evidence unquestionably says that something happened that was effective in its moment. Banvard's panorama views can only be reconstructed in a speculative manner. The idea of performance as a fragile artifact can sit comfortably with the possibility of its reconstruction, pro-

vided that an audience can accept that our contemporary sense of the media is always unique. We can guess at the possibilities, but the unique experience that so moved Mrs. T. P. Smith to write poetry for John Banvard is as unknowable as the performance itself.

John Banvard's capacities in performance are attributed in large part to his animated vocal delivery, through which he delivered a richly developed text that was praised for its poetry, its humor and its charm. In these regards the archives are rich with materials that appear to carry his voice. The written language in panorama brochures and 1840s–50s news media can be interpreted imaginatively, performed as vocal text. The news–print reports provide a lively language of contexts, and Banvard's style of narrative delivery and certain qualities of his vocal performance are arguably discernable. Reading aloud from the self–published pamphlet texts might be a stand–in for being in a theater and listening to John Banvard in the late 1840s.

5 Life on the Mississippi and Mark Twain

Continuing in a spirit of pure speculation, it is interesting to encounter a description of panorama narration in Mark Twain's memoir, *Life on The Mississippi* (Twain 1961. Pen name of Samuel Langhorne Clemens, 1835–1910). In chapter 59, "Legends and Scenery," Twain describes an encounter, while traveling on the river north of La Crosse, Wisconsin, in the direction of St Paul. He brings to life the vocal presence of a fellow passenger who, unprompted, offers a very skillful extemporized narration of the passing scenery. Twain evidently knows of him and offers us his admiration. It is certainly an accolade to be presented by Mark Twain in this way, who is at the very least an equal in such loquacious capacity. The speaker's vocal ease is much praised and Twain gives him his due and distinguishes him as a learned master of his craft, "tripping along his theme with such nimble and confident ease, slamming in a three–ton word, here and there, with such a complacent air" (Twain 1961, 313–17).

In the course of Twain's own fluent extemporaneous literary style, the speaker's professional identity is tantalizingly revealed, but not his name. "Have you ever traveled with a panorama?" asks Twain. "I have formally served in that capacity," replies the speaker (Twain 1961, 315). While no name is given to identify the traveler, there are other clues to who this might be. His senior age is hinted at and there is a brief description of his shorter stature and his demeanor. In the early 1880s, it seems right that Twain would mention a "panorama man." Perhaps Twain's conceit alludes to this actually being John Banvard. Following a personal financial disaster, Banvard had moved to Watertown, South Dakota to live with his son Eugene in 1880. There is some additional evidence to suggest that he may have traveled between the East Coast and Watertown a number of times during that period.

Mark Twain's account could of course also be a total fiction that he included in this memoir of his life on the Mississippi as a device for speaking about moving panoramas and their important connection to narrative traditions of the Mississippi River. If Mark Twain were to allude to another panorama maker of significance at that time in that region it would almost certainly be either Henry Lewis (British-born American, 1819–1904) or John Banvard. Though at this time in the 1880s Lewis had become a resident in Dusseldorf Germany, reorienting his career in 1853 intentionally to elevate his profile as a higher-class artist via the production of a set of fine prints based on his views of the Mississippi River. He served as a consular agent for the United States between 1867 and 1864, an accolade that Twain is very likely to have mentioned if this was Lewis. The inclusion of the encounter is certainly also an opportunity for Twain to align himself as a writer and raconteur with the grandeur of the panorama and its emergence as a significant American art form. In clear admiration, Mark Twain mentions Banvard by name elsewhere in his papers as an act to be followed (Twain, 1855).

6 Listening Through the Archive: *The Mississippi Waltzes* and *The White Fawn*

Amongst the materials in the archive at the Minnesota History Center in St. Paul, Minnesota, are two pieces of sheet music. The first is titled *The Mississippi Waltzes—Played During the Moving of Banvard's Three Mile Picture*, written by Thomas Bricher and published in Boston in 1847 (Fig. 4) (Bricher 1847). The second sheet music text is called *The White Fawn of the Mississippi River—From Banvard's Great Picture of the Mississippi Now Exhibiting at the Egyptian Hall, Piccadilly* and was published in London in 1848 (Fig. 5) (Schwieso and Banvard 1848). When thinking about the musical elements in moving panorama performances, a comparison must be drawn with cinematic viewing experiences. An idea posited by Bertha Heilbron in her 1949 essay “Documentary Panorama” offers a direct analogy for panorama as a kind of proto-cinema (Heilbron 1936; Lewis 1967; Heilbron 1949). The ways in which moving panorama can be understood as an anticipation of cinema is further developed by John Francis McDermott, when he refers to panoramic forms as “Newsreel—old style.” He writes, “The newsreel, or travelog, then is no invention of the twentieth century. It is now more than one hundred and fifty years old” (McDermott 1958; Rathbone 1950). The aural content, when skillfully integrated into film, is well studied as a significant carrier of emotional narrative details. On this basis then it might be appropriate to think of Banvard's panorama as a kind of moving image theater, and to consider the combined effects of the music with the moving painting as an anticipation of cinematic experience.

A close reading of *The Mississippi Waltzes* immediately suggests specific content, as it might have appeared in the panorama painting. The time signatures of each can

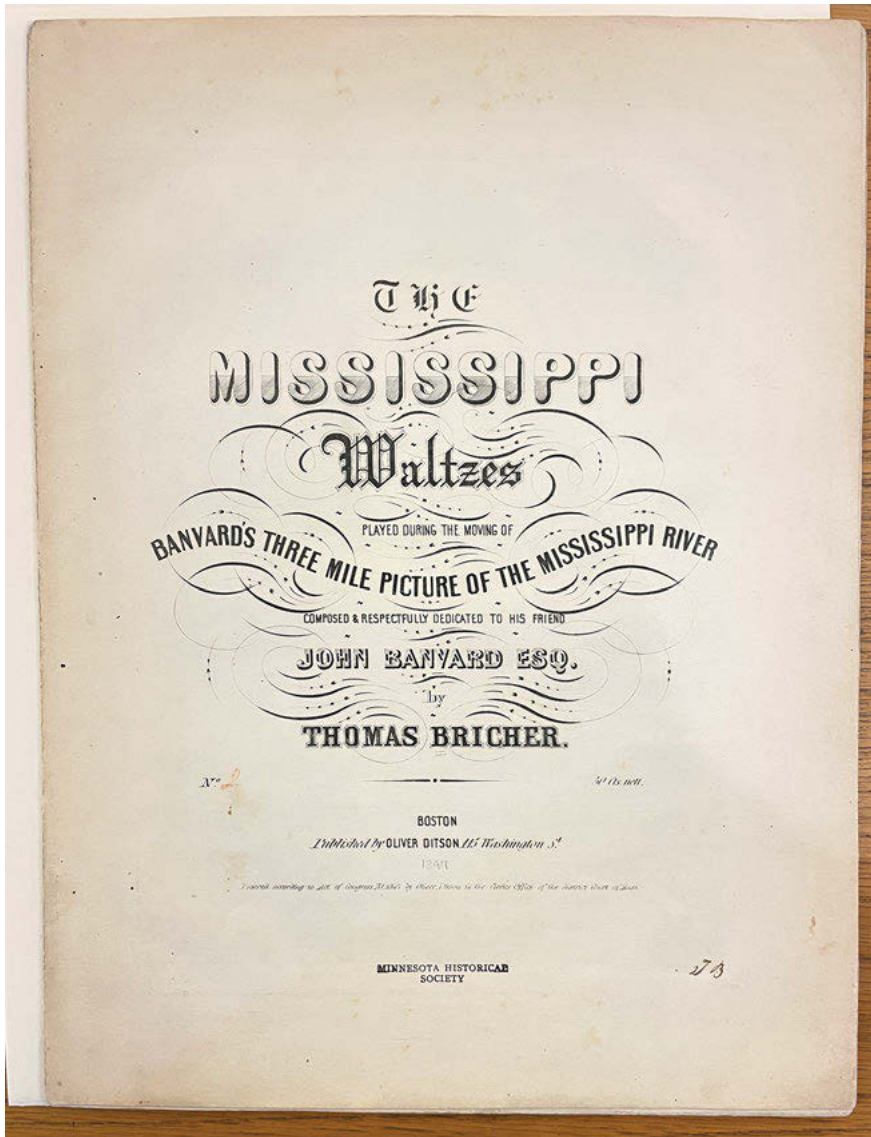


Fig. 4: Thomas Bricher (American, active 1840s). *The Mississippi Waltzes*, 1847. Cover, sheet music. Includes the following musical compositions: Iowa Waltz; Peytonia Waltz; Bayaou Sarra Waltz; The Indian Dance; Crescent March. Image, N. Lowe; courtesy of the Minnesota History Society, Saint Paul, Minnesota.

be taken as an initial suggestion of their intended atmospheric qualities which, though not part of this discussion, can yield additional nuanced meaning when taken together with an array other notational detail. These five piano pieces are described on their cover page as waltzes, but their time signatures show they might be more

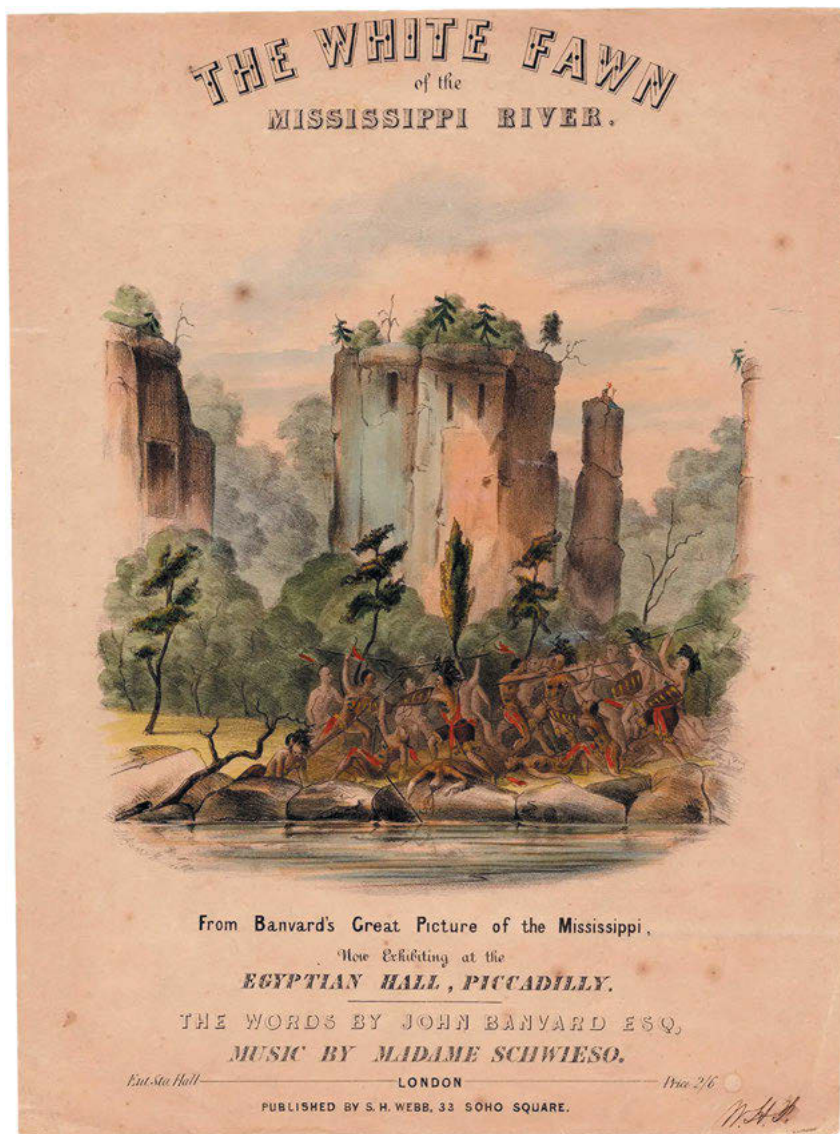


Fig. 5: *The White Fawn of the Mississippi*, 1848. Cover, sheet music. Image, James Arsenault & Company.

correctly described as three waltzes, a jig and a march. On the first inside page, the first waltz is called “Iowa Waltz” and the time signature of three–four confirms that it is indeed a waltz. Curiously though, the title is preceded with an additional heading that reads, *The Mississippi Waltzes. NO 2.* (Fig. 6) indicating that this is the second of two sheet music publications, discussed in more detail below. The second and third pieces are titled “Peytonia Waltz” and “Bayaou Sarra Waltz,” both of which carry the



Fig. 6: Thomas Bricher (American, active 1840s). *The Mississippi Waltzes No. 2*, 1847. Detail showing the first inside printed page and title. Image, N. Lowe; courtesy of the Minnesota History Society, Saint Paul, Minnesota.

same “waltz” time signature of three-four. The fourth piece, called *The Indian Dance*, has a time signature of six-eight, which can be interpreted as a jig. The last piece is called *Crescent March*, and it is indeed a march, in four-four time. The *Waltzes* are written for solo pianist, whereas the song, *The White Fawn of the Mississippi River, a Setting of a Poem by John Banvard*, is for piano and soprano voice. The cover text declares that the music is written by Madame Harriet Schwieso, and she is also named as having performed the piece at the Egyptian Hall in London.

As indicated above there are additional music publications for Banvard's panorama, also written by Thomas Bricher; these can be found in the Library on Congress database. Both were published in Boston in 1847. The first bears a cover sheet that is identical to *The Mississippi Waltzes*, (referenced above) and the title of the second echoes with the song (also referenced above) as follows: *The Death of the White Fawn. A Descriptive Song Written By John Banvard Esq. Composed & Respectfully Dedicated to Miss Susan M. Richmond (of New Bedford Mass) by Thomas Bricher* (Fig. 7) (Bricher, 1847). Evidently Bricher had previously composed a setting of John Banvard's poetry; the song words in both the 1847 and 1848 documents are identical. Again the “waltzes” have indicative titles and a parallel range of time signature variations with three waltzes, a jig and a march. In the order of their appearance, the first is “Selma Waltz,” followed by “The Gypsy's Dance,” a jig, then two more waltzes, “The Walnut Hill Waltz,” “Wood Island Waltz,” and finally, in four-four time is “Rush Island March.”

The places referenced when taken together with the names across all these documents, *Iowa*, *Selma*, *Wood Island*, *Rush Island*, and *Bayaou Sarra*, are all names that are either still in use or that can be found with the aid of maps dating from the 1840s. Banvard's 1847 panorama pamphlet mentions Walnut Hill in the narrative for “VICKS-

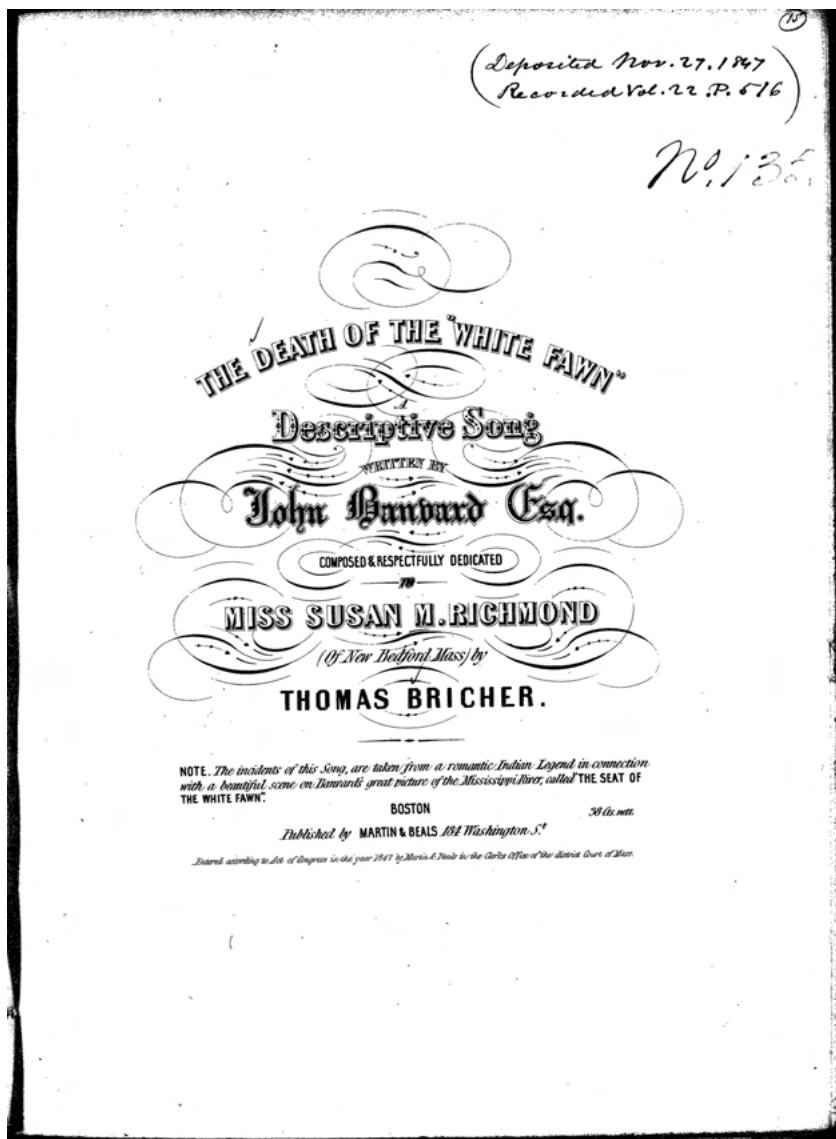


Fig. 7: Thomas Bricher, (American, active 1840s). *The Death of the "White Fawn,"* 1847. Image, Library of Congress, Music Division.

BURG," which he tells us is "Situating on the Walnut Hills. These hills come in and extend along on the river for about two miles." The *Peytonia Waltz* however is evidently named after the steamboat *Peytona*, and was almost certainly included to accompany its representation in the panorama. The *Peytona* is described in the pamphlet in relation to a location in Kentucky on the Mississippi just south of Cairo, Illinois.

IRON BANKS, And the town of Columbus are the first objects that strike the eye of the voyager after passing the Ohio. They are introduced into the picture by moonlight, with the magnificent steamer Peytona wooding; one of the largest and fastest boats on the river, commanded by Capt. John Shallcross, a well known and gentlemanly commander of the West. (Banvard 1847)

Capt. John Shallcross is also included as an endorser of John Banvard's integrity in a number of the pamphlets before and after this edition. Alongside the other pieces of music in this publication, the last piece has the slightly more obscure name of *Crescent March*. Evidently this closing march was intended to accompany scenes of New Orleans, colloquially known, up to and including the 1850s, as the Crescent City (Banvard 1847).

There is a distinction to be drawn between the indicative uses of the different time signatures. The waltz and the march times have been applied to denote civic facilities and achievements, settlements, towns and wonders of the modern age—like the Peytona which Banvard salutes as, “one of the largest and fastest boats on the river,” (Banvard 1847) whereas the two jigs are enlisted to convey less civilized, folk-based representations. The jig as a musical type is usually scored in six-eight time, and is known largely for its associations with folk and traditional music. Dancing a jig suggests a kind of freeform disorganized approach to dancing that doesn't require a partner to perform. Rather, it suggests a more vigorous physical engagement. So if the waltz speaks to organized partner dancing, and the march to an image of social order, conjuring a coordinated single unit of disciplined bodies, the jig points to a possibly drunken, wild and sweaty free for all. Of these two jigs, *The Gypsy's Dance* is perhaps representative of an older form of settler culture resonating with European folk traditions, whereas *The Indian Dance*, speaks for itself as a representation of what was perceived to indigenous wild nature.

The inclusion of indigenous histories in Banvard's panoramas is consistent with others from that time. The *Panorama of the Monumental Grandeur of the Mississippi Valley* (ca. 1850) is a good extant comparison for considering Anglo-American and settler representations of Native American people and related landscape features. Native American folklore might even be understood as ubiquitous in the arts of North America from the mid-nineteenth and into the twentieth century. In literature, music, and theater, and later in cinema and popular fiction, the North American landscape is fantasized as a vast and unspoiled wilderness, as a kind of Eden ripe for the picking, but equally waiting for its fall. The persistent presence of indigenous populations as either essentially wild and warlike or as hapless innocents serves on the one hand to legitimize and then on the other to mask the violent displacement of entire indigenous populations. *The White Fawn of the Mississippi River* is assigned a particular kind of utility in relation to this narrative, standing in as a tragic and heroic counterpoint to the implied civility and order that is understood in the waltzes and marches. The London performances of Banvard's panorama can be read as a particular high-point of its various iterations and instances of performance. The ballad of the White Fawn

serves in multiple ways as a romantic interlude, and the fact that Banvard commissioned a second, more dramatic, version of it as a song serves as an additionally loaded dramatic demonstration of contemporary perceptions of the “Indian” character, in relation to a tragic narrative with folkloric implications. The retelling of the tragedy situates it as part of a mythic history and belies the realities that were unfolding across the landscape for indigenous inhabitants up to that time and after. John Bell compellingly defines the idea of “mythic history” in his discussion of a moving panorama representation of the U.S.-Dakota War of 1862. This panorama by John Stevens (ca. 1870) known as the *Sioux War Panorama*, is characterized by Bell as an epic propaganda performance (Bell, John. 2008).

The White Fawn of the Mississippi River is a retelling of a battle between a band of Kansas warriors and another unnamed tribe. The White Fawn is the daughter of an unnamed Kansas Chief and she is betrothed to one of the Kansan combatants. The story is told from her vantage point, and in order to safely observe the battle, she has climbed to the top of a rock pinnacle, next to the river. From here she witnesses the destruction of her kinsmen including her husband-to-be. The demise of these Kansas tribespeople and their foe is explained with a sense of inevitability that stems from their apparently brave yet single-minded propensity for fighting to the death. Banvard’s text describes their fate:

Twas the last time they met though their numbers were few,
Yet each was a brave that was steady and true;
And bravely they fought till the battles dread sound
Ceased as the Kansas last brave bit the ground.

(Schwieso and Banvard 1848.)

The implications, while not fully spelled out, are clear: the demise of this band of Kansas braves is framed as being all of their own doing, stemming from a kind of resolved intractability. The song continues with a description of how the White Fawn’s own subsequent demise comes from the same kind of noble stoicism. Following the defeat of her band, and compounded by a fear for her own life, the White Fawn remains atop the rocky pillar where she herself then perishes. Here again describing her fate are Banvard’s words,

The White Fawn remains but she sheds not a tear,
There lonely she sits from morning till night,
Until her sad spirit from earth takes its flight,
Her bones there remain and are whitened by time
And among them now blooms the wild creeping vine
Yet still on that rock when the dews glisten bright
In the beams of the stars that glow in the night,
Her spirit is seen as if guarding the dell
Where the last of her tribe her Lover Fell.

(Schwieso and Banvard 1848.)

Understanding the context of such a narrative image points to a range of iterations that precede the 1840s and have persisted well into the twentieth century. Consideration of the *Sioux War Panorama* alongside these earlier representations in Banvard's work can be read as indicators of an increase in the distresses being met by Native Americans in the second half of the nineteenth century. The White Fawn is situated as a representative of all that is pure and innocent in the indigenous landscape, and simultaneously all that is lost. It is a narrative modeled in some respects on a biblical hubris: the brave Kansans are all cast out of paradise. With the additional implication that if they stopped fighting each other and learned to temper their passions their paradise could persist. This is a reality that is addressed without a hint of reflection on who is doing the casting out. It is also an image that compounds a sense of indigenous people as being close to nature, and like nature, with the capacity to endure through the seasons.

The final embodiment of the White Fawn as a pile of bones, bleached white by time, and an apparition seen in starlight, constructs a romantic fatalistic echo with another Christian image, though as a kind of natural resurrection from the dead as a vine. This added detail, of bleached bones entwined by a wild creeping vine, echoes very strongly too with much older Northern European folklore, particularly with that of the white goddess. The presence of a female deity who is associated particularly with white spring flowers is widespread in ancient European myths and stories. White goddess representations are also allied to the moon and fertility believed to be in evidence most strongly in hawthorne and elderflower blossoms (Frazer 1994; Graves 1948). While no white flowers are conjured in Banvard's poem, there is an implied whiteness throughout the scene. The image of White Fawn's "spirit" can be seen in the dew that is lit by starlight; something like a projection is being implied in this image that feels like it is placed ready for a clever stage trick. In terms of the subject, it doesn't get more romantic than this and Banvard situates the White Fawn as a blameless victim of circumstances, trapped in the stoic loneliness of an unswerving loyalty to her people.

The specific location of the bluffs upon which the White Fawn perished is hard to discern, and there appears to be a lot of similar locations where stories of a like character are connected to rock formations. The press clippings in the Banvard scrapbook indicate that the story is situated at the Bluffs of Selma, an area known for its limestone bluffs and lead deposits (Figs. 8 and 9; compare with Fig. 5). Today the bluffs have almost disappeared. Following the initial extraction of lead in the 1850s, the land was acquired by the River Cement Company, and the white limestone rock formations are likely to have been turned into cement that was used to build cities along the river and throughout the Midwest.

The retelling of Indian stories similarly preoccupies the closing sections and appendixes of Mark Twain's memoir *Life on the Mississippi*, and he firmly connects such narrative details to the Panorama Man who is then given a role as a kind of folkloric custodian. Twain acknowledges that many important details of Native American his-

Fig. 8: “The Seat of the White Fawn” (Sunday Atlas?) illustration. John Banvard and Family Papers. 1840s–1850s. Scrapbook, p. 10. Compare to Fig. 5. Image, N. Lowe; courtesy of the Minnesota History Society, Saint Paul, Minnesota.

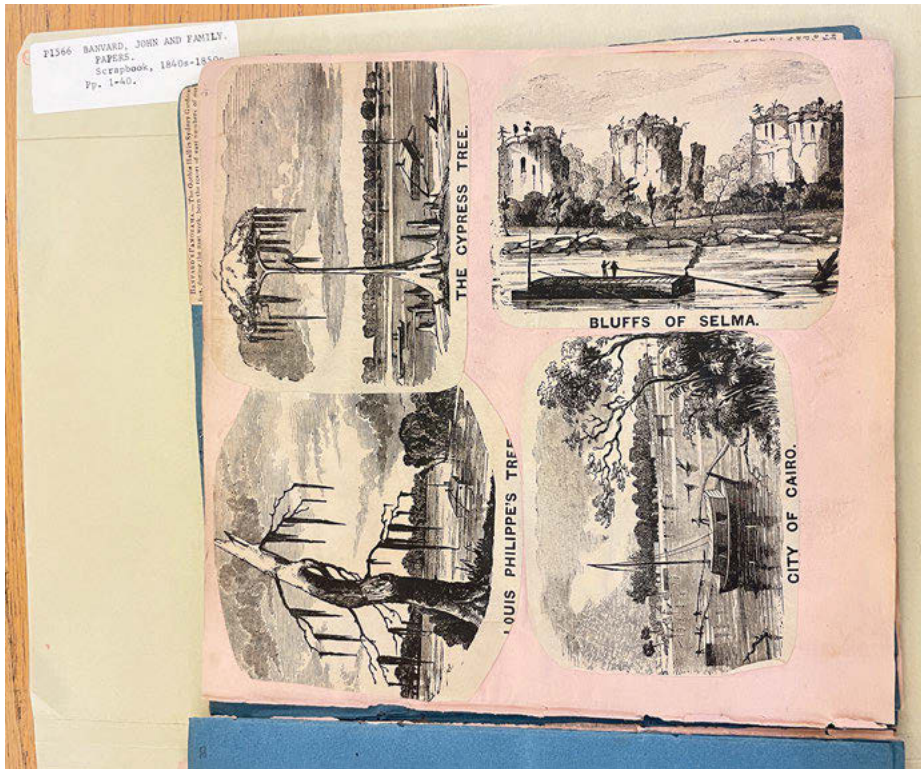


Fig. 9: “The Bluffs of Selma” news illustrations. John Banvard and Family Papers. 1840s–1850s. Scrapbook, p. 21. Compare to Figs. 8 and 5. Image, N. Lowe; courtesy of the Minnesota Historical Society, Saint Paul, Minnesota.

tory are in danger of being lost and makes a point of offering a brief narration of the scholarship and its importance for recalling landscape details and traditional life ways. Again, on the river north of La Crosse, Wisconsin, Twain puts these details forward as coming from the conversation with the Panorama Man:

And so we glide along: in due time encountering those majestic domes, the mighty Sugar Loaf, and the sublime Maiden Rock—which latter, romantic superstition has invested with a voice; and oftentimes as the birch canoe glides near, at twilight, the dusky paddler fancies he hears the soft sweet music of the long-departed Winona, darling of Indian song and story (Twain 1961, 314).

The Panorama Man goes on to retell the story of Maiden Rock, “which is not only a picturesque spot, but is full of romantic interest from the event which gave it its name” (Twain 1961, 315). The story of Maiden Rock in Twain’s retelling is presented as, “a favorite resort for the Sioux Indians on account of the fine fishing and hunting to be had there” (Twain 1961, 315). Like Banvard’s *White Fawn*, this story concerns a maiden and her betrothed and it concludes again in the maiden’s demise. While this

particular rock feature is not included in Banvard's panorama pamphlets, Maiden Rock is depicted by Henry Lewis in his 1854 publication *Das Illustrirte Mississippithal* (Lewis 1854–1857). Lewis's illustrations are understood to have been based upon his 1848 panorama, and they depict the presence of Native American lives and activities with greater frequency than Banvard appears to have done (Fig. 10).



Fig. 10: Henry Lewis, *The Maiden Rock*. (Der Werona Felsen.) From *Das Illustrirte Mississippithal*, Arnz & Co., Dusseldorf, Germany, 1854–58. Color lithograph, 13.7 × 19.7 cm (5 3/8 × 7 3/4 in). Image, Saint Louis Art Museum.

Again, in the Panorama conversation recounted by Twain, he confirms something that Lewis seems to have likewise known about: “this whole region is blanketed with Indian tales and traditions.” (Twain 1961, 316). Twain uses the opportunity in the final chapter of his book to suggest a lineage for the scholarship and collection of such stories. He begins by discounting the possible fabrications and exaggerations and acknowledges the story of Winona as a notable exception. Then he adds:

If I would hunt up Mr. Schoolcraft's book, published nearly fifty years ago, and now doubtless out of print, I would find some Indian inventions in it that were very far from being barren of incident and imagination; that the talks of Hiawatha were of this sort, and they came from Schoolcraft's book; and that there were others in the same book which Mr. Longfellow could have turned into verse with good effect (Twain 1961, 317).

Here Twain is referencing the work of Henry Rowe Schoolcraft (1793–1864), a geographer, geologist and ethnographer whose books were a synthesis of his life and work

as a government agent, and Henry Wadsworth Longfellow (American, 1807–1882), a poet and teacher who wrote *The Song of Hiawatha*.

All of these reflections offer a series of insights into the currency of the content in Banvard's panorama while also suggesting its atmospheric or experiential effects. The panorama was understood for its educational value and its capacities as entertainment. One of the many accounts included in the Banvard scrapbook from 1848 clearly articulates the capacity of audiences for both: "There is no pleasanter and more instructive place of amusement, for an evening or two, than this exhibition, and we advise everyone to attend" (*John Banvard and Family Papers*, Scrapbook, 10). The feeling is of wonder and amazement; viewing the panorama is an opportunity to both explore without traveling and to experience a sense of the demands that might be experienced if one were to travel. Viewing a long panoramic image presupposes a sense of movement through both time and space. As reviews in the New York Sunday newspapers make evident, the idea that these views might evoke a real experience was firmly understood.

Bearing in mind that many reports were given over to a certain hyperbolic tone as a means of selling tickets, the immersive world in Banvard's panorama endures as a series of echoes in the archival record. A performance of the musical elements has offered a living representation of Banvard's work. But a performance in the present, will always remain as such, as unreproducible beyond the event. Re-performance is effective for conjuring a place where a viewer can imagine for themselves how a mid-Victorian experience might have been, and such a compelling glimpse of the entire experience will always be a matter of perhaps enjoyable, entertaining and imaginative conjecture.

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Julie Boldt, James Elkins, Arthur Kolat, Daniel Weiskopf

Panoramas as Projections of the Unconscious in Nineteenth-Century Fiction

Abstract: This essay explores a theory of panoramas put forward by the experimental postwar German novelist and translator Arno Schmidt. Schmidt claims that panoramas were so pervasive in the visual culture of the nineteenth century that writers of the period were unconsciously influenced by them to such an extent that they unthinkingly framed their descriptions by drawing on experience with specific panoramas. He primarily expounds the theory in his longest work of fiction, *Zettel's Traum* (1970), translated as *Bottom's Dream* (2016), where he supports it with evidence from Edgar Allan Poe and Jules Verne. He also promoted the theory in later interviews and regarded it not only as part of his fiction but as a significant discovery in its own right. This essay extracts Schmidt's theory from its fictional context and illustrates how he thought it could be used hermeneutically to uncover submerged panoramas in the works of nineteenth-century authors. We conclude by locating the theory as part of the contemporary reception history of panoramas.

Keywords: Arno Schmidt, Edgar Allan Poe, Zettel's Traum, Bottom's Dream, Optical Unconscious

Panoramas are widely studied in the history of art and visual culture, but their appearances in literature are less well explored. In this essay we will introduce examples of panoramic imagery in the work of Edgar Allan Poe and Jules Verne, but we won't only be looking at the influence of actual panoramas on fiction.¹ Instead we will

¹ There is very interesting literature on the subject of nineteenth-century European novels and the panorama. While relevant, this material is beyond the scope of this paper. However, interested readers may find further context of this intersection in the following work. Molly Brunson (2008; 2017) has written extensively on the history of the panorama and Russian literature, notably her essay "Panorama P'era: Opticheskaja illiuziia i illiuziia romana v Voine i mire" ["Pierre's Panorama: Optical and Novelistic Illusion in War and Peace"] as well as her "Gogol Country: Russia and Russian Literature in Perspective." Byrd's (2017) work, "A Pedagogy of Observation: Nineteenth-Century Panoramas, German Literature, and Reading Culture," studies the interdependent relationship between text, reading, and panoramas in nineteenth-century Germany. Samuels (2004) discusses the role of optical devices in shaping France's understanding of its historical past, thereby influencing cultural outlets including

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be exploring an unusual interpretation of panoramic imagery in literature presented by the German novelist Arno Schmidt (1914–1979), one of the most important experimental writers of the postwar period. Schmidt's novel *Zettel's Traum* (1970), translated into English as *Bottom's Dream* (2016), is a 1,330-page conversation about Edgar Allan Poe.² It is presented as a discussion among several people who are working on a new translation of Poe into German, but it is also a comprehensive survey of the period that one of the narrators calls "POE=Zeit" [the time of Poe] (Schmidt 1970, 11), which is understood as roughly 1750–1850. Schmidt brings an encyclopedic knowledge to bear on his subject; in the course of the book his characters mention approximately 2,000 writers, naturalists, and other authors, and develop several theories about the literary project and imagination of the period.

One of the central theories advanced in the book concerns panoramas, and it is an unusual theory. The principal character Dän Pagenstecher proposes that certain texts by Poe, Verne, and others reproduce the spatial characteristics and typical details of panoramas, and to that extent the theory is unremarkable. But there is the further claim that panoramas were so pervasive in the visual culture of the POE=Zeit that writers were *unconsciously* influenced by them, so much so that when they wanted to describe vast landscapes they automatically or unthinkingly imported not only the typical depth, breadth, and height of the large panoramas but also their details, including even the spiral staircases that sometimes led to the observation platforms. In effect, panoramas were the "optical unconscious" of the POE=Zeit.³

This theory would mainly be of interest to readers of Schmidt if it weren't for the fact that the author himself believed the theory and thought of it as one of his principal discoveries. For that reason the reading we propose here has three levels, two of which are new in the panorama literature. First there is the fictional setting of the novel *Bottom's Dream* in which several German translators attempt to understand—more ambitiously, to *master*—Poe. Second is the novel's claim that the influence of panoramas was actually unconscious and is therefore not explicit in the nineteenth-century texts. And third is the phenomenon of a postwar German author proposing to rewrite our understanding of the influence of panoramas by setting his theory as a fictional dialogue.

First we will introduce Schmidt and his book to readers who may not be familiar with them; then we will survey some of the principal examples of his argument in the

the novel. Maxwell (1992) examines the nineteenth-century mystery stories of Paris and London, exploring the role of such narratives to reflect the modern city.

2 Our references throughout are primarily to the English translation, *Bottom's Dream*. In a few cases we refer to *Zettel's Traum* to discuss the physical properties and layout of the German original.

3 Rosalind Krauss (1994) develops this from an idea proposed by Walter Benjamin.

book; and finally we will consider his statements in interviews, which show that he believed he possessed a viable historical theory of panoramas outside of fiction.

1 Introduction to Schmidt and *Bottom's Dream*

Among German-language readers, Schmidt is one of the foremost postwar writers and a bridge to later postmodern developments. He is far less known in Anglophone circles, even though much of his work exists in English translation. His book, *Zettel's Traum* is physically unusual because it was typed on large sheets of paper, using the European A3 standard sheets (approximately 13 by 17 inches) and printed in facsimile. At 1,330 pages it is too large to comfortably hold, and it demands that the reader stand or bend over it. The English translation, *Bottom's Dream*, is smaller, but still unwieldy, and there are also typeset German editions.

Each page of the book is also unusual because Schmidt divided his pages into columns of justified text that oscillate among the left, right, and middle of each leaf (Fig. 1). While the system is not entirely consistent, Schmidt rationalizes the movement in a temporal and spatial framework. As explained in the *Vorläufiges zu Zettel's Traum* (1977) ["Prefatory Notes for *Bottom's Dream*"], the middle column represents the book's present tense, "one day in July, from 3:30 in the morning until 3:30 the next morning," in the German district of Celle, what Schmidt describes as "the real."⁴ The left column is ascribed to Edgar Allan Poe and it takes place around 1830–1840 in the United States. The right column takes on a miscellaneous role—it is timeless, and its locale constantly shifts. On either side there are marginal annotations that follow this system, which generally represent things that are thought by the principal character, Dän Pagenstecher.

The sheer size of the pages and the weight and scale of the book create an immersive experience that challenges the reader's ability to grasp the entire spread while still deciphering the text. This means a reader is continuously in movement, scanning left and right, up and down, even connecting the left and right edges of the folio. Paralleling the shape of panoramas, Schmidt (1977) imagined each page in *Bottom's Dream* as "a cylinder that has been written on all around and which has then been cut open from top to bottom in a straight line and laid flat; That means the right edge can definitely explain the left one—and vice versa." That imaginary 3-D version of the pages prompts a reading experience that enacts panoramic references even aside from the arguments about panoramas that develop in its pages.

4 English language quotations from the *Vorläufiges zu Zettel's Traum* are our own translation.

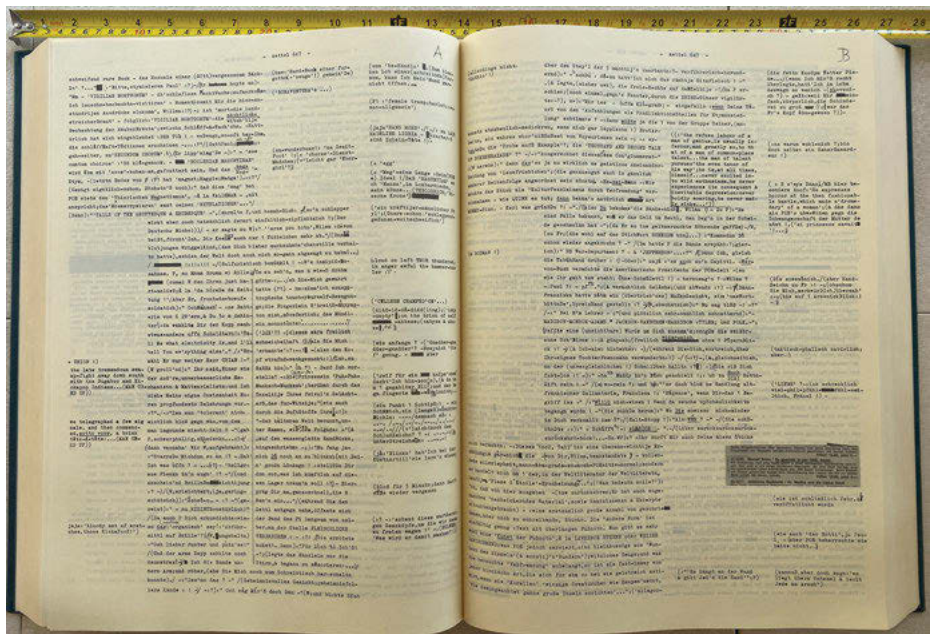


Fig. 1: A two-page spread from the “typoscript” facsimile edition of Schmidt’s *Zettel’s Traum* (1970). 13 inches × 17 inches × 3 inches. Image, Arthur Kolat. Used with kind permission of the Arno Schmidt Stiftung.

2 The Panorama Theory in *Bottom’s Dream*

Schmidt presents the theory of panoramic influence through the voice of Dän, who is both the book’s main character and its principal narrator. While in this section we ascribe the theory to Dän, we will see that Schmidt himself advanced these ideas in his own voice in several interviews. Because *Bottom’s Dream* is largely a reported conversation, theory and evidence are freely interwoven and are often disrupted by objections and digressions from other characters. Our presentation rearranges the material to make the structure of the argument more perspicuous.

The argument begins with a sketch of the rapid spread of panoramas following their first display in London in 1792. Dän is prone to encyclopedic lecturing, but his discussion here is notable for its length and coherence, as if he is presenting thoughts he has worked out extensively ahead of time.⁵ He reminds us that by the early 1800s

5 The evidence of how *Bottom’s Dream* was composed indicates that this was Schmidt’s own working method. In preparation to write the book he assembled boxes of *Zettel* [notecards] each containing references to other texts, bits of argument, scraps of dialogue and description, etc. These were filed under labeled subheadings roughly in the order he planned to use them, then removed, typed up, and

it was possible to view panoramas throughout Europe and that by the 1830s variants such as the neorama, pleorama, cyclorama, and diorama had proliferated. Of particular relevance to the interpretation of Poe, he comments that “after 1830 (saith BAPST, 20) the USA was flooded with pano= & dioramas!” (Schmidt 2016, 163).⁶ This historical development is separated into two periods: one ca. 1800–1850, the other 1860–1890. This “two-fold beginning” (BD, 154) is topically motivated. Early panoramas depicted famous cityscapes, (“the world’s metropoli of interest to Everyone” (BD, 154)), mountaintop views and other spectacular inaccessible vistas, Biblical scenes (e.g., the flood), and naval encounters such as the Battle of Navarino. Late panoramas, driven by “the rapid blossoming of the natural sciences” (BD, 154) centered on natural historical themes and “primeval” landscapes (BD, 155). These aimed both to educate viewers and to evoke the wonders of nature.⁷ In the context of the novel, the force of this periodization is to show that panoramas were rich enough in content to underpin a wide range of literary production.

Dän’s opening remarks, then, lay down the historical record for the other participants in the dialogue as well as for readers. They also begin to conjure the effects that panoramas had on their contemporary viewers. The paradigm of this “new optical Grand=Experience” (BD, 152) is described as unfolding in stages. Having paid their fare, the viewers would have entered through a darkened booth and descended stairs into a lightless corridor that they traversed long enough for their eyes to acclimate. After ascending via spiral staircase they emerged onto a viewing platform typically dressed like a stage set to resemble a rooftop, terrace, or kiosk. The open roof of the panorama permitted light to flood in, “allowing the most incredible ›illumination from above‹ to be shed on the surrounding paintings, all carefully=prepared by good masters of second rank) – the effect=then was *at least* as great as today’s ›television‹ has been for (today’s) authors” (BD, 153).⁸ Following the journey through darkness,

assembled into the book’s text on the fly. For more on Schmidt’s working method see *Julia, laß das!* (Fischer 2021, 5–12).

⁶ Inline citations to the English translation, *Bottom’s Dream*, will hereafter follow the format (BD, page#); The parenthetical reference here (“BAPST, 20”) is to Germaine Bapst’s 1891 work *Essai sur l’histoire des panoramas et des dioramas*. *Bottom’s Dream* is thick with such references, which can be as narrow as individual pages of particular works or as wide as authors’ entire undifferentiated corpuses. Encyclopedias, lexicons, and dictionaries from the POE=Zeit are freely invoked for the light they shed on the shared knowledge of the time.

⁷ Alexander von Humboldt, well known to both Poe and Schmidt, emphasized the capacity of highly immersive panoramas to produce long-lasting unconscious effects: “Panoramas are more productive of effect than scenic decorations, since the spectator, inclosed, as it were, within a magical circle, and wholly removed from all the disturbing influences of reality, may the more easily fancy that he is actually surrounded by a foreign scene. These compositions may give rise to impressions which, after many years, often become wonderfully interwoven with the feelings awakened by the aspect of the scenes when actually beheld.” Cited in Werner (2004, 61).

⁸ We will retain the English-language translator’s versions of Schmidt’s idiosyncratic spelling and typography throughout, even though our account is mainly aimed at the root sense of Schmidt’s words. In practice, a full reading needs to take notice of all his alterations from normative orthography. Here

the sudden profusion of color, lifelike terrain, and various technologically contrived illusions of motion produced an effect that, “for an unsophisticated age,” was “simply incalculable” (BD, 154).

Dän comments in passing on several other forms panoramas took such as Carl Wilhelm Gropius’s pleorama, which replaces the immobile central platform with a bobbing boat for the viewer to sit in. Daguerre’s diorama also receives special attention for its presentation of movable translucent images displayed within a frame under variable illumination, an arrangement that permitted changes in time and weather to be realistically depicted (BD, 153–54). He even hints, in a half-jesting marginal comment, at the possibility of panoramas that incorporate smells: “Odor (with genuine=hierodullic nuditettes in the foreground) a pen=aroma” (BD, 154). What unites all of these is the shared quality of experience that they provide. This experience is characterized by sensory vividness as well as lifelikeness or realism that seems to suddenly transport the viewer directly into the presence of the scene. Dän’s favorite encyclopedic sources are marshaled in support of these reception claims: the Brockhaus of 1830 comments that “one truly believes one is transported to the region depicted,” and Pierer’s *Universal-Lexikon* (2nd ed.) says that they provide the “illusion of truly beholding the object” (BD, 153). In addition, as we have seen, the scenes depicted are often exotic ones (“thrillers,” “up-to-dately exciting ›fields of slaughter‹,” and other “fresh=unexpected *topix*,” (BD, 154)) that are highly arousing and affectively charged: “Just try’n’*imagine* what a thrill it must’ve been,” urges Dän at one point (BD, 154). A subsidiary claim is that this arousal can take on a specifically erotic character through its resemblance to the pleasures of voyeurism. This is most relevant to his claims about Poe, but also contributes to the generally heightened bundles of sensation that panoramas can evoke.

Once Dän has established to his satisfaction that there is a general type of experience that panoramas made widely available, the central claim of his theory then turns on the mechanism by which it infiltrates the unconscious of certain writers. His proposal is that “for a mentality fulla fantasy – (a DON QUIXOTic one at that, if possible) – the powerful impression left by such a panorama, became the *unconscious*, ›cryptomnetic‹ basis for far-ranging fictions, indeed for *entire books*” (BD, 155). The “›literary effects‹ of panoramas” go beyond their surfacing as explicit subject matter in books of the period: instead, “the entire=technical apparatus” shapes the form and content of these works, as we can see once we have in hand “the key of ›panoramism‹” (BD, 156).⁹

This infiltration is possible because, in Dän’s eyes, many writers are not only “fulla fantasy” but inherently prone to subconscious falsification. This is particularly

the neologism “carefully=prepared,” linked with an equal sign, is a typical Schmidt invention, suggesting a single word. The single carets ‹ and › stand for the German style single-quotation marks, themselves translations of the Anglophone inverted-comma quotes Schmidt uses in the original German.

⁹ Werner (2004, 56–61) surveys the many overt discussions of panoramas in Poe’s work.

true of those that he calls “Dichter Priester,” i.e., “poet-priests” or “DPs” for short. These DPs are the “DON QUIXOTic” personalities mentioned above. Dän is coy concerning just how many writers might suffer from being DPs, but he intimates that it is a widespread disorder and Poe is, for him, the prime specimen. Fully describing his notion of DPs would take us far afield, since much of *Bottom’s Dream* is a catalog of their pathologies. Their main characteristic for our purposes is that they habitually project unconscious fantasies onto their perceptions, coating and concealing reality with a distorting gloss. This gives rise to “*the constraint of being unable to describe a factual state of affairs*” (BD, 160). In particular, the more these fantasies are “richer, more affect=laden & complicated . . . the more they tend to squeeze inbetween him & his perception of reality, like some poorly=fitting & yet pied=colorfull setta spectacles” (BD, 161). DPs are particularly vulnerable to these distortions when intoxicated: “for even *small* dosages of alcohole: & then, once in a twilit state, it’s into the panorama!” (BD, 164). As the character Wilma puts it, summarizing Dän’s proposal: “You mean then that ‘nfact such stimuli can be *subconly* ex=panded, and ultimately provide the foundation for an artist’s own work: *without* the artist himself being clearly=aware of the real reason?” (BD, 155). To which Dän replies, parenthetically: “(Oh, nothing more common)” (BD, 155).

Drawing these threads together, Dän’s argument invokes (1) the *historical* claim that panoramas were pervasive within the visual culture of the nineteenth century; (2) the *phenomenological* claim that panoramas provided a similar general type of experience to their viewers; and (3) the *psychodynamic* claim that for a common type of writer this experience was calibrated to infiltrate their unconscious and project itself into their works without their awareness. In this way, highly immersive new technologies of vision disperse and submerge themselves, becoming formations in the literary-optical unconscious. Given these premises it is plausible that elements of panoramic experience will inevitably surface, perhaps in cloudy or disguised forms, throughout the writing of the time.

The argument clearly is not one restricted in principle to panoramas, and Dän notes several parallels with other contemporaneous visual technologies such as the camera obscura, wax museums, and the magic lanterns shows that enchanted Dickens.¹⁰ He also suggests that the influence of panoramism as a visual mode “continues to have its effects into our own time” (BD, 155). Examples of this include the Futurama of the 1939 World’s Fair and several televised panoramas from the 1960s, as well as more sedate educational apparatuses like the planetarium. In a reply to Wilma’s barbed skepticism he offers a sweeping rebuttal:

You fail to recognize=Wilma, that the influence of paintings & painting=like images, can be *proved* dia=positively . . . *How=often* ‘ve poets (including painters, too, if y’ like) not been stimulated by fu-

10 See Marsh (2009) for discussion of the inspiring effect of magic lanterns on Dickens.

tografs . . . by the phlix, by theater, ›art books‹, windo-shopping: nowadays *tele=fission!*: modern artists should *be required by law* to keep notes on the broadcasts they watch day=in, day=out (BD, 159).

This theory of unconscious infiltration would be of little use without some way of confirming its claims. Fortunately, Dän also advances such a hermeneutic proposal that develops from the Quixote references seeded earlier in his discussion. He recounts a short episode from Chapter XVI of *Don Quixote* in which the deluded knight arrives at an inn, taking it for a castle, and encounters a servant girl whom he remakes into a princess in his imagination. Her smock becomes silken garb, her cheap glass beads become pearls, her “horse’s mane” hair shimmers into brightest gold, and her stale breath sweetens (BD, 162). The contrast between the Don’s fantasy and the crude reality is, as always, noted throughout by Sancho. And this is the interpretive approach that Dän recommends we take to confirm his theory of panoramism:

You are obliged to take the statements of these one=sidedly=enchantd witnesses, and reconstruct both their=selves & their true appearance; their deeds, t’gether with the world that actually surrounded them during their earthly pilgrimitch. – That means«, (I sym=pathetic’ly relented): ›recognizing, fr’instance, how FOUQUE’s ›Fata Morgana‹ was based on the corresponding GROPIUS diorama. Or the ›magic mirror‹ in the castle of his witch Minnetrost . . . (BD, 162–163).

In the *Quixote*, the interpreter (Sancho) is correlating elements of the real world (i.e., the world presented as real within the text) with those of the Don’s fantasy. In panoramism, the terms of the analogy shift subtly. Because of the interposed fantasy element, real-world panoramas do not appear *as* panoramas either in the imagination of authors or in their texts. We interpreters, like savvier Sancho Panzas, must correlate elements of the panoramic experiences that they underwent in reality with elements of their fictions. However, these fictional creations may not flaunt their origins, so we also need to correct for distortions imposed by their authors’ “pied=colorfull setta spectacles” (BD, 161). To see how this Quixotean hermeneutics works in practice, we now turn to several examples worked out in the novel.

Submerged Panoramas in Nineteenth-Century Fiction

Dän’s initial case study draws from Chapter 30 of Jules Verne’s *Voyage au Centre de la Terre* (1864, rev. ed. 1867), one of many “Hollow Earth” novels discussed in *Bottom’s Dream*. We are slowly instructed in how to read the text along with Dän’s interlocutors, who offer their own glosses along the way. The chapter describes Verne’s narrator awakening after being trapped in darkened tunnels for days. He climbs a set of rocky steps and finds himself suddenly on the shores of a brightly lit subterranean sea. This is the first correspondence, mapping onto the entrance to the panorama via a spiral staircase. Verne’s narrator describes the foreground containing sand, shells, and “the bones of antediluvian animals,” which Wilma conjectures were in reality

whale bones arranged as a kind of set dressing (BD, 157). The “line of huge cliffs . . . curved upward to incredible heights” corresponds to the cupolaed building in which the panorama is staged (BD, 156). The vegetation is strangely motionless despite the wind, implying its artificial nature. The quality of the light in the cavern also betrays its artificial origin: it is “not the light of the sun . . . nor was it the pale, vague glow of the moon . . . no! The power of this light . . . clearly indicated *something of purely electric origin*” (BD, 156). Similar hints that the scene is illusory appear in the narrator’s description of the horizon, which is described as a misty curtain or backcloth against which the scenery is “*depicted*,” which Dän glosses as “the involuntary message to tell us the whole thing is ›drawn‹” (BD, 156). Even the sky hints at its own artificiality: “instead of a sky shining with stars, *I knew* . . . that above those clouds there was a *vault*” (BD, 156).

Within this description, then, we find a structure of correspondences that tightly maps onto the paradigmatic experience of the panorama-viewer. But it is a structure that is fitfully concealed from the reader and, surprisingly, from the author as well. The fantasy of an underground sea is not a free invention of Verne’s fantasy, but something tacitly governed by dominant aspects of nineteenth-century visual culture. Quixotean hermeneutics brings these submerged references fully to the surface.

Dän goes on to demonstrate the application of his theory of panoramic influence by reference to specific texts of Poe’s, including what he calls Poe’s “panorama=stories” (BD, 163). Dän argues that one dead giveaway of Poe’s panoramic opticality is the appearance in the text of a character turning or whirling on their heel. This is anchored by the explicit connection Poe makes in *Eureka* (1848) between whirling on one’s heel and fully comprehending the 360 degrees of the panoramic view on top of Mount Etna. Poe writes:

He who from the top of Ætna casts his eyes leisurely around, is affected chiefly by the extent and diversity of the scene. Only by a rapid whirling on his heel could he hope to comprehend the panorama in the sublimity of its oneness. But as, on the summit of Ætna, no man has thought of whirling on his heel, so no man has ever taken into his brain the full uniqueness of the prospect; and so, again, whatever considerations lie involved in this uniqueness, have as yet no practical existence for mankind (Poe 1848, 8).

Poe returns to the theme of a mountaintop panorama later in *Eureka* by way of calculating how much of the globe such a panorama might represent and how many successive panoramas might then be surveyed in order to see the entire globe. Whirling around on one’s heel manifests this impulse to see more comprehensively the 360-degree picture in which one is immersed.

Dän suggests that Poe did not actually stand on top of Mount Etna and whirl, but that he visited a panorama of Etna instead. “And what=if, between those well=documented dates —: *by QUINN!* — there could [be] *no room* for a be=pirouetting of Ætna, even aboard a jet plane: *what then!?*” (BD, 151). The answer comes some pages later: “On Sicily, He, POE, was=*not*: but as the profut didn’t go to the mount, this time the

mount made its way to the profit" (BD, 163). Paul, the good disciple, completes Dän's thought: "And, if the panorama happened to be devoid of people: He could've whirled on his heel with no difficulty!" (BD, 163).

Dän's claim about *Eureka* is that the quality of the experience of having seen a panorama manifested itself in Poe's work as an interchangeable substitution for seeing the real vista. "What we have here is a *triumph* of perspective & illusion," lectures Dän (BD, 152). The triumph of perspective is that the view is all-around, 360 degrees; its triumph of illusion is the vividness and verisimilitude of depiction. Contemporaneous accounts, Dän tells us, even proclaimed panoramic depictions identical to their objects: "«Qui a vu le panorama de Londres: est allé à Londres!» MIEL" (BD, 154).

Poe's supposed substitution of the panorama for the actual view of Etna in *Eureka* may be more of a conscious manifestation than an unconscious one. In this case, Poe may have been consciously using his memory of a panorama to describe the visual phenomenon of looking all around from a mountaintop. Dän argues further that the panoramic details of Poe's stories often appear unconsciously, beyond the control of the author, as happens in "A Tale of the Ragged Mountains" (1844).

The short story is ostensibly about an ailing man named Augustus Bedloe who goes on regular walks in the Ragged Mountains near Charlottesville, Virginia. One day he stays out longer than usual and has a strange dreamlike expedition, whereupon he returns home and recounts the events to his doctor. It is determined that the details Bedloe describes are actually the revolt of Chait Singh in the Kingdom of Benares which took place in 1781. The story ends with Bedloe's adventure explained by the participation of his historical double, Mr. Oldeb, in the original battles.

Dän proposes that this tale of a man stumbling upon an historical battle in a foreign land during a walk in the mountains is really Poe's experience of the panorama of Benares manifesting itself unconsciously in the landscape and events of his fiction. From the beginning of Bedloe's retelling of his adventure, Dän sees disguised panorama allusions everywhere. For example, Bedloe begins his tale by saying that he "bent his steps immediately to the mountains, and, about ten, entered a gorge which was entirely new to me" (Poe 1983, 898). Dän claims that the gorge in question comes from Poe's experience of being intoxicated in the Benares panorama and therefore mistaking "a mighty cupola=edifice for a ›hill‹" (BD, 164). Poe visited panoramas while under the influence, Dän says, and in Poe's text Bedloe indeed uses morphine "in great quantity" with his morning coffee, before setting off on his rambles (Poe 1983, 898).

Dän dissects the story, explaining particular elements and their connection to Poe's experience in the Benares panorama. Bedloe describes a drum beating, a "wild rattling or jingling sound," and a half naked man with hot breath rushing past him followed by a hyena (Poe 1983, 899). Dän explains the panorama's setup: "An (aboriginal=)drum, (as acoustic backdrop), was surely easy to provide? 1 man with a massive bundla keys, & above all ›hot breath‹ even more easily" (BD, 165). "«The hyena?» – (can be done with any costumed dog! (Didn't I talk about the HAGENBECK=Panorama,

with Eskimos & whale ribs? Well=then.))” (BD, 165).¹¹ After the hyena passes, Beldoe is astonished to find himself basking in a beam of sunshine underneath a palm tree. Paul chimes in with his application of Dăn’s theory: The palm tree in Ragged Mountains could, “cording to Dăn’s drawing; illustrate the ›stepping out‹; and this time the ›écran‹ above the observer is cleverly=shaped as a ›crown o’ palm‹” (BD, 165).

The drawing in question is one that Dăn has sketched on a notepad, for which Schmidt provides an illustration in the right margin of the page (Fig. 2). The stepping-out refers to emerging from the “increasing=gloom” of the panorama’s entryway, then climbing a “steep spiral staircase upward: thru a trap doorlet. And one found oneself on a ›terrace‹; above a ›toile de fond‹ or ›écran‹ – very cleverly ›camouflaged‹; whether as ›pavilion=roof‹ or as ›heavy cloudcover‹” (BD, 152). The illustration Schmidt provides is a cross section of a panorama from the *Nouveau Larousse illustré: dictionnaire universel encyclopédique* (1898). In it one can faintly see a figure emerging from shadows into sunlight on the terrace after having come through a dark access corridor and up a spiral staircase.

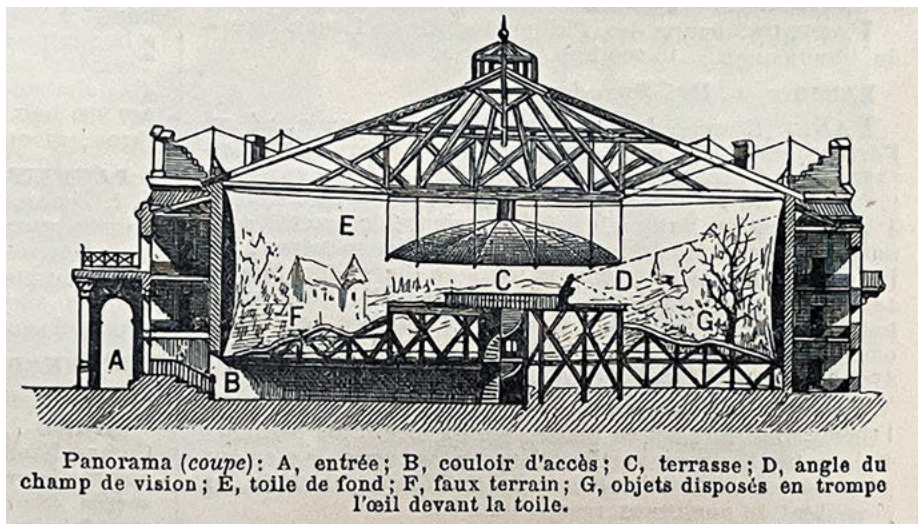


Fig. 2: Cross section of a panorama from the *Nouveau Larousse Illustré: Dictionnaire Universel Encyclopédique* (Paris: Larousse, 1898), volume 6, page 644. Image, Melissa Wolfe. *Bottom's Dream* reproduces the diagram without the legend.

¹¹ The "panorama" referenced by Dăn was in fact a portable diorama, highlighting inconsistency in Dăn's accuracy. It is worth noting that the specifics of panoramic periodization may not align with current scholarship. Furthermore, certain historical details may be irrelevant and will be addressed upon the introduction of Schmidt's theory.

Continuing the inventory of panoramic details, Dän says that the kiosk in which Bedloe seeks refuge is “how the ›exit‹ mite’ve been stylishly camouflaged” (BD, 166). Finally, when Poe writes, “The crowd had departed. The tumult had ceased. The city was in comparative repose,” (Poe 1983, 903) it means, “In plain German: the spectators have left; He’s standing all alone in the panorama” (BD, 166). In the last paragraph of the story, when the narrator realizes that the historical figure, Oldeb, is Bedloe’s double, he turns on his heel in apparent astonishment. If the panoramic experience is one of “all-round in=pection” (BD, 168) then turning on one’s heel is the panoramic gesture par excellence.

Poe’s 1835 story “Hans Phaall—A Tale” also contains descriptions of all-round inspection and a character at the end who turns on his heel. “Hans Phaall” is not analyzed by Dän in *Bottom’s Dream* for its specific panoramic undertones, however, the story contains suggestions of panoramic influence that are strong enough to support such an analysis. The tale is about Hans Phaall who journeys to the moon in a hot air balloon of his own design. Throughout the story, Phaall is constantly describing the view of earth from the balloon, which directions he is able to view it from, and what part of the earth’s area he is able to survey as the balloon rises higher and higher. At the end of the story, the burgomaster, after having read Phaall’s account of his journey, turns around “three times upon his heel in the quintessence of astonishment and admiration” (Poe 1983, 212). At one point Phaall describes the view of earth in terms of the cardinal directions: “To the westward, the northward, and the southward, as far as I could see, lay a boundless sheet of apparently unruffled ocean . . . At a vast distance to the eastward, although perfectly discernible extended the islands of Great Britain . . .” (Poe 1983, 194). A few pages later, Phaall writes, “In the sides of the covering thus adjusted round the car, had been inserted three circular panes of thick but clear glass, through which I could see without difficulty around me in every horizontal direction” (Poe 1983, 197). Later still, Phaall’s journal records, “At all events I undoubtedly beheld the whole of the earth’s major diameter; the entire northern hemisphere lay beneath me like a chart orthographically projected; and the great circle of the equator itself formed the boundary line of my horizon” (Poe 1983, 204). In this case, there is no actual panorama of the earth from space that Dän explicitly claims Poe saw. Nevertheless, “Hans Phaall” contains descriptions of panoramic viewing and of swiveling through the cardinal directions, which fit Dän’s theory that the pervasiveness of panoramas in Poe’s visual imaginary may have unwittingly supplied him with descriptive details.

Among Poe’s other panorama stories, Dän mentions “The Domain of Arnheim” (1842), about a man who creates a landscape garden that spectators tour by boat. Dän connects this to the experience of a cyclorama, “In 1 kind of which spectators sat in a little boat” (BD, 167). He continues adding examples: “And ‘n case You should demand a *diorama*=example): »Then that would be – (at least there exists a considerable possibility of it) – LANDOR’S COTTAGE;” in which “another ›impossible sun‹ makes its appearance, beyond all doubt a bundled spotlight=effect” (BD, 167). Dän acknowledges that Poe describes the sun in “Landor’s Cottage” in terms of the final scene of a theat-

rical presentation, which Dän thinks Poe may have seen as a schoolboy in London. The narrator of “Landor’s Cottage” describes the landscape scene coming “fully into view . . . piece by piece, here a tree, there a glimpse of water, and here again the summit of a chimney, I could scarcely help fancying that the whole was one of the ingenious illusions sometimes exhibited under the name of ‘vanishing pictures’” (Poe 1983, 1138). Dän is quick to remind his friends that “in 1811 CHILDE had also already introduced ›dissolving views‹ to London; where the pictures of two projecting=apparatuses were placed=atop & blended into one another” (BD, 167).

3 Schmidt’s Claims About Panoramas Outside of Fiction

This theory, strange as it is, is presented in a setting that is nominally fictional. A reader of Schmidt’s work is always alert to the thin divide between actual events and the fictional setting, and in *Bottom’s Dream* that membrane is especially thin because the thousands of authors and texts referred to throughout the book are all real. Nevertheless we are not proposing that a study of panoramas needs to consider their appearances in fiction: there is evidence that Schmidt took his theory seriously outside of the context of his novel, and that means the theory takes its place in the history of reception of panoramas—in this case, it belongs to the specific moment in the late 1960s when Schmidt was “discovering” his theory and writing his book.

In several interviews Schmidt speaks of his theory in the course of discussing *Bottom’s Dream*, but when he does, he presents the theory independently of the fiction. There is a “hitherto-unseen educational principle in the works of nineteenth-century writers,” he announces in the *Vorläufiges zu Zettel’s Traum* (Schmidt 1977), a recording he made based on typewritten notes. That “principle” is the panorama, a word he identifies as specifically modern, dating from its use by Robert Barker in 1792—a word, therefore, “similar to ‘mansard’ or ‘gas’.” He then gives a step-by-step description of the panorama, interrupting his exposition of his novel in a sort of short historical essay. (“This circular painting was illuminated by a one-meter-wide edge of glass in the roof that ran all the way around the building. And the visitor, once he had paid his money at the cash register, was guided through a tangle of long, increasingly dark corridors . . .” and so on.) As proof of the veracity the panorama seemed to possess he cites Chateaubriand’s experience in the panorama of Jerusalem. In Schmidt’s account, Chateaubriand pointed to a place he said was the Saint-Sauveur convent and said “there is the window where I used to sit and write.”

Schmidt’s historical lecture on the panorama occupies an unusually large space in the recording of his remarks, as if it is the centerpiece of his project, rather than the book’s more obvious and pervasive claim, that he has discovered the truth about Edgar Allan Poe. He conjures the nineteenth-century experience for the listener:

Or how would it be if you had entered such a panorama, and you had been received as a guide by a Hindu in a turban and loincloth, who looked at you through glazed eyes, next to him a shee . . . a big shepherd dog made up as a hyena. And this man guided you through the aisles and you stepped out into a kiosk and saw the holy city of Benares lying around you – winding with countless alleys [and] balconies, [and] the Ganges flowed through – and projected onto [the entire scene] from behind – (in some panoramas *both* sides of the canvas were painted) was the rebellion of Cheyte Sing, one of those eternal Indian rebellions. This is EDGAR POE'S story of the RAGGED MOUNTAINS. – It is based on this panorama of Benares and he used it all – unconsciously – in fact (Schmidt 1977).

Schmidt then goes on to note that Poe quotes Johann Adam Breysig's panorama of Mount Etna. He notes, as he does in *Bottom's Dream*, that Poe is said to have traveled widely, and seen St. Petersburg and Paris, but that he actually imagined them after having seen Breysig's panorama in New York City.

The thesis is extended to other authors. Schmidt says Theodor Storm described a similar panorama in *Regentrude*, and so, as we have seen, did Verne in *Voyage au Centre de la Terre*. “*There*,” he says, “when you stepped out of the rock grotto – led by the guide (in mountaineering costume with an ice pick and rope hanging around your neck) you saw a primeval landscape lying around you, with the giant dinosaurs, and everyone can read about that in VERNE.” Even painters like Jacques-Louis David were impressed, Schmidt claims, and he quotes David as saying “whoever wants to study nature must go to a panorama. And even in MARCEL PROUST you will still find the expression: ‘Venice in the panorama looked more beautiful than the original. It had more tones’.” He says that people haven’t noticed this pervasive influence because panoramas were “devoured” by those who weren’t “snobbish” and “completely overlooked” by scholars.

The significance of his discovery, then, is that Poe’s “grandiose inventions” aren’t just poetic fantasies. They “have their very real foundations.” He alludes to a critical line that is also developed in the novel: that “intuition in itself is a pathetic thing and yields so few works of art that it is really only one of the ‘conditions’ for works of art.” Poe was a fascinating but deeply problematic writer in Schmidt’s estimation, because he worked so hard on fantasy and invention, and so little on careful observation—but the panorama is a signal example of how authors who are susceptible to flights of fantasy can actually be dependent, without their conscious knowledge, on verifiable facts about their experience.

The whole of the romantic nineteenth century, and particularly the POE=Zeit, imagined itself to be freed from the constraints of patient, scientifically informed, meticulously researched attention to the real world, but it was actually demonstrably dependent on one of the period’s greatest popular inventions, which was itself nothing more than a projected fantasy.

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2 Reprints

Molly C. Briggs, Thorsten Logge, Nicholas C. Lowe

Introduction: La Nature à Coup d'Œil

Each volume of the *PIMS* Yearbook includes a “Reprints” section that presents historical articles, documents, other printed media and objects pertinent to the study of multi-modal immersive technologies and media. Subject to permissions, it features previously published, out-of-print and out-of-copyright materials significant to the production, reception and study of panoramas and related panoramic media. Contributions may also include unpublished manuscripts, and/or other archival materials, including illustrated presentations of objects, and optical devices. A short introductory essay accompanies and contextualizes the reprinted material. The range of material invited for this section is quite broad: from technical descriptions or patents to newspaper reports and first-person documents describing panorama visits or the production of panoramas. Here you can find difficult-to-access or forgotten material, thus making it better known and easier to use, and citable for scholars in the field. Key materials will thus be highlighted, remembered, re-discovered, discussed, and curated to create a growing inventory and foundation of key sources for the interdisciplinary field of panorama and immersive media research.

It may come as no surprise that the first volume of the *PIMS* Yearbook and this first offering of the reprints section offers Robert Barker’s *La Nature à Coup d'Œil*—the first and groundbreaking technical description and definition for what became famous as *panorama*. The combination of art and technique in Barker’s patent sharpens awareness for what a panorama always is: an immersive visual representation of something absent *as well as* a media-technical device and infrastructure, which pre-structures and influences the process of production just as much as the visitors’ viewing of a panorama. The reprint is introduced by Leen Engelen and Gabriele Koller.

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Leen Engelen, Gabriele Koller

Robert Barker's Panorama Patent of 1787—Art and Technique Combined

Abstract: In this first issue of the *Panoramic and Immersive Media Studies* Yearbook it seems appropriate to reprint the patent filed by Robert Barker for what later came to be known the Panorama. The patent dates from 1787 and was published in *The Repertory of Arts and Manufactures* in London in 1796. In addition to this document, we add a preprint of the Royal Warrant issued by King George III of Great Britain and Ireland, giving instructions for the preparation of the Letters Patent granting Robert Barker exclusive use of his invention. This predates the original patent by a few months. Together the documents give insight on the original invention and on the patents process.

Keywords: Patent, Robert Barker, Royal warrant commanding preparation of letters patent, Panorama, *La Nature à Coup d'Œil*

In 1787, the Irish-born painter Robert Barker (1739–1806) took out a patent on the “Invention of an entire new Contrivance or Apparatus” intended “for the Purpose of displaying Views of Nature at large.” The text of the patent does not make use of the word “panorama” yet. The term was not coined until some time later, as referred to in a footnote to the patent which was published in 1796. In the patent, Barker chose an attractive French title, *La Nature à Coup d'Œil* (“nature at a glance”) for his invention thus emphasizing his intention to “. . . perfect an entire view of any country or situation, as it appears to an observer turning quite round . . .”

The patent's text is precise, but does not go into detail on all points. Information on how to take the view to be painted is rather vague: “. . . the painter or drawer must fix his station, and delineate correctly and connectedly every object which presents itself to his view as he turns round, concluding his drawing by a connection with where he begun.” On the execution of the painting information in the patent is rather short, too: “Oil-Painting, Fresco, Water-colours, Crayons, or any other Mode of painting and drawing” are allowed and the view can be executed “on canvas, or other materials.”

The focus of the patent, however, is not on the painting, but on the apparatus itself. Therefore, Barker's description is very detailed where it concerns the building, the installation of the painting, the way in which the painting is to be lit, and finally,

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Gabriele Koller, Jerusalem Panorama, Altötting, Germany

the visitor's position in relation to the painting. The text already contains all relevant details of a typical nineteenth-century panorama: A circular building, "lighted entirely from the top," with a platform in the center from where the painting is to be viewed and which at the same time creates a distance between the viewer and the canvas; the hiding of the upper and lower edge of the circular painting; and finally, an entrance to the building from below, "so that no door or other interruption may disturb the circle on which the view is to be represented."

When Barker was granted the patent, he had not erected a building for the purpose of exhibition yet, nor had he painted a panorama by that date. It is therefore all the more startling that the patent foretells the panorama rotunda that Barker built some years later in Leicester Square, London, in all its principles of display. With it, Barker set the standard for the display of panoramas throughout the nineteenth and the early twentieth centuries.

Section editors' note: Figs. 1–3 depict Robert Barker's patent specification, titled "XX. Specification of Mr. Barker's Patent for Displaying View of Nature at Large, by Oil-Painting, Fresco, Water-Colours, &c." *The Repertory of Arts and Manufactures: Consisting of Original Communications, Specifications of Patent Inventions, and Selections of Useful Practical Papers from the Transactions of the Philosophical Societies of all Nations, &c. &c.* 1796. Vol. IV. London: Nichols and Son, 165–167. Figs. 4–6 depict the Royal Warrant issued by King George III of Great Britain and Ireland, dated 5 June 1787, giving instructions for the preparation of letters patent granting Robert Barker exclusive use of his invention of *La Nature à Coup d'Œil*. It precedes the actual patent that was granted on 19 June 1787. A transcription of the royal warrant follows Figs. 4–6.

1 Letters Patent for Robert Barker's *La Nature à Coup d'Œil*

This document was issued at St. James's in London; it comprises ink on paper and includes two sheets. The first sheet carries the main text, bi-folded to form four pages. The second sheet is the enclosure. The text begins with the signature of George III at the top on the left, and is followed on the third page, bottom right, with the signature of Thomas Thownshend, 1st Viscount Sydney (1733–1800). The text below, a transliteration of the historical handwritten document (Figs. 4–6), was prepared by PIMS editors Leen Engelen, Gabriele Koller, Nicholas C. Lowe, and Melissa Wolfe. Line breaks reflect those that appear in the original document. The scans were obtained from the Edinburgh University Library (coll-1682).

(165)

XX. Specification of the Patent granted to Mr. ROBERT BARKER, of the City of Edinburgh, Portrait-Painter; for his Invention of an entire new Contrivance or Apparatus, called by him *La Nature à Coup d'Œil* *, for the Purpose of displaying Views of Nature at large, by Oil-Painting, Fresco, Water-colours, Crayons, or any other Mode of painting or drawing.

Dated June 19, 1787.

TO all to whom these presents shall come, &c. NOW KNOW YE, that by my invention, called *La nature à coup d'œil*, is intended, by drawing and painting, and a proper disposition of the whole, to perfect an entire view of any country or situation, as it appears to an observer turning quite round; to produce which effect, the painter or drawer must fix his station, and delineate correctly and connectedly every object which presents itself to his view as he turns round, concluding his drawing by a con-

* This invention has been since called the *Panorama*.

Fig. 1: "Specification of the Patent," page 165. Image, the British Library.

166 *Patent for displaying Views of Nature*

nection with where he began. He must observe the lights and shadows, how they fall, and perfect his piece to the best of his abilities. There must be a circular building or framing erected, on which this drawing or painting may be performed; or the same may be done on canvas, or other materials, and fixed or suspended on the same building or framing, to answer the purpose complete. It must be lighted entirely from the top, either by a glazed dome or otherwise, as the artist may think proper. There must be an inclosure within the said circular building or framing, which shall prevent an observer going too near the drawing or painting, so as it may, from all parts it can be viewed, have its proper effect. This inclosure may represent a room, or platform, or any other situation, and may be any form thought most convenient, but the circular form is particularly recommended. Of whatever extent this inside inclosure may be, there must be over it, (supported from the bottom, or suspended from the top,) a shade or roof; which, in all directions, should project so far beyond this inclosure, as to prevent an observer seeing above the drawing

Fig. 2: "Specification of the Patent," 1796, page 166. Image, the British Library.

by Oil Painting, Fresco, &c. 167

drawing or painting, when looking up; and there must be without this inclosure another interception, to represent a wall, paling, or other interception, as the natural objects represented, or fancy, may direct, so as effectually to prevent the observer from seeing below the bottom of the drawing or painting, by means of which interception nothing can be seen on the outer circle, but the drawing or painting intended to represent nature. The entrance to the inner inclosure must be from below, a proper building or framing being erected for that purpose, so that no door or other interruption may disturb the circle on which the view is to be represented. And there should be, below the painting or drawing, proper ventilators fixed, so as to render a current circulation of air through the whole; and the inner inclosure may be elevated, at the will of an artist, so as to make observers, on whatever situation he may wish they should imagine themselves, feel as if really on the very spot. In witness whereof, &c.

XXI.

Fig. 3: Barker Specification, page 167. Image, the British Library.

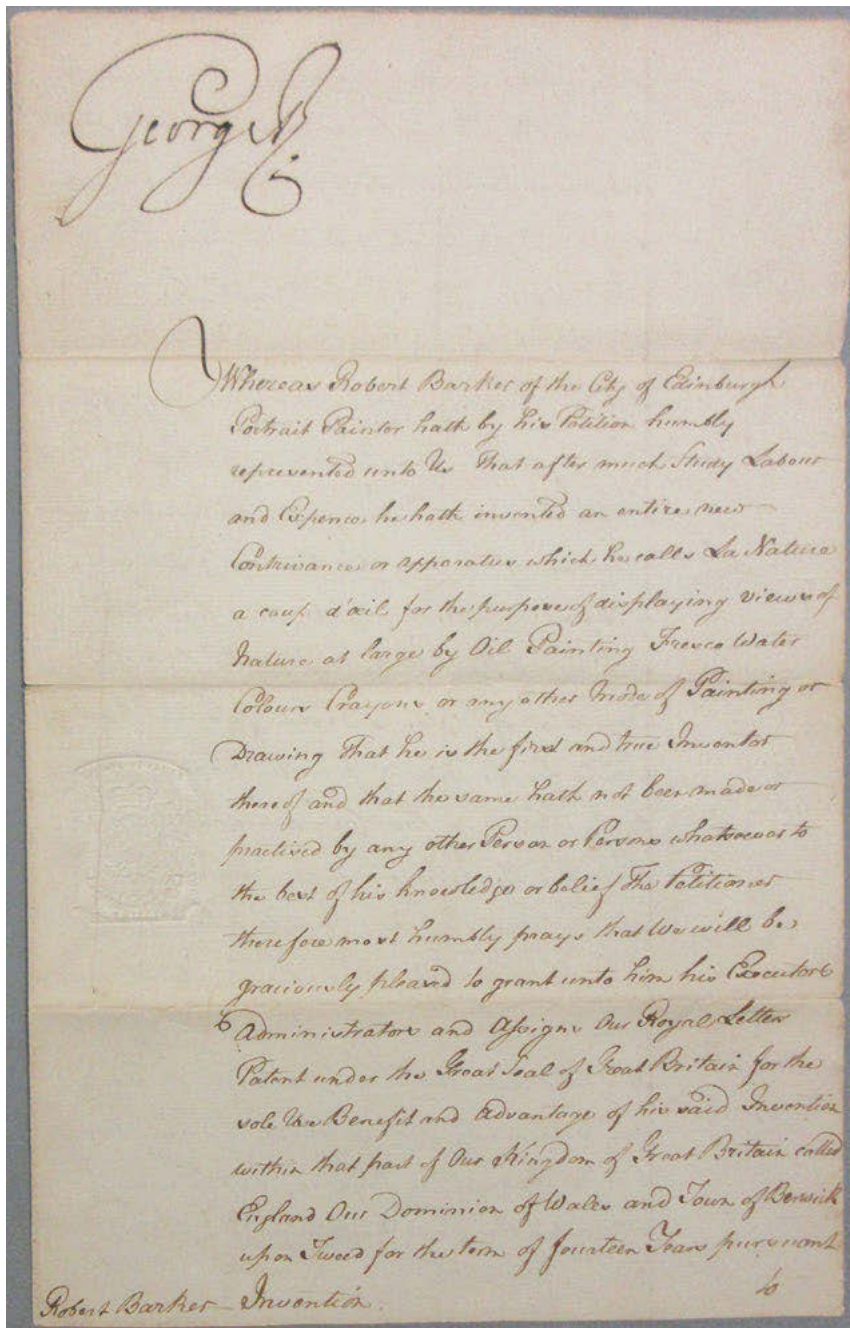


Fig. 4: Eighteenth-century royal warrant commanding the preparation of Letters Patent granting Robert Barker use for fourteen years of his invention *La Nature à Coup d'Œil*. . for displaying views of nature. . by oil painting, or "panorama." Image, Edinburgh University Library, Coll-1682.

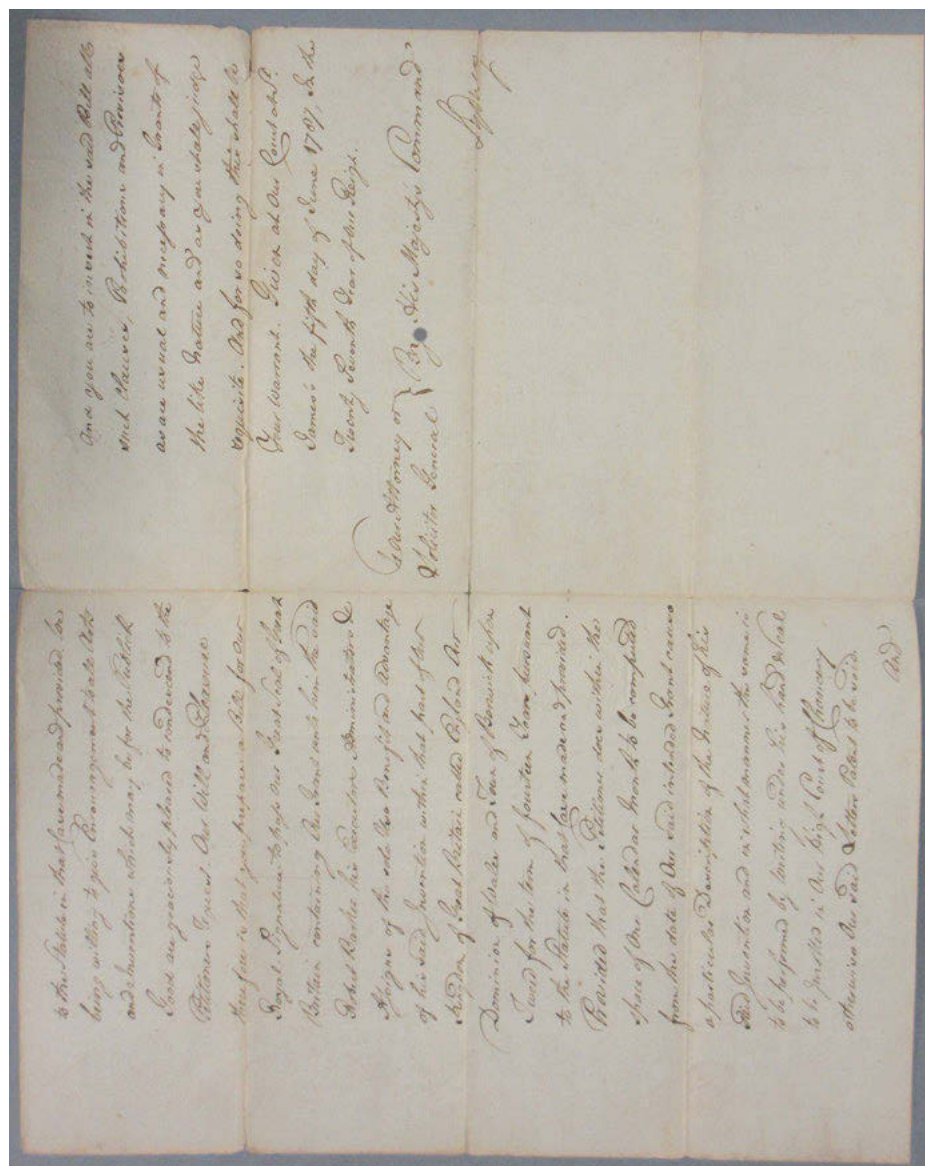


Fig. 5: Eighteenth-century royal warrant commanding the preparation of Letters Patent granting Robert Barker use for fourteen years of his invention *La Nature à Coup d'Œil*. . for displaying views of nature. . by oil painting, or "panorama." Image, Edinburgh University Library, Coll-1682.

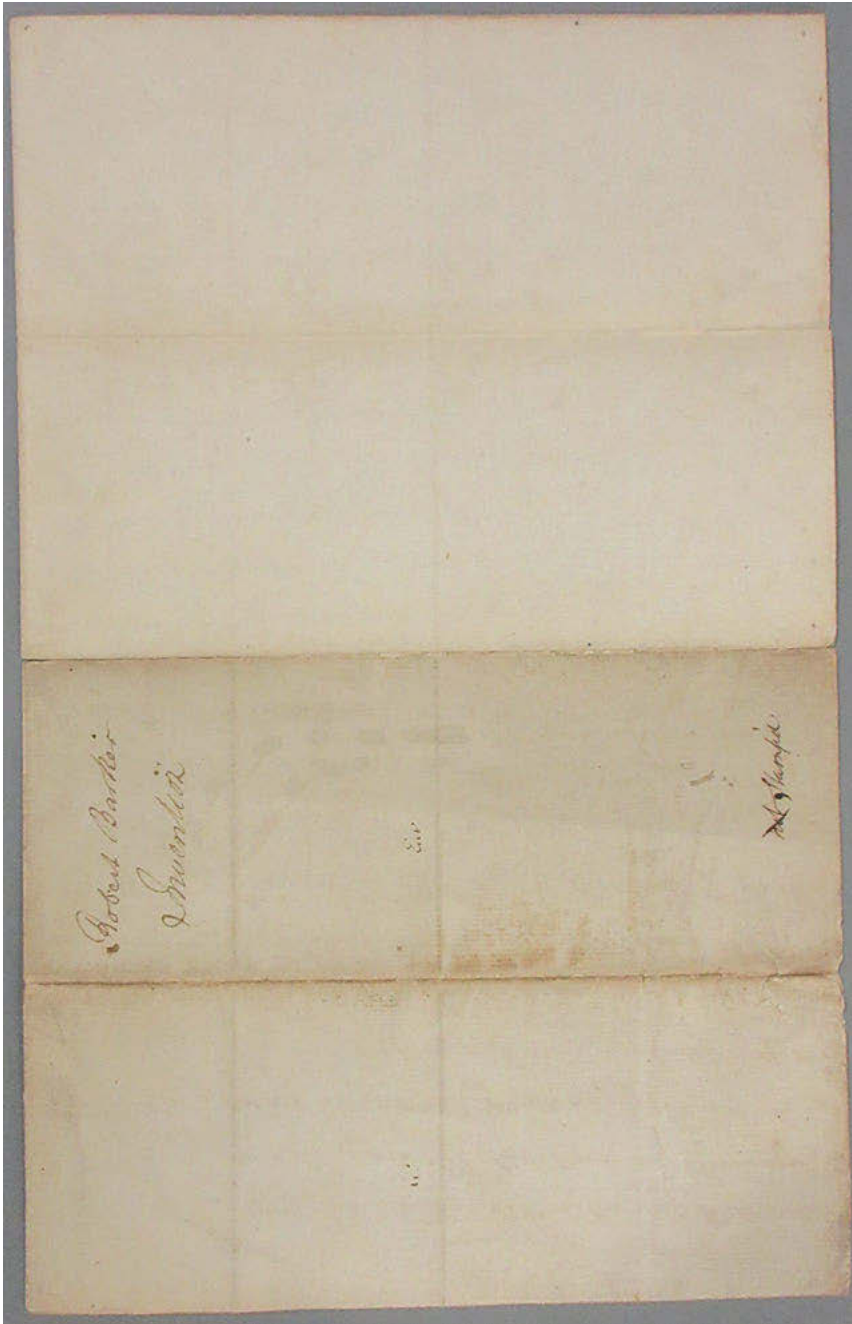


Fig. 6: Eighteenth-century royal warrant commanding the preparation of Letters Patent granting Robert Barker use for fourteen years of his invention *La Nature à Coup d'Œil*. . .for displaying views of nature. . .by oil painting, or "panorama." Image, Edinburgh University Library, Coll-1682.

George III

Whereas Robert Barker of the City of Edinburgh
 Portrait Painter hath by his Petition humbly
 represented unto Us that after much Study Labour
 and Expense he hath invented an entire new
 Contrivance or apparatus which he calls La Nature
 a coup d'œil for the purpose of displaying views of
 Nature at large by Oil Painting Fresco Water
 Colours Crayons or any other Mode of Painting or
 Drawing that he is the first and true Inventor
 thereof and that the same hath not been made or
 practised by any other Person or Persons whatsoever
 to the best of his knowledge or belief The Petitioner
 therefore most humbly prays that we will be
 graciously pleased to grant unto him his Executors
 Administrators and assigns Our Royal Letter
 Patent under the Great Seal of Great Britain for the
 sole Use Benefit and Advantage of his said invention
 within that part of Our Kingdom of Great Britain called
 England Our Dominion of Wales and Town of Berwick
 upon Tweed for the term of fourteen Years pursuant

Robert Barker Inventor

to

to the Statute in that Case made and provided for
 being willing to give Encouragement to all Arts
 and Inventions which may be for the Publick
 Good are graciously pleased to condescend to the
 Petitioners Request. Our Will and Pleasure
 therefore is that you prepare a Bill for our
 Royal Signature to pass our Great Seal of Great
 Britain containing Our Grant unto him the said
 Robert Barker his Executors Administrators &
 assigns of the sole Use Benefit and Advantage
 of his said invention within that part of Our
 Kingdom of Great Britain called England Our
 Dominion of Wales and Town of Berwick upon
 Tweed for the term of fourteen Years pursuant
 to the Statute in that Case made and provided.
 Provided that the Petitioner does within the
 space of One Calendar Month to be computed
 from the date of Our said intended Grant causes
 a particular Description of the Nature of his

said Invention and in what manner the same is
to be performed by writing under his hand & Seal
to be enrolled in Our High Court of Chancery
otherwise Our said Letter Patent to be void.

and

and you are to invest in the said Bill all
such Clauses, Prohibitions and Provisoos
as are usual and necessary in Grants of
the like Nature and as you shall judge
requisite. And for doing this shall be
Your warrant. Given at Our Court at St.
James's the fifth day of June 1787,
and the Twenty Seventh Year of Our Reign.

To our Attorney or

Solicitor General

By His Majesty's Command

Sydney

3 Restoration, Management, and Field Reports

Patrick Deicher, Gabriele Koller

Introduction: Conservation and Restoration of Late Nineteenth-Century Panoramas—The Role of the *Faux Terrain*

With the revival of the panorama—or cyclorama, as it was then called in the United States—in the late nineteenth century, the *faux terrain* became an integral element of panoramas enhancing the illusion of being “in the picture.” With its three-dimensional stage-like scenery placed between the viewing platform and the circular canvas, the *faux terrain* extends the spatial perception of the depicted scene leading the viewer right into it.

In their time, panoramas went on tour. The huge canvases were transported from one exhibition venue to the next where they were set up anew. The *faux terrain*, however, did not travel with the canvas and had to be redesigned for each new exhibition. As a result, original *faux terrains* rarely survive. This may be one reason why the *faux terrain* has not received much attention in panorama research so far.

The two articles in this section deal with the neglected role of the panorama’s *faux terrain*. Since its creation in 1886, the Battle of Atlanta panorama, now part of the Atlanta History Center, Atlanta, Georgia, USA, has changed its exhibition venue several times, and its *faux terrain* accordingly. Gordon Jones traces the different stages of the panorama’s *faux terrain* since its first exhibition in 1886, unveiling the multiple changes made since then. Knowledge of all these changes played an important role in the panorama’s most recent restoration campaign.

Unlike the Battle of Atlanta, the Jerusalem panorama located in the Marian pilgrimage of Altötting, Germany, has not traveled. It is still in its original exhibition rotunda where it was painted in 1903 and which it has never left. Apart from some minor repairs its original *faux terrain* is completely unchanged—an extremely rare situation for surviving panoramas. In his article, Ulrich Weilhammer describes the specific challenges that restorers face when a panorama with an untouched original *faux terrain* is preserved.

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Gordon L. Jones

The Nine Lives of *The Battle of Atlanta's Faux Terrain*, 1886–2019

Abstract: Panorama paintings of the nineteenth century relied on a three-dimensional *faux terrain* (or “diorama”) in the foreground to achieve the proper illusion of depth. Between 2014 and 2019, the Atlanta History Center in Atlanta, Georgia, relocated and restored the 360-degree panorama painting *The Battle of Atlanta*. Since completion in 1886, there have been eight versions of a *faux terrain* between five different buildings. The History Center constructed a ninth *faux terrain* in its new building to help recover the originally intended illusion. This effort faced a number of practical problems, including overcoming unintended consequences of previous restorations, incorporating 128 plaster soldier figures added in the 1930s, and matching these figures to a painting surface restored to its larger original circumference.

Keywords: Panorama, cyclorama, *faux terrain*, illusion, Battle of Atlanta, Weis Snell, Victor Llorens, Wilbur Kurtz, Grant Park, Atlanta History Center

1 Introduction

Between 2014 and 2019, the Atlanta History Center in Atlanta, Georgia, undertook a \$35 million effort to relocate and restore *The Battle of Atlanta*, a 360-degree panorama painting often known in the United States as a “cyclorama.” Funding for the project was from private sources and included a \$10 million endowment for ongoing maintenance and future conservation.

The Battle of Atlanta was completed in 1886 by the American Panorama Company of Milwaukee, Wisconsin, to dramatize the Union victory two miles east of Atlanta on July 22, 1864, during the American Civil War. Friedrich W. Heine, August Lohr, and Theodore Davis sketched the Atlanta battlefield landscape in the fall of 1885. Seventeen artists in the Milwaukee studio created the 5,538 square-meter painting between February and June 1886.

The Battle of Atlanta was exhibited in Minneapolis and Indianapolis before a southern promoter brought it to Chattanooga in 1891 and Atlanta in 1892. In Atlanta, it was exhibited in a “temporary” wooden building on Edgewood Avenue and in Grant Park before 1921, when it was moved into a new steel-and-brick structure, also in Grant Park. In 2017 a team headed by Weilhammer & Schoeller Art Conservation

Gordon L. Jones, Senior Military Historian and Curator, Atlanta History Center, Atlanta, Georgia, USA

moved the painting into the center's newly constructed Lloyd and Mary Ann Whitaker cyclorama building, which opened to the public in February 2019.

2 The Cyclorama's *Faux Terrain*

Panorama paintings of the nineteenth century relied on the construction of a three-dimensional *faux terrain* (or "diorama") in the foreground to achieve the proper illusion of depth. The *faux terrain* was the only essential element of a panorama painting that could not travel: made of real dirt and foliage, each *faux terrain* setting was unique to its venue. In recovering the forgotten history of *The Battle of Atlanta*, we counted eight previous versions of its *faux terrain* between five different buildings.

Our restoration of *The Battle of Atlanta* would create the ninth incarnation of the painting's *faux terrain*. The restoration was part of a larger effort to reclaim the illusion originally intended by the artists in 1886: a stationary central viewing platform at a height that aligned the viewer's eye with the horizon of the painting, a tunnel passage to the platform under the *faux terrain*, an overhead canopy blocking view of the top edge of the painting, and a *faux terrain* blending perfectly with the bottom edge of the painting.

However, there were practical limits on a pure 1886 interpretation. First, we needed a (conservation friendly) fiberglass surface instead of real dirt. Second, and most importantly, the existing *faux terrain* in Grant Park included a unique feature added in the 1930s: 128 hand-made plaster soldier figures (all but five depict Union soldiers), along with cannon, ammunition caissons, a wagon, and battlefield debris.

One of the plaster figures was a likeness of Clark Gable (who played the part of Rhett Butler in the 1939 classic *Gone With the Wind*) cast in jest as a dead Union or "Yankee" soldier. The 1930s plaster figures have been an inextricable part of the local history and lore of The Battle of Atlanta for the past 80 years. Leaving out Clark Gable would be leaving out the best part of the story: how a traveling show originally meant to depict a great Union victory inadvertently became a memorial to the Confederacy, a tribute to reconciliation of North and South, an icon of Atlanta tourism, and a valuable case study in how Americans remember (and mis-remember) their Civil War.

The Battle of Atlanta's Nine Faux Terrains

1. Minneapolis, 1886–1888
2. Indianapolis, 1888–1891
3. Chattanooga, 1891
4. Atlanta, wooden building on Edgewood Avenue, 1892–1893
5. Atlanta, wooden building in Grant Park, 1893–1921
6. Atlanta, steel-and-brick building in Grant Park, 1921–1934

7. Atlanta, steel-and-brick building in Grant Park, 1934–1979
8. Atlanta, steel-and-brick building in Grant Park, 1982–2015
9. Atlanta, Atlanta History Center, 2019–



Fig. 1: *The Battle of Atlanta's first faux terrain*, Minneapolis, June 29, 1886. Image, Atlanta History Center.

Looking east along the Georgia Railroad above the tunnel entrance, the fresh piles of earth and foliage in the left foreground suggest the brow of a hill overlooking the railroad cut. This “original” terrain was designed by the artists of the American Panorama Company, including lead painter Friedrich W. Heine and figure artist Hermann Michalowski. Their team was still finishing the work when the photographer made these images: note the shovel in the immediate foreground; in another image, there is an artist’s paint palette laying on the ground. There are no known photographs of the next three *faux terrain* incarnations in Indianapolis, Chattanooga, or the Edgewood Avenue building in Atlanta.



Fig. 2: *The Battle of Atlanta's* fifth *faux terrain* in its "temporary" wooden building in Grant Park, Atlanta, circa 1915. Image, Atlanta History Center.

As seen in this view looking west along the Georgia Railroad past the Troup Hurt House, there was little effort made to disguise the demarcation line between the two-dimensional painting and the three-dimensional terrain. The bottom edge of the painting was simply buried into the bare ground. Access from the tunnel entrance up to the viewing platform was via a sloping wooden bridge constructed over the *faux terrain*. The original panoramic illusion of the scene was gone. There are no known photographs of the sixth *faux terrain* as built in the "new" 1921 steel and brick building in Grant Park a few hundred meters from the old wooden building, but it probably resembled the terrain seen here.



Fig. 3: *The Battle of Atlanta's* seventh *faux terrain* under construction in its “permanent” steel and brick building in Grant Park, 1935. Image, Atlanta History Center.

With Depression-era funding from the Works Progress Administration, the City of Atlanta undertook a much-needed restoration of *The Battle of Atlanta*, accompanied by an entirely new *faux terrain*. Using the 1886 Minneapolis photographs as reference, historian and artist Wilbur G. Kurtz tried to recover the artists' originally intended illusion. He oversaw construction of a concrete-block corridor connecting the tunnel entrance to the viewing platform. The corridor would be covered by dirt to re-create the original 1886 hill feature looking east along the Georgia Railroad. Except for structural steel supporting the walls and viewing platform, there was no floor in the tunda of the 1921 building.



Fig. 4: Joseph V. Llorens at work on plaster soldier figures, 1935. Image, Atlanta History Center.

This out-of-focus photograph is one of only a handful showing Atlanta stained-glass artist Joseph V. Llorens at work on plaster soldier figures, 1935. Llorens conceived the idea of adding figures as a means of enhancing the three-dimensional illusion of the scene by disguising the demarcation line between the painting and *faux terrain*. Kurtz thought the figures enhanced the composition by filling the inexplicably empty space between the viewing platform and the painting. Sculptor Weis C. Snell (known locally for his outdoor garden gnomes) molded complete figures as well as interchangeable arms, hands, and torsos in a makeshift studio in the basement of the 1921 building. To achieve the proper illusion of depth and scale, the sculptors made figures in three different sizes: 18, 36, and 42 inches in height, depending on distance from the painting.



Fig. 5: *The Battle of Atlanta's seventh faux terrain* looking east along the Georgia Railroad above the tunnel entrance, circa 1970. Image, Atlanta History Center.

The brow of the hill as constructed in Minneapolis in 1886 has disappeared, but the demarcation line between painting and terrain is remarkably well-camouflaged, at least as seen in this black-and-white photograph. To achieve the proper effect, Kurtz gathered different-colored batches of earth and mixed them with various coloring agents; he also touched up the lower areas of the painting to match his new *faux terrain*. Note the group of six 18-inch figures designed specifically for placement between the 3-D road and the 2-D painting.



Fig. 6: Another view of the seventh *faux terrain*, this time looking west along the Georgia Railroad past the Troup Hurt House, circa 1970. Image, Atlanta History Center.

Weis Snell sculpted hundreds of wire-and-plaster leaves which were woven together to simulate foliage. Unlike the figures, much of this foliage would crack and deteriorate beyond use by the 1980s. Vertical ripples in the painting resulting from improper tension are clearly visible to the left of the house.



Fig. 7: Scale production model for *The Battle of Atlanta's* eighth *faux terrain*, 1981. Image, Atlanta History Center.

More than 45 years after Wilbur Kurtz's restoration, the panorama and its *faux terrain* were again in dire need of conservation. With no floor beneath it, groundwater seeped into the dirt terrain, allowing pests and mold to damage the bottom edge of the canvas. Between 1979 and 1982, the City of Atlanta undertook an \$11 million restoration of *The Battle of Atlanta* panorama headed by art conservator Gustav A. Berger. Renovation work in the 1921 Grant Park building included installation of a concrete foundation and replacement of the dirt *faux terrain* with molded fiberglass panels over a wooden latticework cut to varying heights. This eighth incarnation copied most of the topographic features initiated by Wilbur Kurtz in the 1930s as well as the approximate placement of the 128 Llorens-Snell plaster figures. Modelers from Joseph Hurt Studio near Atlanta created miniatures of each of the figures, cannons, and caissons so placement of the full-sized 1930s originals could be modified for better visual effect.

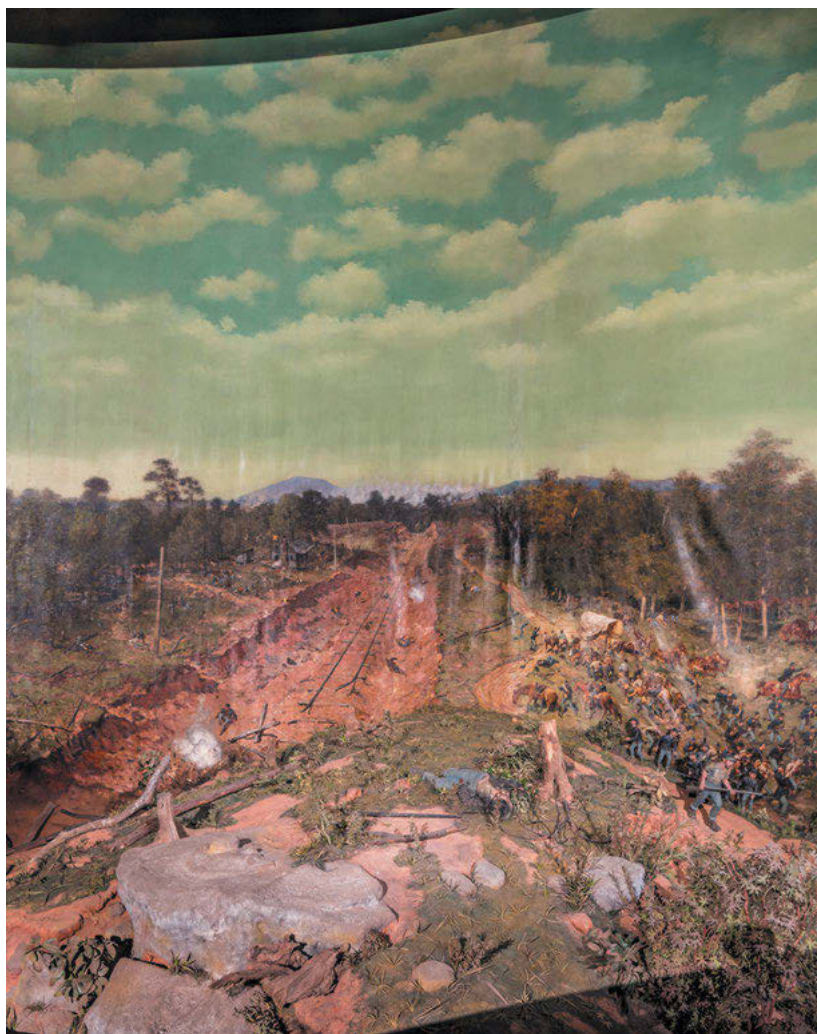


Fig. 8: *The Battle of Atlanta's* eighth *faux terrain* looking east along the Georgia Railroad, July 2015. Image, Atlanta History Center.

A key feature of the 1979–1982 restoration was the installation of a revolving viewing platform with tiered seating for upwards of 200 visitors during an hourly narrated sound and light show. Visitors accessed this revolving platform through a passageway from what had been the basement level below the rotunda. Hence, the tunnel entrance cut into the painting was rendered unnecessary, but for the sale of visual continuity the faux hill in the eastward view was retained. The revolving platform also meant that visitors could no longer view *The Battle of Atlanta* in its entirety at one time, again compromising the originally intended panoramic illusion.

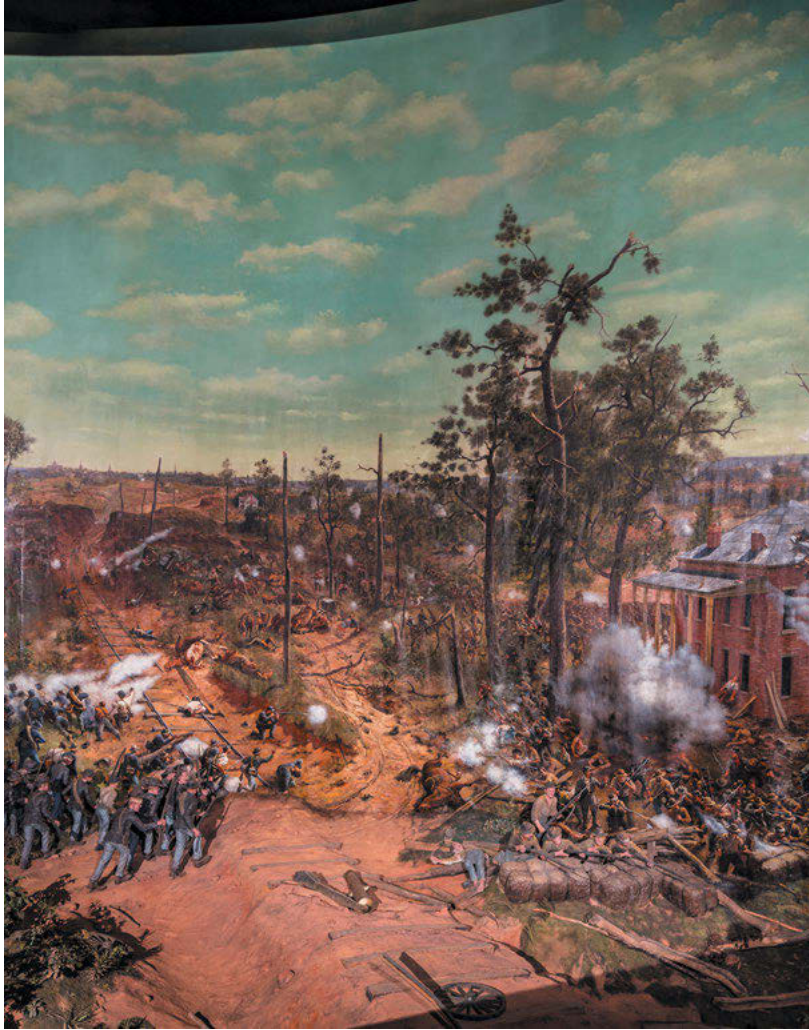


Fig. 9: Another view of the eighth *faux terrain*, this time looking west along the Georgia Railroad past the Troup Hurt House, July 2015. Image, Atlanta History Center.

The demarcation line between painting and fiberglass surface is partially obscured by the plaster figures. In the 1980s the Berger conservation team had secured the painting canvas from further tears by applying a fiberglass lining, but it was impossible to properly tension the canvas because the rotunda in the 1921 Grant Park building was fundamentally too small in circumference.



Fig. 10: A topographical survey team from Watts & Browning Engineers of Atlanta documents *The Battle of Atlanta's* eighth (1982) *faux terrain*, August 2015. Image, Atlanta History Center.

The revolving platform and limited access points in the small but incredibly sturdy 1921 Grant Park building meant that the 1982 fiberglass *faux terrain* could not be moved out of the building. Only the figures and props could be saved for a ninth terrain. Recovering the original intent of Kurtz, Llorens, and Snell in the 1930s and the Gustav Berger team in the 1980s depended on documenting the existing topography and placement of figures. The 2015 survey team produced a three-dimensional map with exact G.P.S. coordinates for each figure and topographical contours measured in six-inch increments.



Fig. 11: Removal of a 1930s plaster artillery ammunition caisson from the eighth *faux terrain*, September 2015. Image, Atlanta History Center.

The 1930s plaster props and figures are unique to *The Battle of Atlanta* and form an integral part of its history and popular lore. Atlanta History Center staff had stackable crates created especially for transporting and storing the figures until they were ready to be re-installed on the ninth terrain in our new building. Staff tagged, re-recorded, photographed, and removed nearly 350 individual items ranging from figures and cannons to plaster wagon wheels, hats, guns, and debris. Most of the artificial vegetation was too dusty and faded to be re-used.



Fig. 12: Two of the 1930s plaster soldier figures in their storage crates, September 2015. Image, Atlanta History Center.

Sculptor Weis Snell made these two figures from the same mold, but when placed in different positions in different parts of the *faux terrain*, viewers do not notice. To save weight and time, he only filled out the parts of the figures that would be visible from the platform, leaving the steel rebar frame on the reverse side exposed. One of the unforeseen consequences was that the figures suffered over the years from humidity which caused rebar to rust and plaster to flake off or crack apart.



Fig. 13: Removal of the 1982 fiberglass surface of *The Battle of Atlanta's* eighth *faux terrain*, November 2015. Image, Atlanta History Center.

Significant portions of the wooden laticework supporting the 1982 surface had rotted away as water continued to seep into the rotunda of the 1921 Grant Park building through a new but improperly sealed foundation. Additionally, the 1982 fiberglass surface was never designed or intended to support the weight of the scaffolding and lifts needed to access the painted surface of *The Battle of Atlanta* canvas. The old fiberglass terrain had to be removed to make room for the next step: preparing the canvas for scrolling and transportation to the Atlanta History Center.



Fig. 14: Artist Joseph Lazzari restores the 1930s plaster figures, 2018. Image, Atlanta History Center.

This was the first full restoration of all figures and props since they were completed in 1936. Some figures were missing fingers, hands, or had “dropped” their guns; many others had been hastily repaired with unsightly patches of epoxy resin. All had been re-painted or re-touched over the years with many different shades of paint. Lazzari replaced missing sections of plaster with modeling clays; virtually every item required repainting.



Fig. 15: *The Battle of Atlanta's* ninth *faux terrain* under construction in the newly constructed Lloyd and Mary Ann Whitaker cyclorama building at the Atlanta History Center, December 2018. Image, Atlanta History Center.

Using the 2015 digital survey of the eighth (1982) *faux terrain* as reference, Building Four Fabrication of Atlanta built the ninth terrain in molded fiberglass sections over an all-metal lattice work. The new *faux terrain* was vital in recovering not only the original intent of the artists (especially Kurtz, Llorens, and Snell in the 1930s), but also the original illusion of the 1886 panorama painting, including the use of the original tunnel entrance cut into the canvas. Most importantly, approximately 1,400 square feet had to be added to the new *faux terrain* in order to fit a canvas restored from its 1921 circumference of 358 feet to its original 1886 circumference of 371 feet.



Fig. 16: *The Battle of Atlanta's* ninth *faux terrain* under construction, January 2019. Image, Atlanta History Center.

In addition to the plaster figures, other props re-used from the eighth terrain included these light trolley car rails which stood in for the heavier tracks of the 1864 Georgia Railroad. It is likely that these rails date to the fifth terrain installed in 1893 (see Fig. 2), making them the oldest surviving element of the present *faux terrain*.



Fig. 17: Grouping of five figures depicting Confederate soldiers as restored in the ninth *faux terrain*, 2019. Image, Atlanta History Center.

These five are the only Confederate figures depicted in the *faux terrain*. They are shown using cotton bales as cover while defending the Troup Hurt House from the (soon-to-be) victorious Union counterattack. In 1935, Weis Snell modeled the face of the standing Confederate figure from that of 89-year-old Charles K. Henderson, an Atlanta veteran of the Georgia Militia who had befriended (or bemused) Snell during the restoration work. This is the only likeness of a Confederate soldier identified by name in any part of *The Battle of Atlanta* scene. Meanwhile, there are 27 Union officers identified by name in the painting itself, a reflection of the northern viewpoint inherent in its original composition.

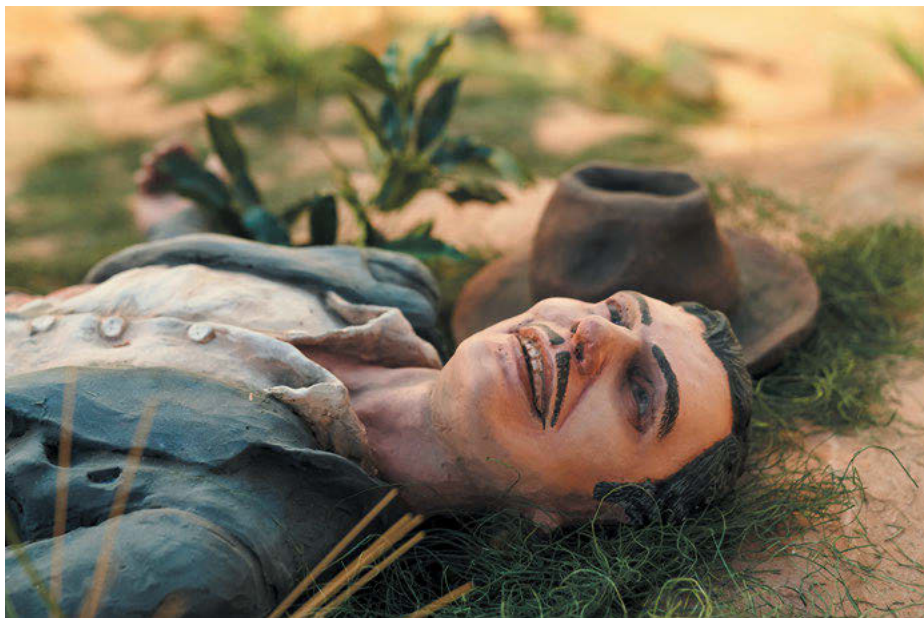


Fig. 18: Restored circa 1940 plaster figure in the likeness of actor Clark Gable in the ninth *faux terrain*, 2019. Image, Atlanta History Center.

The most famous of the 128 plaster figures was also the last one added. During his December 1939 visit to Atlanta for the premier of the movie *Gone With the Wind*, Gable supposedly claimed that the only thing wrong with *The Battle of Atlanta* was that he was not in it. Shortly thereafter, at the behest of Atlanta Mayor William Hartsfield, sculptor Weis Snell created a likeness of Gable's face and placed it on the body of a "dead" Union soldier. Hartsfield's "inside joke" became something of a local legend and today still a source of frequent visitor questions.



Fig. 19: *The Battle of Atlanta's ninth faux terrain* looking east along the Georgia Railroad above the tunnel entrance, 2019. Image, Atlanta History Center.

One of the lessons learned in the Atlanta History Center's move and restoration was the cascading visual impact of even the smallest adjustments to the painting. For example, compare the horizontal distance in the painting between the Georgia Railroad and the tree line to its right as seen in this image and image 5. The shorter distance in image 5 is due to a 22-inch-wide vertical strip of canvas excised in 1921. This crude modification allowed the painting to fit into the newly completed Grant Park building when it was discovered to be too small for the painting. When Weilhammer & Schoeller restored this missing 22-inch-wide section to the canvas, it widened the tunnel entrance beneath it, which in turn meant widening the profile of the faux hill meant to cover the tunnel. Additionally, the tunnel had to be widened slightly to meet current fire safety and visitor access protocol. Hence, in the ninth *faux terrain*, the road disappears under the right brow of the hill and then re-emerges into view to the right of the hill. This adjustment necessitated shifting the smallest group of six 18-inch-high plaster figures off the top of the hill (as seen in image 5) and onto the road, the only place in the *faux terrain* suitable to their small scale. Although we were able to retain the figures, they now appear slightly out of proportion.



Fig. 20: Another view of the ninth *faux terrain*, this time looking west along the Georgia Railroad past the Troup Hurt House, 2019. Image, Atlanta History Center.

The hill in the immediate foreground (visible as a dark area just left of the wooden railroad ties) was never part of any previous *faux terrain*; it exists solely to provide clearance for a required fire-escape exit immediately below the viewing platform. All told, the cost of constructing the ninth *faux terrain* was relatively modest compared to the cost of moving and restoring the painting: approximately \$650,000 for the fiber-glass surface and another \$150,000 for moving, crating, and restoring the figures and props.

Author Biography

Gordon L. Jones is the Senior Military Historian and Curator at the Atlanta History Center, in Atlanta, Georgia, where he has worked since 1991. He is responsible for one of the largest collections of Civil War artifacts in the United States. From 2014 through 2019, he oversaw the research, conservation, re-interpretation, and exhibition of the 1886 cyclorama painting, *The Battle of Atlanta*. Gordon holds a Ph.D. from the Graduate Institute of the Liberal Arts at Emory University, specializing in the Civil War in popular culture.

Ulrich Weilhammer

The Panorama *Jerusalem and the Crucifixion of Christ* in Altötting, Germany

Abstract: The panorama *Jerusalem and the Crucifixion of Christ* in Altötting is the last remaining historical panorama in Germany and one of the very few that are in almost original condition. Since it was opened in 1903, care has been taken to maintain and conserve both the panorama building, the painting and the *faux terrain* in their original state—even after a devastating water damage in 2001. Despite the progressing deterioration of the painting materials and the three-dimensional landscape, treatments are kept to a minimum—as long as the Altötting Panorama is not in danger.

Keywords: Altötting, panorama, Gebhard Fugel, *faux terrain*, conservation, restoration

1 The Painting's CV

After its opening in 1903, no restoration of the painting is reported until the early 1940s. At that time, the originally unvarnished painting was varnished by a local painter. Several areas, including the main scene around the Crucifixion, were varnished in several layers to get a shinier and brighter surface around the main scenes and the persons involved. The differences in the application, thickness and surface of the varnish-layers are still visible today. Until the 1980s, no further treatments are reported on the painting or the *faux terrain* (Fig. 1).

Between 1984 and 1989, the Bavarian State Office for National Monuments led a campaign to repair the rotunda, its roof and façade. In these years, a group of conservators also carried out conservation treatments on the painting. Its surface was cleaned, flaking paint was consolidated and several areas of lost paint needed inpainting and retouching (Horn et al. 1990, 62–72). As the *faux terrain* of the Altötting panorama was still in its original condition from 1903, only minor works were carried out like dusting and the installation of supporting wooden beams and pillars underneath the structure.

At that time also, the windows in the skylights received a new transparent and clear cast glass with enclosed wires, as many panes were broken and leaking. Plans to install an original indirect illumination using matte “milky” glass were given up due to technical and financial reasons. As this newly installed glass was fully transparent and allowed sunlight to shine directly onto the painting's surface, additional textile sun reflectors (or sunshades) were hung exactly underneath the skylights to disperse the direct light.

Ulrich Weilhammer, Weilhammer-Conservation, Gangkofen, Germany



Fig. 1: Original crate and painting materials from 1903 still shown underneath the visitors' platform. Image, the author.

2 The Water Damage, December 2001

Around Christmas 2001, a water pipe next to the entrance, right under the main scene of the Crucifixion, burst due to the formation of ice. As there is no insulation at all in or around the panorama rotunda (5" brick walls!), temperatures indoors and outdoors were about the same. At indoor temperatures of around -8 to -10°C , about 20–30,000 liters of water sprayed over the painting's surface. Also, the temperature of the painting's surface was well below 0°C , so the water formed a thin layer of ice on the varnish, covering an area of about 70 m^2 all around the main scene of the Crucifixion. When the temperature was rising again, melting water was running down the painting in thin "rivers." As a result, the varnish became dull (Fig. 2).

But not only the varnish was damaged by the huge amount of water: high relative humidity and also liquid water led to a contraction of the canvas. With this contrac-



Fig. 2: Detail of the main scene including the *faux terrain* in the foreground. Image, the author.

tion, the textile support shrinks, but the 100-year-old dried paint layer is not flexible enough to accommodate this movement. As a result, the paint layer became brittle, lost its adhesion to the support and partially flaked off. This phenomenon was seen on almost 30 m² of the painted surface around the main scene. In the areas where the canvas was attached to the *faux terrain* at the bottom of the painting, the painting showed deformations due to its stress-strain behavior.

3 Restoration of the Water Damage, 2002

First examinations and reports on the water damage were done from January to March 2002. These included a condition report on the painting and the *faux terrain*, tests of adhesives and consolidants and a treatment proposal for the painting.

From June to September 2002, the Schoeller Conservation Studio, together with Ulrich Weilhammer, carried out the conservation and restoration of the painting. The blanching of the varnish was treated with Ethanol, known as the Pettenkofer method: gaseous Ethanol was applied on the surface using a variety of fine nozzles. With this method, all opaque areas of the varnish became transparent again. All flaking paint

layers were consolidated. After filling the losses in the paint layer with gilder's gesso, in-paintings were done using watercolor and a thin layer of pigments bound in a natural resin medium.

During summer 2004, several works were carried out to improve the rotunda's statics, the skylights, the *faux terrain* and the painting's accessibility for future conservation treatments. The Altötting panorama does not use artificial light; all illumination comes from the skylights in the roof structure. Due to technical and financial reasons, fully transparent and clear cast glass with enclosed wires was installed in the 1980s. As this glass is fully transparent and allows direct sunlight on the painting's surface, additional textile sun reflectors, or sunshades were hung exactly underneath the skylights to disperse the direct light. After several years, this illumination became quite unsatisfactory: high transmission rates of UV light led to an accelerated deterioration of the fabric and to its failure. Year by year, more and more of these textile-sheets deteriorated and fell on the *faux terrain*. With missing textile shades, sunlight was allowed to shine directly on the painting's surface. Also the glass itself showed severe damage: several panes were broken or showed cracks due to tensions in the glass, caused by the distortion of the roof in strong winds. In that case, the whole roof construction moves slightly and causes tensions in the skylights.

By the year 2001, plans were carried out to replace the cast glass with a suitable semi-transparent matte glass and to remove the remains of the deteriorated textile sunshades. Fragments of old broken glass were found all over the original *faux terrain*. All in all, at least four different types of glass could be distinguished among hundreds of pieces. Unfortunately, it is not known which of these four types of glass was used for the skylights when the panorama was opened in 1903. Early in 2004, scientific tests were carried out to get information on the optical qualities of the old glass fragments in comparison to the transparent cast glass installed in the late 1980s. The analysis showed that the rates of dispersion, transmission, and also the color of the clear cast glass completely mismatched the properties of the historic sample and therefore were non suitable for the use in skylights illuminating a panorama painting. According to the results of the glass' analysis, a slightly greenish-white, two-layered security glass with a thin white film was chosen to replace the transparent cast glass and was installed in September 2004.

With the new illumination, painting and *faux terrain* shifted apart: due to the better dispersion of the matte glass, the *faux terrain* did appear brighter than the painting and created a gap between the three-dimensional landscape and the two-dimensional painting. Here, the cleaning of the *faux terrain* was crucial to reduce the contrast between the 3D-scenery and the painting. The fragile *faux terrain*, heavily covered with bright dust accumulated for many years, had to be cleaned. The accessibility of the landscape's surface was a problem: as the structure of the *faux terrain* is built with simple wooden slats (often with the bark still on!), canvas and plaster, its surface is fragile and cannot be entered in most areas (Fig. 3).



Fig. 3: Substructure of the *faux terrain* built with simple wooden slats, canvas and plaster. Image, the author.

Therefore, a temporary structure had to be installed right above the *faux terrain*: in order to provide a better accessibility to both the canvas and the *faux terrain*, a circular metal ring above the upper end of the painting was installed. This ring is used as the track for a working-platform (standard aluminum scaffolding) that is suspended vertically to provide an easy access to all areas of the painting for future maintenance and treatment. Access is provided by a horizontal “bridge” that connects the visitors’ platform with the suspended scaffolding (Figs. 4, 5). Before that, complicated scaffoldings had to be constructed to provide access to the painting without touching the original *faux terrain*. With its better accessibility, the *faux terrain* was cleaned and adjusted to the paintings’ colors using pigments (no binding-media!) along the interface between the canvas and the edge of the *faux terrain*. Since then (2005), the working platform and the bridge are stored underneath the visitors’ platform and can easily be installed in a day’s work if needed.



Fig. 4: Suspending light-weight scaffolding. Image, the author.

4 Current Situation

During the almost 20 years since its last restoration, both the painting and the *faux terrain* were being checked by a conservator and maintained on an annual basis: several data-loggers were installed to record temperatures and relative humidity levels at several locations of the building and painting. All data is evaluated along with an annual condition report on the painting and the *faux terrain*.

Slowly but surely, the condition of the Altötting panorama is deteriorating: brick weights that provide suspension at the bottom ring of the canvas have fallen off; due to changes of the humidity levels, the canvas contracts and expands, causing scratches on the painted surface where the *faux terrain* touches the canvas (Fig. 6). Also, dust accumulates on both the upper part of the painting and the *faux terrain*. Again, it appears brighter than the painting and creates a visual gap between the three-dimensional landscape and the two-dimensional painting (Fig. 7). With the accumulation of dust, also the



Fig. 5: Suspending light-weight scaffolding; mounting ring at the top. Image, the author.



Fig. 6: Detail of the painting's bottom edge with scratches around the *faux terrain* due to the contraction/expansion of the canvas with changing humidity levels. Image, the author.

single pieces of canvas become more visible: the surface of the vertical seams is smoother than the painting itself, resulting in less dust accumulation and a different gloss along the seams.

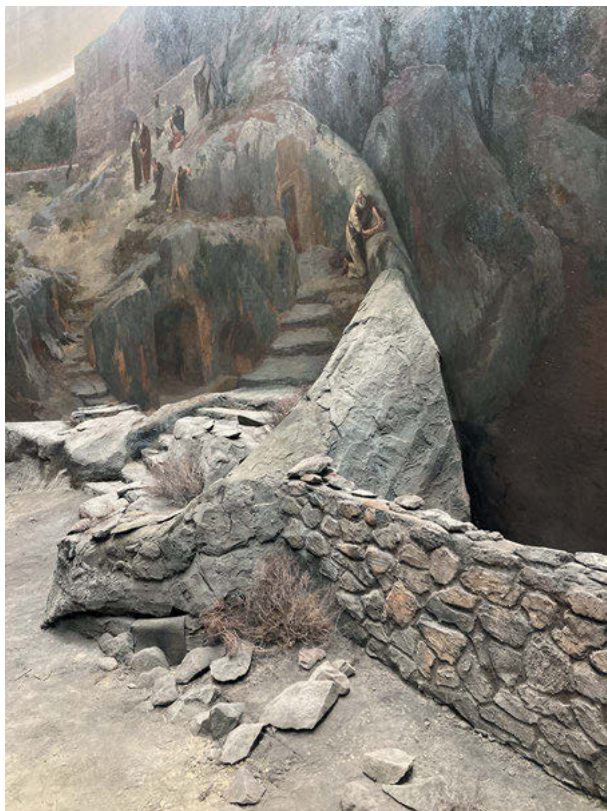


Fig. 7: Detail of the interface 3D-*faux terrain* / 2D painting with its visual gap due to accumulated dust on the scenery. Image, the author.

A closer examination of the *faux terrain* revealed cuts, tears and brittle layers of plaster. Also, water stains became visible: during summer 2023, heavy rain caused some water damages on the floor, the *faux terrain* and on parts of the velum above the visitors' platform. Several sheets of the tin roof show cracks and small holes due to hailstorms during 2022 and 2023; during heavy storms, rain finds its way along the inner wooden roof structure and drips onto the *faux terrain*'s surface and the floor.

5 Conclusion

The panorama *Jerusalem and the Crucifixion of Christ* in Altötting is the last existing historical panorama in Germany and one of the very few panoramas that are in almost original condition. Since the panorama was opened in 1903, care has been taken to maintain and conserve both the panorama building, the painting, and the *faux terrain* in their orig-

inal state. Slowly, the canvas, the painting materials and the three-dimensional landscape are deteriorating. But before any treatment is done, all changes or damages of the Gesamtkunstwerk are being observed, recorded and documented. Often, some missing weights, dust on the painting or varying humidity levels are not a big issue and do not need immediate intervention—as long as the Altötting panorama is not in danger!

Author Biography

Ulrich Weilhammer studied History of Art in Munich/Germany and Conservation of Easel Paintings and Polychrome Wooden Objects in Berne/Switzerland where he earned his Diploma in 2001. He has been working on numerous conservation projects in Europe, Asia and the Americas. From 2004 until 2007, Ulrich was Assistant Professor and Head of the Department of Polychrome Wooden Objects and Easel Paintings at the Conservation Center of the Tainan National University of the Arts in Taiwan, R.O.C. and gave lectures at the Shanghai Institute of Visual Arts at Fudan University in Shanghai/China and the Conservation Department of the University of Applied Sciences in Berne/Switzerland. Since 2007, he is running his own studio for Conservation and Restoration of Fine Arts with projects in Germany, Austria, Asia and the US. In 2015, he established Weilhammer & Schoeller Art Conservation, L.P. in Atlanta/Georgia together with Thomas Schoeller. Until mid-2018, he led their international team of conservators on the relocation, conservation and restoration of the Atlanta Cyclorama.

Ulrich Weilhammer was involved in the conservation of the following Panorama/Cyclorama Paintings and published several articles on this topic: *The Murten Panorama*, Murten/Switzerland (2001–2002); *The Panorama of Jerusalem and the Crucifixion of Christ*, Altötting/Germany (2002, 2004 and 2016); *The Bourbaki Panorama*, Lucerne/Switzerland (2003); the Gettysburg Cyclorama, Gettysburg/USA (2005); the Atlanta Cyclorama, Atlanta/USA (2014–2018).

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4 Visual and Creative Essays

Thiago Leitão de Souza, Nicholas C. Lowe

Introduction: Landscape, Memory and Place

This section invites personal and creative responses to experiences of making and engaging with panoramic and immersive media. Visual essays, creative writing, explorations of material research and other reflections on making. Below are two essays that in many ways mirror each other. Both explore memory in relation to contemporary encounters with space and landscape, explored through an artifact that endures very much in the present. Charles Hood navigates from personal memory into a discovery of evident histories. Worlds intersect as he describes a monumental cyclorama painting by Jan Styka (Polish, 1858–1925) that depicts Jerusalem, which is now situated in the contemporary landscape of a memorial park in Los Angeles. The essay by Chiara Masiero Sgrinzatto offers a view into her working process, in a visual re-discovery of memory in place. She demonstrates the experiential value of a present day virtual encounter with historical events in the placement of photographs from 1944 of the Tuskegee Airmen, back into their historical place of origin, in the landscape close to Naples, Italy. Both contributions explore how memory and panoramic media frequently encircle each other.

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Charles Hood

The Very, Very Lucky Bad Luck of Jan Styka

Abstract: A personal essay that reviews Jan Styka's *Crucifixion* panorama (1894–1897) and its current display venue at Forest Lawn Memorial Park, Glendale, California. The analysis of the painting includes an extended meditation on the role that luck plays in the survival of any given artwork.

Keywords: Forest Lawn Memorial Park, Jan Styka, *Crucifixion* panorama, painting

Polish panorama artist Jan Styka was a crackerjack painter. Things he was terrific at? Camels and donkeys for one, and animals more generally. In his immense *Golgotha*, 1896, the white horse of Longinus all but neighs aloud with impatience (Fig. 7). And for human figures, Styka was brilliant there too, and good thing he was, since this one painting contains over a thousand people. Now titled *Crucifixion* and installed in the Hall of Crucifixion–Resurrection, Forest Lawn Memorial Park, Glendale, California, Styka's painting stretches 195 feet wide and rises 45 feet tall, taking up 10,000 square feet of Belgian linen.

Big subjects need big canvases. They also need big buckets of luck. While there was a fad for crucifixion panoramas in Europe and North America at the end of the nineteenth century, most canvases have since disappeared—but not this one, and this one exists on a grander scale than any other painting you are likely to encounter in real life. Before Sphere opened in Las Vegas, this painting's previous comparison was to the Gallery of Battles, Versailles, or a Goodyear blimp. If those references didn't click, then tour guides explained that it is larger than multiple Imax screens stacked side by side. In traditional Renaissance style, it was painted by one man—or rather, one man and three or four assistants—and it now lives at Forest Lawn, free for anybody to visit. One is reminded of the inscription in “Ozymandias”: “Look on my Works, ye Mighty, and despair!”

Forest Lawn Glendale consists of 300 acres of well-landscaped, conventionally curated parkland, first started in 1906 but primarily sculpted and landscaped in the 1920s. Fancy gates and an entry pond mark the transition from the quotidian to the eternal. Initially there were swans, too. Those are gone, replaced by wildlife warnings (Figs. 1 & 2).

By design, most grave markers are flush with grade level, since headstones look untidy over time and are hard to mow around. (The right to raise a large monument only comes with the purchase of multiple adjacent plots.) The philosophy behind

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Fig. 1: Entrance fountain, Forest Lawn Memorial Park, Glendale. Image, the author.



Fig. 2: Wildlife warning signs are located around the grounds, though in daytime the only visible animals are squirrels, crows, and scrub jays. Image, the author.

this—besides beauty being good for business—is that Heaven will be peaceful and lovely, so our post-death, pre-Heaven waiting rooms should be lovely too.

Forest Lawn famously is the final home of famous people, including L. Frank Baum (*Wizard of Oz*), Elizabeth Taylor and Clark Gable, and even died-under-a-cloud William Mulholland (builder of the Los Angeles Aqueduct). It is home as well to the gold-lined coffin of Michael Jackson. Walt and Lillian Disney are interred here, as is the founder of the Forest Lawn franchise, Hubert Eaton. Eaton and Disney were similar can-do visionaries, both born in the Midwest and oddly, they both died in 1966, within three months of each other. My grandfather waits for the Second Coming nearby, on Inspiration Slope. His only brush with fame is the fact that as a car salesman, he taught Bette Davis to drive. She too is among Hollywood royalty buried at Forest Lawn.

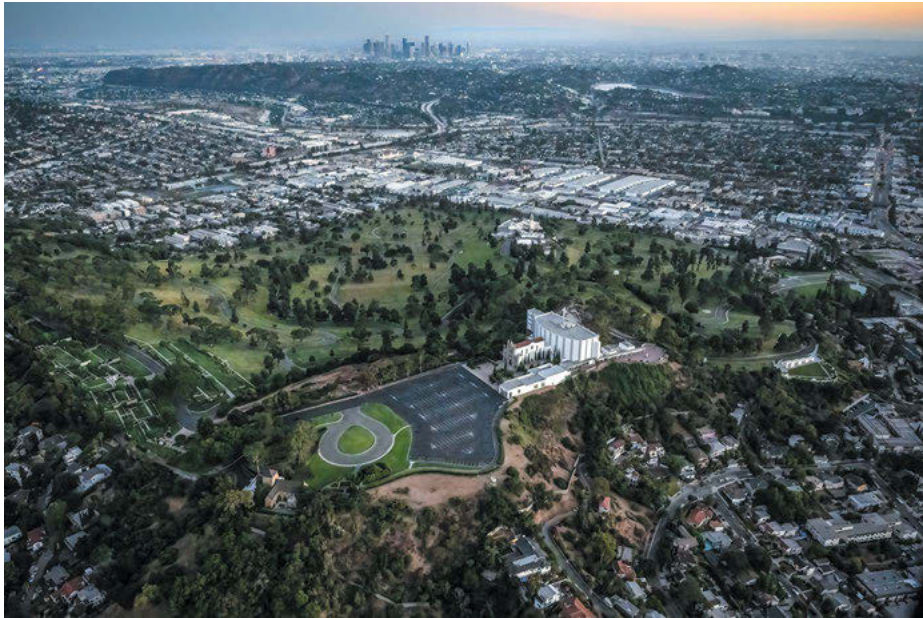


Fig. 3: Forest Lawn Memorial Park, Glendale. The *Crucifixion* panorama is housed in the large white building, center right, by the parking lot. Image, the author (via a helicopter).

And then there is the white palace on the hill, the summit of the entire park (Fig. 3). You can see it from Dodger Stadium and downtown Glendale and from the top of Mt. Hollywood in Griffith Park—a white, Mid-Century Modern building crowned by a huge, lit-in-the-dark white cross. One arrives at the upper tier after a winding, tree-lined drive through a pastoral dreamland. Park and check your watch: shows, on average, start once an hour. You enter the *Crucifixion*'s display space via a faux (and downsized) Gothic cathedral (Fig. 4). That dark hallway opens into an immense interior, rather like one of the



Fig. 4: Gothic-style entrance hall to Hall of Crucifixion-Resurrection, center right. The white cross, lit at night, can be seen widely from areas north of downtown Los Angeles. Image, James Fishburne, CC-BY-SA-4.0.

rooms inside Carlsbad Caverns, where a normal cave passageway suddenly delivers you into a stadium-sized space of clever lights and dripping stalactites.

The auditorium contains 785 seats and seems large, almost vast, or at least it does until the hanger-sized curtains part and you finally see the painting itself (Fig. 5). The room then becomes puny, even nonexistent. Are we inside a building or are we in the middle of the scene itself, hovering just out of view on what perhaps is an invisible sky car or force field? The point of view is a curious one; we are definitely in the scene and yet we are not on solid ground, since the hilltop falls away before we can reach it. In the original presentations in Europe, viewers stood on a wooden platform and the painting was shown at eye-level in the half-round. It came to the United States for the St. Louis World's Fair in 1904 but was too big to show, so went into storage until it was brought to California in the 1940s. Now we see it from a bit lower down, looking up at it and into it and across it, falling into its pictorial space until nothing else in the room registers. If it were a musical instrument, this painting would be the largest, loudest, grandest organ you have ever heard. No matter where we think we are, what a Show of Shows this is—from Simon of Cyrene to the Apostle Peter to Joseph of Arimathea, everybody is here, portrayed with confident brio (Fig. 6).



Fig. 5: Interior of the Hall of Crucifixion-Resurrection; immense curtains part to reveal the work. Image, the author.



Fig. 6: Jan Styka, artist (Polish, 1858–1925) detail from *Crucifixion*, 1894–1897, oil on linen, 594.4 m × 137.2 m (195 ft × 45 ft.). Image, the author.

It seems petty to dispute the details, yet the pious and talented Mr. Styka inadvertently made mistakes. There are stands of cactus that should not be there, and he misrepresented the reds of the red cloaks, and he got all of his birds wrong because there are no birds at all. Compare this to modern Jerusalem, which has achieved a cumula-

tive list of over three hundred different bird species. Right in the center of the city one can see buntings, kestrels, crows, shrikes—birds are everywhere. A tan, curve-billed kind with startling black-and-white wings is the hoopoe, national bird of Israel. Birding is so good there is even a bird-banding station—“ringing,” as it is called in Continental English—in Sacher Park, right across from the Knesset, the Supreme Court, and the National Library. (After dark, visiting the bird station with flashlights is a good way to encounter security guards and wild porcupines.) This is all biblical and central: you can stroll from the bird observatory to the Zion Gate in under half an hour.

It's not his fault, this cactus gaffe. When Styka was born in what is now Lviv, Ukraine, I am sure that North American botany was not part of the lyceum's curriculum. He had no way of knowing that all cactus species originated in the New World, and hence *Opuntia*, aka prickly pear, didn't reach Europe until after the Spanish Conquest of Mexico, and didn't reach the Middle-East until the eighteenth century. Once prickly pear got there, it spread robustly, and so by the time Styka arrived in the 1890s to research the landscape of the Messiah, there was indeed a lot of feral cacti in and around the Old City. It looked like it had been there since time immemorial, and as far as Styka's viewers were concerned, of course it had been. The corollary to *If you build it, they will come*, is, “If you paint it, it must be true.”



Fig. 7: Jan Styka, artist (Polish, 1858–1925) detail from *Crucifixion*, 1894–1897, oil on linen, 594.4 m × 137.2 m (195 ft × 45 ft.). The Centurion Longinus tries to control the crowd. Note the ahistorical Italian cypress in the background, far right, and some kind of (South African?) non-native succulent in the bottom right foreground. Image, the author.

Yet other than cactus, and other than the fact that Jesus never wore cochineal-dyed cloaks, this work portrays history with perfect accuracy. I know that because I was there: I witnessed the Crucifixion myself. I mean that not as a joke nor as a hint of undiagnosed psychosis. I did not have any previous lives (none that I remember now, anyway); I was never a plucky sidekick joining Dr. Who for a time-hopping jaunt inside the TARDIS. While I do have vivid dreams some nights, none have ever been set in the middle of the day on a Friday in early April, 33 CE. What I do have though is my lived twentieth-century experience and a traditional upbringing centered on Christian faith, and having first seen the Styka painting at age five, and having visited it often since then, it has become so indelible that for me there are no other interpretations. Styka's version is definitive; it *is* the Crucifixion, exactly as it happened. I know what it looks like because he showed it to me; through him, I was there (Fig. 7).

I say this even as I acknowledge that the Passion of Christ is the single-most depicted event in all of Western Art—ten times more common numerically even than hunting dogs, horses, popes, baskets of fruit, or half-naked women reclining on oriental couches. Over the years, I have seen a *lot* of dead saviors, delivered to me through folk art, Ethiopian churches, movies, and even inside a chapel on a Russian base in Antarctica. I had a minor role once in a college production of *Jesus Christ Superstar*; my childhood King James is still my bible translation of choice. I am very aware of many other manifestations of the Holy moment. Yet through all of that, the Forest Lawn Passion remains the real one, the true one. The only departure that I concede is that when I was growing up, the Jesus I was taught about had blond hair and blue eyes. That palimpsest has been overwritten since then, and most portrayals, while not going so far as to show a fully Semitic feature set, at least move Jesus away from looking like a long-lost brother to Odin and Thor.

When I finally went to Jerusalem myself as a pilgrim and a tourist (and a researcher, working on a still-unfinished project, *Melville in the Holy Land*), I worried that the real place would not live up either to Styk's painted version or to Melville's notes. Melville had gone to the Levant in the winter of 1856–1857. His notebook survives and provides an interesting insight into how he saw the world. Judea was “a tornado of stones”; the best place of interest (he said) was the graveyard. Typical entry (with his spelling retained): “The Holy Sepulchre — ruined dome—confused & half-ruinous pile. — Laberithys & terraces of mouldy grottos, tombs, & shrines. Smells like a dead-house, dingy light.” In his journal he mocks the guards, the tourists, the food, the shills and the marks. Reflecting on the region as a whole, he asks, “Is the desolation the result of the fatal embrace of the Deity?” If so, “Hapless are the favorites of heaven.” I have an ongoing project that tries to blend his notes with mine.

Once I was in Israel, I saw that my worries were unfounded. There it all was: the cactus, the white stone, the robes, the beards. There even were gazelles and camels. True, Jerusalem has more guns now (and more souvenir stands). Did Jesus ever eat falafels? I can recommend a fabulous place. The small details of commerce change, while the stone, like the Dude, abides (Fig. 8).



Fig. 8: Jerusalem today. Image, the author.

Do you miss the belief in the power of representation? We are skeptical now, both of images and of those who create them. In contrast, a nineteenth-century artist could spend two years painting something huge and ambitious and be confident that when it was done, people would not dismiss it as a deep fake, or, worse yet, shrug and say, “My kid could have done that!” In fact, enjoying a panorama these days is an archetypal anti-AI experience, whether it means studying a stretched-out-flat painting like the presentation at Forest Lawn, or going to see an immersive cyclorama, such as *The Battle of Atlanta* in Georgia or the *Shengjing Panorama* at the Velaslavasay in Los Angeles. Viewing a panorama is something that has to be done in person, and the maker’s hand matters completely. I love that Styka superimposed his own self-portrait on the Apostle Paul, even if Saul of Tarsus was probably not at the Crucifixion. Computers (so far) never do that. With a nineteenth-century panorama, your work might be too big to show anywhere—that was Styka’s problem—but if it was seen at all, it would be studied, believed, admired, copied. And it is not a freeze-frame. Not a snapshot, not a frame from a movie—a good panorama is an assemblage of simultaneous, all-at-once vignettes. As artist Sara Velas recently told the *New York Times*, “an argument could be made that panorama paintings are not pre-cinema, but that they are cinema themselves.” She explains, “The way that peripheral vision is activated inherently makes things more experiential and opens up a different type of memory” (August 31, 2023).

In a strange reversal, size saved him. Because Styka’s work was too big to show, it was thus too big to make money, yet it was also too big to export back home to Eu-

rope. His painting became stranded in America, and given the pending pivot of world history, this orphaning happened at a good time. If Styka had taken *Crucifixion* back to Kraków or Moscow or Berlin, it would have inevitably entered the long, dark, horrible dice throw of the twentieth century. Odds of survival would have been close to nil, and even if it didn't get destroyed during World War I, then there was the Bolshevik Revolution, the Polish-Soviet War of 1919, the Great Depression, miscellaneous fires and floods, the long, desperate years of World War II, the Soviet Occupation of the Eastern Bloc, and on and on and on—pogroms and famines and scorched earth retreats and looting and confiscation and reprisal and counter-reprisal, small scale and large, documented or unwitnessed.

How much of art history is not the study of art, but the study of luck? That anything survives at all seems miraculous. Some stolen art is recovered (*Mona Lisa*, Goya's *Portrait of Wellington*, Munch's *Scream*, stolen in 1994, recovered, stolen in 2004, recovered again); some is still missing (*The Concert*, Vermeer; *Poppy Flowers*, van Gogh); some we may yet hope for future luck to bring to us—is there ever going to be a second Chauvet Cave, as good or even better than the first one? (Spelunkers of the world, unite.) So much though rests on a tenuous contingency. The luck is not just that the work survives, or some scrap of documentation or a stray letter that helps anchor it in meaning and context, but the luck is ours, too. In my case, my grandfather left Germany and made his way to Chicago and then Milwaukee, but somebody close to him—a brother? an elderly uncle?—hard to know, since my grandfather refused to talk about it—headed east instead and joined an expatriate colony along the Volga, deep inside Mother Russia. That uncle-brother ended up as another victim of another of Stalin's endless purges, and after the 1930s, was not heard from again.

You, too, gentle reader, have arrived at this page through an endless cascade of good luck. Miles and miles of it—a lake of luck, an entire ocean of luck. Your very existence is so improbable it defies all the odds-makers in Las Vegas and Monte Carlo. When I was an artist-in-residence in Antarctica, I was trained in how to build a snow cave, how to survive a plane crash, what to do in a whiteout. These drills did not alarm me; I had already been in the nearest of near misses in a bush plane in New Guinea, with our landing gear dragging through the treetops as we struggled to take off from an open field. My luck was self-evident. That same plane had to abort its landing on the approach to main airport, because the plane ahead of us blew a tire and skidded sideways onto our path. Another time my plane was hit by lightning in Costa Rica, buck and swerve as the cabin lights surged on and off. Practicing for plane crashes in Antarctica didn't faze me: been there, done that. I knew whatever happened, I would survive.

What is luck? Is it a kind of underwear you put on before a date, is it being born you and not being born the boy next door? We are all lucky because some lemur long ago decided to evolve gorgeous amber eyes. We are lucky that our parents' parents survived smallpox, dengue fever, being hunted by Cossacks, crossing the flooded plank by groping with a numb boot in the muddy brown water beneath which the

tops of drowned trees waved like dead hands, survived bear maulings and influenza, caesarian sections with a jackknife and a swig of vodka, survived the long absences when the father of the father of the grandfather joined a whaling crew and was gone for three years at a go, his hands so cold on the rigging he thought he would never reach the deck, the try pots boiling over, beatings for insubordination, the time the ship went aground, then, just as suddenly, washed back off of the reef, the time this very lucky man survived being robbed in Brazil, and then later when he survived scurvy and tetanus and not being able to brush his own teeth after his hands were burned one year, survived being stabbed by a gaff hook when pitch and roll reversed themselves, survived boredom and fear and the month of dark nights when suicide sat in his belly like an ulcer. We are lucky because fins became hands and hands became nimble enough to flamenco guitar strings and win prizes, win bets, win hearts, hearts that we are lucky now to have as well because no matter how many times people stab us in them and no matter how often the lightning strikes the people next to us, we still know that it won't hit us, it can't hit us, not even in the middle of all this chaos and trouble, not even when we are in the edge of the crowd at the Crucifixion of Christ and refuse to speak up or even to weep one long sad tear. After all, the lightning can't hit us, it just can't, we refuse to believe even the possibility of it, not because we want to be safe or deserve to be safe but because just look at how lucky—how very, very lucky—we always have been so far.

Author Biography

Charles Hood has published twenty books, divided between original poetry and natural history and field guides, as well as over 800 photographs. Essays currently in press include a review of the archives of African American poet Wanda Coleman, a cultural history of deserts in North America, and an analysis of the semiotics of mink coats. Hood has been a Fulbright Scholar, an Artist-in-Residence in Antarctica, and a Research Fellow at the Center for Art + Environment, Nevada Museum of Art. He currently is Professor Emeritus at Antelope Valley College, Lancaster, California.

Chiara Masiero Sgrinzatto

Recreating a Lost World Through Immersive Illustration: A View from Napoli Capodichino

Abstract: This paper illustrates the recreation of a panoramic environment through an immersive original illustration that I designed for the 360VR documentary “Tuskegee Airmen VR,” directed by Uli Futschick for The World War II Foundation. The spherical panorama is developed from a fragment of archival footage took in Naples, at Capodichino Airfield during World War II. This archival material covers a small portion of the entire image, while the rest of the environment is reconstructed by guesswork, taking inspiration from maps of the area and *Vedutismo* paintings. The illustrated scene depicting the view from the Airfield in Capodichino, Naples is reconstructed by matching the archival footage placed on the spherical canvas by the Director, integrating non-panoramic archival material with immersive drawing.

Keywords: Spherical drawing, immersive illustration, 360° reconstruction, 360VR documentary, time-travel panorama

In this paper, I present how I drew a 360° view of Napoli from *Capodichino* during World War II (Fig. 1) as a background for a scene of the 360/VR documentary “Tuskegee Airmen VR,” directed by Uli Futschick for The World War II Foundation (Futschik, 2023). The scene stages the deployment of three squadrons of the “Tuskegee Airmen” in Italy in 1944. Although it is very short, it is important to the whole story, as it introduces the presence of these fighters in Southern Italy during World War II.

The expression “Tuskegee Airmen” refers to the men and women, both African-American and Caucasian, involved in the so-called “Tuskegee Experience,” the Army Air Corps program that trained African-American servicepeople to fly and maintain combat aircraft. The World War II Foundation is a non-profit organization founded in 2011 by American filmmaker Tim Gray. It has produced a series of 360VR documentaries directed by Uli Futschik—Koncept VR, a New York-based agency that develops, produces, and distributes immersive content.

This specific 360VR historical documentary, released in October 2023, tells the story of the Tuskegee Airmen through a time-traveling narrative between the US and Europe. The voices of veterans are combined with contemporary immersive footage as well as archival photo and video material from World War II. The story unfolds as a virtual time machine by allowing the viewer to feel present in the places where history happened while glimpsing at the events through archival augmentation.

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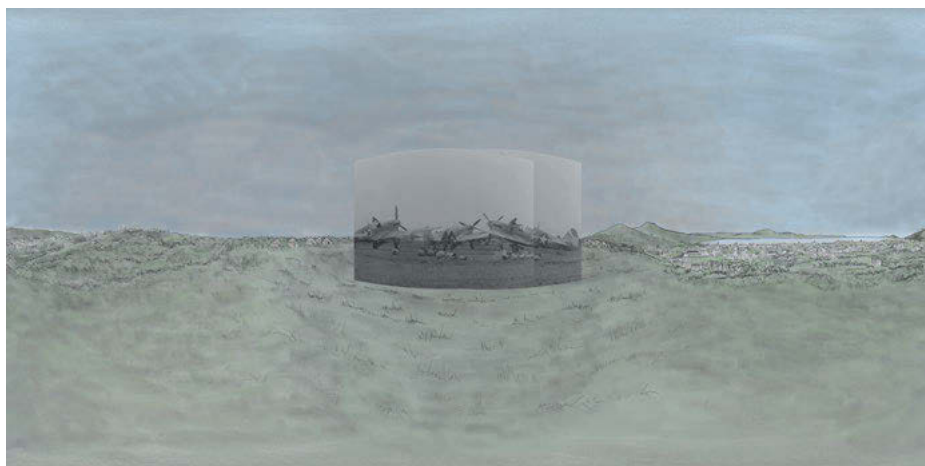


Fig. 1: Chiara Masiero Sgrinzatto (Italian, 1982), *Airfield in Capodichino, Naples*, 2023. Digital drawing, 8192x4096 pixel, final 360° illustration in equirectangular projection. Image, Chiara Masiero Sgrinzatto.

The purpose of my illustrated background was therefore to reconstruct the environment in such a way as to support the documentary's narrative, stay as close as possible to historical facts, and maintain a pleasant and balanced composition. The archival part is a video capturing aircraft on the airfield of Napoli Capodichino. The drawn parts consist mainly of the view of the Gulf of Naples, to cover the whole tridimensional space.

1 Setting the Point of View

The 360° illustration work was developed from archival material (Fig. 2) chosen by Director Uli Futschick to introduce the chapter of the 360/VR documentary about the presence of the Tuskegee Airmen in Southern Italy during World War II. The video depicts the Capodichino military airfield in Naples. Today, Naples-Capodichino is the international airport serving Naples and the Southern Italian region of *Campania*. Previously known as *Campo di Marte*, Capodichino was already used as a military training field under the Kingdom of Naples (fourteenth–nineteenth centuries). It became a military airport during the First World War and was used as a combat airfield by the United States Army Air Forces and the Royal Air Force during the Italian Campaign of the World War II (*Le Origini Di Un Aeroporto—Note Storiche Su Napoli Capodichino* 2013).

To obtain the full 360° illustration, the archival footage was extended and integrated with the illustrated view of the Gulf of Naples, from the Vesuvius to the Islands



Fig. 2: Uli Futschick (American (born German), 1977). Preparatory canvas for the 360° illustration *Airfield in Capodichino, Naples*. Archival footage located in the 360° spherical space. Image, Uli Futschick.

of Procida and Ischia, drawn in a style that completes the environment without distracting viewers from the story and the historical documents.

Figure 3 shows the first and last frames of the archival footage chosen by the Director, panning right for about 25° on the horizontal axis. The scene captures a portion of the airfield, with men working on aircraft. Overall, the archival footage occupies about 90° on the horizontal axis and 50° on the vertical axis. This scene was the starting point around which the environment was developed. Although the scene is from the past, the reconstruction was based on the contemporary sources and data that I was able to inspect and collect in the course of the work.

Figure 4 shows the first and last frames of the video in a tridimensional spherical space: the archival footage covers only a small portion of the entire image, while the area occupied by the illustration spans for about 270° on the horizontal axis and around 130° between the zenith and the nadir on the vertical axis to fill with the new illustration. The ideal way to understand the tridimensional space of the composition is an equirectangular projection, i.e. the development of the spherical space onto a single flat surface.¹ Such a projection allows the designer to see the whole space at once glance and dimension the elements on the canvas. Following the grid, we can

¹ The majority of spherical panoramic viewer applications use equirectangular projection as input format images. In order to be viewed interactively, the flat spherical image is projected onto a tridimensional spherical digital environment, approximated with the projection onto the faces of a cube. Once reprojected and viewed on a computer screen or a smart device, the displayed portion of the panorama, called field of view measures by default about 90°–110° on the horizontal axis and 40°–50° on the vertical axis.



Fig. 3: Unknown, *British 8th Army and US 99th Negro Fighter Squadron*, 23 December 1943, moving image. First and last frames of the archival video capturing the Airfield of Capodichino, Naples, placed on a 360° spherical space and shown in rectilinear projection, as viewed on a digital smart device or computer screen. Image, National Archives Identifier 14141 U.S. National Archives.

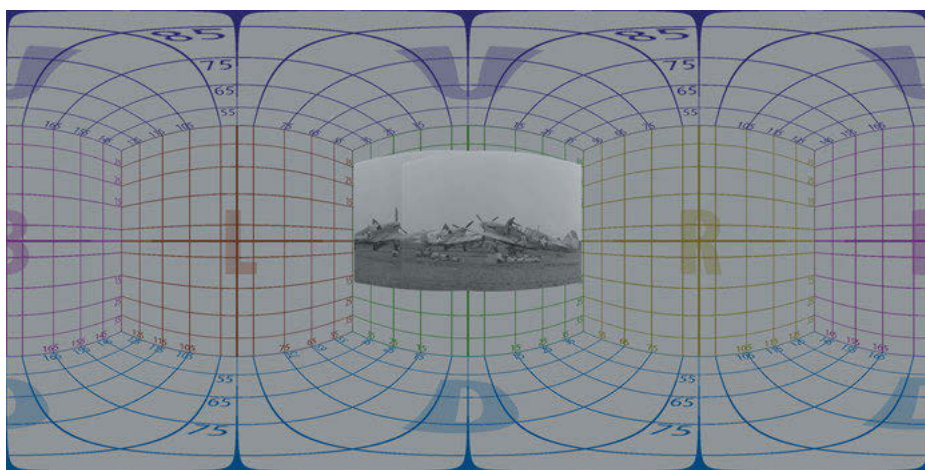


Fig. 4: Chiara Masiero Sgrinzatto (Italian, 1982), Preparatory canvas for the 360° illustration *Airfield in Capodichino, Naples*. Archival footage located in the 360° spherical space, shown on the grid in equirectangular projection. Image, Chiara Masiero Sgrinzatto.

see that the archival footage takes about 90° horizontally and about 50° vertically (in green—front face). The left, right, and back sides (L in red—R in yellow, B in pink), as well as the upper and lower sides (U in purple—zenith, D in blue—nadir), are the ones that need to be filled with the illustration.

Naples was heavily bombed during World War II and has since been reconstructed, developing and growing dramatically. Depicting how the city looked like in the 1940s therefore required researching images taken before World War II. Such visual material, however, is very scarce, forcing me to resort to complementary strategies.

Studying the altimetry of the area was crucial to shaping the 360° view and to arranging the elements of the 360° illustration. The skyline in the background is given by the orography that is visible when looking around from the standpoint, and helps the viewer locate landmarks and important areas within the tridimensional space. In Fig. 5, we can see that the highest peak is the Vesuvius (shown in red), reaching about 1000 m above sea level. The lower parts are located on the gulf and city of Naples (shown in blue), adjacent to the Tyrrhenian Sea; the surrounding hills (in green) to the left of the Gulf of Naples reach approximately the same height as the airport of Capodichino, marked with the icon of a plane on the map.

Studying the area on Google Maps 3D and Apple Maps 3D allowed me to understand it from a bird's eye perspective, confirming the position of the landmarks that should be present in the illustration (namely the Vesuvius and the Gulf of Naples). After this preliminary research, I opted to approximate the view to the nearby *Reggia di Capodimonte*, a palace and park built in the seventeenth century by the House of Bourbon to host a hunting lodge and the Farnese art collection. It served as royal residency for the Bourbons during the Kingdom of Naples, the French during the Napoleon Empire, and the House of Savoy after the unification of Italy. Since 1957, it has become the Capodimonte National Art Museum and Gallery (Morra 2020).

The 360° illustration must show the whole landscape from a specific point of view: on the right side of the archival footage, we have the Vesuvius; following around to the right, the Gulf of Naples and the surrounding hills complete the 360° scene. Figure 6 shows how the view from Capodichino can be fairly approximated from Capodimonte for this purpose, as it offers a vantage point on the Gulf of Naples that spans from the Vesuvius (left) to the city with Mount Vomero and the Castel Sant'Elmo fortress, and the islands of Procida and Ischia on the right.

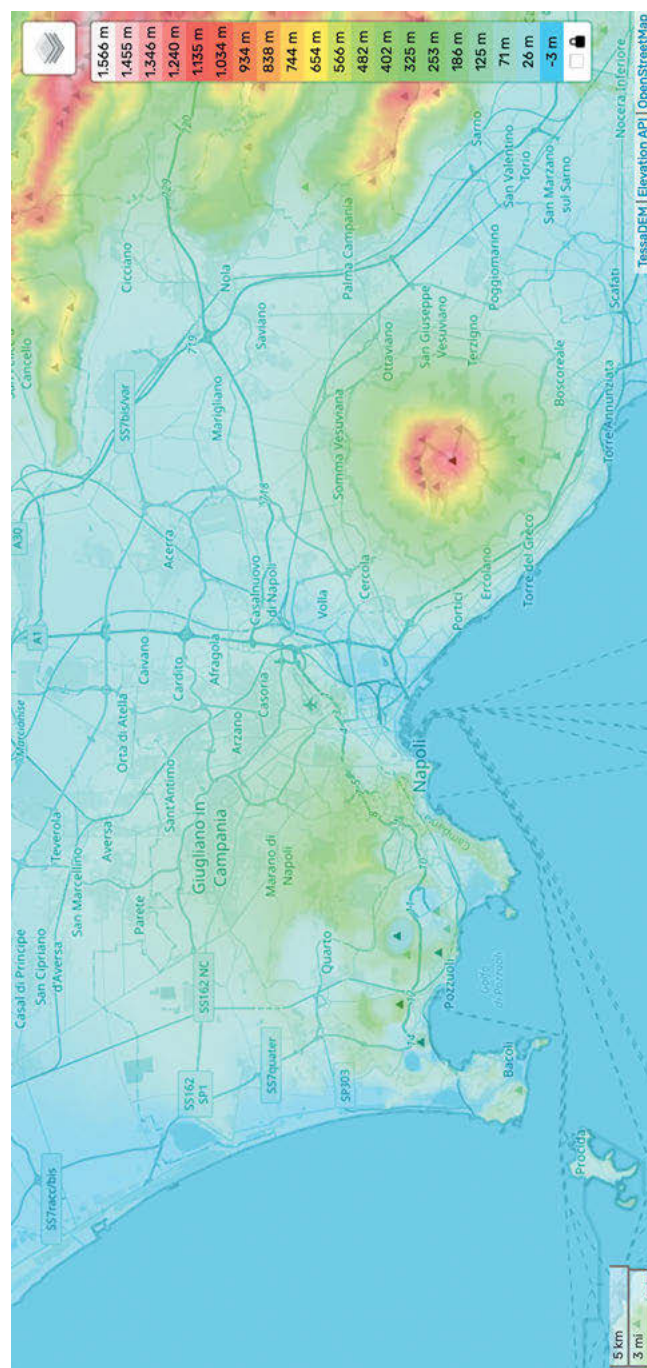


Fig. 5: Unknown, *Altimetry map of the Naples area*. Image, Topographic-map.com and OpenStreetMap.



Fig. 6: Chiara Masiero Sgrinzatto (Italian, 1982). The map explains the position of the archival footage (marked in red/black) and the landmarks used to locate the point of view: the Gulf of Naples in the southern part and the Vesuvius on the eastern side. We can see how Capodichino, the supposed viewpoint of the panorama, can be approximated to the nearby hill of Capodimonte. Image, Chiara Masiero Sgrinzatto.

2 Vedutismo Paintings for Reference

Using Capodimonte instead of Capodichino as a viewpoint for the illustration was important to find visual references about the aspect of the city before World War II. In the second decade of the nineteenth century, artists of the *Posillipo* school, a group of landscape painters based in Naples, painted several views of the city and its surroundings (Causa 1967). Although such views are usually taken from locations closer to the city center, there are several paintings depicting the Gulf and the city of Naples from *Capodimonte*. Although they provide few details on the built environment, such paintings give an overall view of the landscape, providing information to the 360° illustration about the area occupied by the city, main buildings, and green areas (Spinosa and Di Mauro 1987; 1989).

One such artist is Salvatore Fergola (Italian, 1798–1874), who painted and printed several views of Naples as the court painter of the House of Bourbon. He depicted many views of the city and its surroundings including Naples, Posillipo, and Caserta, as well as documenting scenes from events that occurred in Naples such as “The inauguration of the railway Napoli-Portici,” which illustrates the opening of the first railway in Italy. (“*Inaugurazione Della Ferrovia Napoli-Portici. Dipinto, Post 1839—Ante 1841*” n.d.),

Fergola’s view from the *Scudillo di Capodimonte* (Fig. 7), a sloping route that connects the city to the top of the hill, allowed me to locate the painting in the tridimensional space, as we can clearly see the Vesuvius on the right of the big tree, and the Gulf and City of Naples up to the fortress on the right. Another important detail is the Greek Temple on the left of the big tree, which expands the area from which I could take reference. Other drawings of the same *veduta* by the same artist were unfortunately not useful for



Fig. 7: Salvatore Fergola (Italian, 1798–1874), *Napoli dallo Scudillo di Capodimonte*. 71 × 128 cm. Image, deposito 'quadri,' Royal Palace of Naples. Courtesy of Fototeca Direzione regionale Musei Campania.

the purposes of the 360° illustration, as their poor state of conservation does not permit to see the details with sufficient clarity. (*Veduta di Napoli da Capodimonte Disegno*, Post 1820–Ante 1830 n.d. and *Veduta di Napoli da Capodimonte. Disegno*, 1825–1849 n.d.)

Another court painter of the Kingdom of Naples was Giovan Battista Lusieri (Italian, 1755–1821), popular among Grand Tour travelers for his topographical and archaeological paintings. He was also employed by Lord Elgin, a British Count and collector of Greek and Turkish antiquities. His watercolor depicting Naples from Capodimonte, part of a group of paintings purchased by Lord Elgin in 1824 and sold at Sotheby's in London in 1986, predates the painting by Fergola. Lusieri's meticulous depiction of architecture and the vegetation affecting it is a significant documentation of the state of conservation of the city in the late eighteenth century. Thanks to its highly detailed view of the city, this visual resource allowed me to take references of buildings and green areas in the foreground, as well as of the hills and islands in the background.

The painting by Teodoro Duclère (Italian, 1812–1869) (Fig. 8), depicts the view from the *Conocchia*, a roman mausoleum that was located on the sloping route to the *Scudillo* di Capodimonte. The whole area was named after the mausoleum during the Middle Ages, which is still referred to as *Conocchia* today. During the Grand Tour era, the mausoleum was often featured in tourist guides and depicted in paintings, and it also was a standpoint for landscape painters.

Duclère's painting has substantially the same view of the city of Fergola's one, the slightly wider composition makes it interesting for the purposes of the 360° illustration. On the right side of the painting, the hill of Camaldoli can be seen on the left side of Mount



Fig. 8: Teodoro Duclère (Italian, 1812–1869) *Napoli from the Canocchia*, cm 76 × 119 cm. Image, Certosa e Museo di San Martino, Naples. Courtesy of Fototeca Direzione regionale Musei Campania.

Vomero, extending the part of the painting from which I was able to refer. The foreground details were useful in recreating the shape and vegetation of the hills along the route.

Taking as key points the Vesuvius and Mount Vomero in the paintings and the 360° canvas, I could locate the two paintings on the tridimensional space (Fig. 9) and overlap them using specialized software for assembling and stitching panoramic images. This procedure allowed me to confirm the position of the city and the airfield

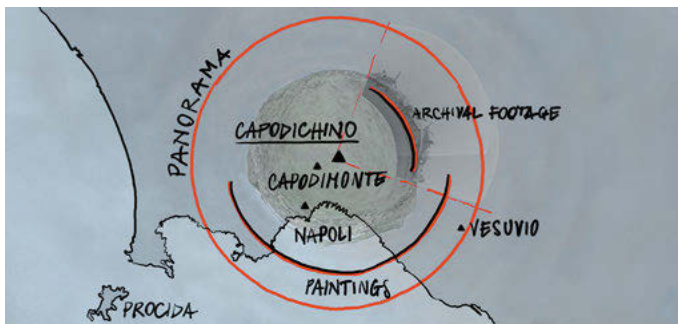


Fig. 9: Chiara Masiero Sgrinzatto (Italian, 1982). The map shows the point of view of the panorama, the position of the archival footage, and the portion of the Gulf of Naples depicted in the paintings by Fergola and Lusieri. The 360° illustration *Airfield in Capodichino, Naples* is overlapped with the map in stereographic projection. Image, Chiara Masiero Sgrinzatto.

related to the archival footage, covering about 180° on the horizontal axis on the most crowded part of the composition. Figure 8 clearly shows the viewpoint approximated from Capodichino to Capodimonte, the portion of the 360° space taken by the archival footage, and the area covered by the paintings from which I could take visual reference. The superimposition of the 360° illustration, shown in stereographic projection on the map, displays the accuracy of the graphic reconstruction of the view.

3 The 360° Illustration

By combining the information extracted from the cartography and the paintings, I could draw the 360° view from Capodichino, which was used as a spherical background for the scene at min 09:48 of the 360/VR documentary “Tuskegee Airmen VR” (Fig. 1). A number of details of the first draft of the 360° illustration had to be changed by request of the Director due to narrative requirements: for instance, several mountainous parts in the foreground between the airfield and the city were deleted; other details, such as the army tents, were added in the background around the archival material to evoke a military camp (for a reconstruction of the changes, compare Figs. 1 and 10).

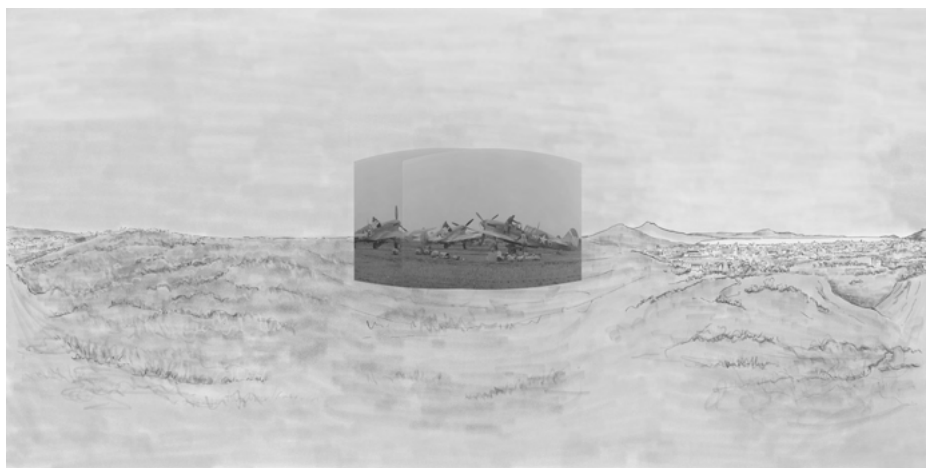


Fig. 10: Chiara Masiero Sgrinzatto (Italian, 1982), *Airfield in Capodichino, Naples*, 2023, Digital drawing, 8192 × 4096 pixel, first draft of the 360° illustration in equirectangular projection. Image, Chiara Masiero Sgrinzatto.

Starting from the center of the panorama, where the archival footage is located, we can see Vesuvius and the Gulf of Naples, the city, and the surrounding hills (Fig. 1). The 360° drawing provides the archival footage with an environment that is as historically accurate as possible and conducive to the narrative. It is detailed enough to

evoke Naples during World War II, and the gentle use of colors and pencil strokes helps keep the spectator focused on the story.

4 Technical Note

The spherical drawing was painted on a digital canvas 8192 × 4096 pixel (resolution 8k) in equirectangular projection in the Adobe Fresco app, using an iPad Pro with the Apple Pencil. Some minor editing, as well as zenith and nadir patching were done in Adobe Photoshop. The preparatory drawings and the overlapping of the paintings on the tridimensional space were done in PTGui, a professional software for assembling and stitching panoramic photographic images. The 360° was used at full resolution in the 360/VR documentary. The interactive version of the 360° illustration depicting Airfield in Capodichino, Naples is available online and is visible on any computer, smart device, and head-mounted display (“Airfield Near Naples” n.d).

Author Biography

Chiara Masiero Sgrinzatto is a visual designer based in Venice, Italy. An architect specializing in Visual Arts, her work is focused on the representation of environments through immersive hand-made drawing. She has been working in the VR industry for over a decade, creating photo, video, and illustrated 360° content for clients and institutions worldwide, including the European Union, La Biennale di Venezia, the Italian Ministry of Culture, the Venice World Expo Committee, the Guggenheim Collection, Ricoh Japan and USA, and The World War II Foundation. She also collaborates with panoramic photography manufacturers on equipment beta-testing, and with specialized software houses on the design of immersive interfaces. She is doing a joint Ph.D. in Digital Media Arts between the Algarve and Aberta Universities in Portugal. <https://www.chiaramasierosgrinzatto.com>

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5 International Panorama Council Conference Report & Papers

Molly C. Briggs, Blagovesta Momchedjikova

Introduction: 33rd Annual International Panorama Council Conference at the University of Iowa Museum of Natural History

The International Panorama Council's annual conferences are extraordinarily rich and synthetic gatherings where historians, artists, designers, theorists, curators, technicians, scientists, conservators, managers and other professionals exchange insight, resources and inspiration in spaces illuminated by panoramas and related ephemera. Hosted by the Museum of Natural History at the University of Iowa, the 2023 conference was no exception; anchored by the museum's *Laysan Island Cyclorama* (opened 1914), the conference unfolded in the campus's spectacular Pentacrest Museums complex, with sessions in the Old State Capitol and frequent opportunities to visit the classical halls of the Natural History Museum next door. This was IPC's first conference to be anchored by a panorama whose subject matter is natural history, and our organization remains indebted to Museum Director Liz Crooks and her staff for bringing their remarkable collection to our awareness.

Visiting the Laysan Island Cyclorama seems to turn the space of the museum inside out. Lying at the end of the Hageboeck Hall of Birds, the cyclorama entrance invites the visitor to turn from the panoply of captivating nineteenth-century diorama displays to a small wood-paneled hallway that leads into a glass box set on the sandy oceanic shores of Laysan Island. Whereas moments before, one had viewed taxidermied birds in painted and sculpted environments, here it is the visitor who finds themselves enclosed in the architectonic glass-and-wood museum box, with views in nearly 360 degrees. It is hard not to feel afterward that one actually has been transported to not only to this remote island but also to the time in which it is represented, before the island's diverse avian ecology was decimated by the human introduction of game rabbits early in the twentieth century. As such, the cyclorama stands as a meta-monument to conservation; that is, both as argument for ecological stewardship and as a call for preservation of this captivating materio-cultural document.

Whereas the rest of the PIMS Yearbook reflects a broader contributorship, the Conference Report & Papers section stands as a concentrated reflection of the 2023 conference. Works gathered here reprise a cross-section of the presentations given in Iowa City. Papers are about the same length as the corresponding presentations and

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are subject to two rounds single-blind peer review—first by the IPC Conference Scientific Committee, and second by the PIMS Yearbook Editorial Board. After the papers, readers will find titles, abstracts, keywords, and biographies for all conference presentations listed alongside the conference program.

The IPC warmly invites readers to consider attending or presenting at the next annual conference. For details, please visit https://panoramacouncil.org/en/what_we_do/.

Jessica Smith

Surrounded with Sights, Showered by Sounds: The Laysan Island Cyclorama

Abstract: This article establishes basic history and importance of the *Laysan Island Cyclorama*, familiarizes readers with current conservation efforts, and explores the ways in which the University of Iowa Museum of Natural History (MNH) creates high-impact, hands-on learning opportunities that make the University of Iowa special. The museum's dioramas take students out of the classroom, allowing them to connect with both art and science in an informal learning environment. Key to this experience is the *Laysan Island Cyclorama*. The exhibit, which features a fragile ecosystem, is intended to demonstrate the importance of conservation. In dire need of conservation and restoration itself, the cyclorama immerses students in a time and place far removed from their campus lives. This type of student engagement cannot be replicated in a textbook, video, or even virtual reality.

Keywords: Informal learning, student engagement, restoration

At the University of Iowa Museum of Natural History (MNH), history comes alive through the immersive experience of the *Laysan Island Cyclorama* (Fig. 1), an extraordinary convergence of art, science, and conservation. This remarkable exhibition not only showcases the aesthetic beauty of the island it honors, but also narrates a compelling story of environmental resilience and the profound impact of human activity on ecosystems.

Nestled within Macbride Hall (Fig. 2) where the MNH is housed, the cyclorama can be found on the University of Iowa's Pentacrest, a centrally located historic landmark on campus, at the heart of Iowa City, Iowa. The Pentacrest welcomed the 32nd International Panorama Council conference in September of 2023 and is home to two Pentacrest Museums: the MNH and the Old Capitol Museum. The MNH's origins trace back to the establishment of the Cabinet of Natural History in 1858, initially housed in the Old Capitol, later expanding in 1907 to the Natural Sciences Building, now Macbride Hall (Dill 1952, 33–37). The inauguration of the cyclorama in 1914 marked a visionary leap forward, cementing its status as a hallmark of the university's scientific and historical legacy, a legacy that continues to educate and inspire to this day.

The *Laysan Island Cyclorama* transports visitors to the ecological landscape of Laysan Island circa 1902, portraying it as a vibrant bird rookery inhabited by millions of birds, including the iconic Laysan albatross (Fig. 3). This unique exhibition employs a combination of a background mural and a foreground of specimens and other materials

Jessica Smith, Communications & Engagement, University of Iowa Pentacrest Museums, Iowa City, Iowa, USA



Fig. 1: The gannet nests, through the glass, facing south inside the *Laysan Island Cyclorama*. Welcome. Image, Jessica Smith, courtesy of the Pentacrest Museums.



Fig. 2: Macbride Hall, formerly the Natural Sciences Building, houses the UI Museum of Natural History at the center of the University of Iowa Campus. Image, Jessica Smith, courtesy of the Pentacrest Museums.

from the island to create an immersive experience. As one of few remaining cycloramas globally and the only one dedicated to the depiction of a single natural ecosystem, its significance is unparalleled. Adding to the cyclorama's uniqueness is the focus on the foreground rather than the mural. Upon entering, visitors find themselves surrounded by the sights and showered with the sounds of the island, offering a sensory journey akin to setting foot on a safe and productive bird sanctuary some 800 miles northwest of Honolulu more than a century ago, despite being in the heart of the Midwest today.

Exploring history is so much more than observing artifacts; it's about immersing oneself in the narrative, engaging with the past, and sparking conversations that transcend time. Museums serve as portals to different epochs, offering visitors a chance to connect with bygone eras and understand the stories that shaped our present. —Liz Crooks, Director, Pentacrest Museums*



Fig. 3: The *Laysan Island Cyclorama* features many species including prominent representation of both the Laysan albatross and the black-footed albatross. Image, Jessica Smith, courtesy of the Pentacrest Museums, 2021.

The genesis of the Cyclorama traces back to Charles C. Nutting's 1902 visit to Laysan Island (Nutting 1943, 281). Nutting, curator of the University of Iowa's Cabinet of Natural History (now MNH) and head of the department of zoology, first visited Laysan Island as a scientific advisor on a Smithsonian expedition to survey Pacific marine and bird life. Nutting was struck by the ecological significance he'd witnessed and, once back in Iowa,

*Liz Crooks is quoted from a conversation with the author, documented in regards to this story in 2024 for purposes of this publication.

he set aside space for the cyclorama in the new Natural Sciences Building, still under design. With the space secured, Nutting needed to raise funds for a return expedition to the island to collect materials for an exhibit. That second expedition was carried out in 1911, led by Professor Homer R. Dill, and accompanied by artist Charles A. Corwin and two assistants.

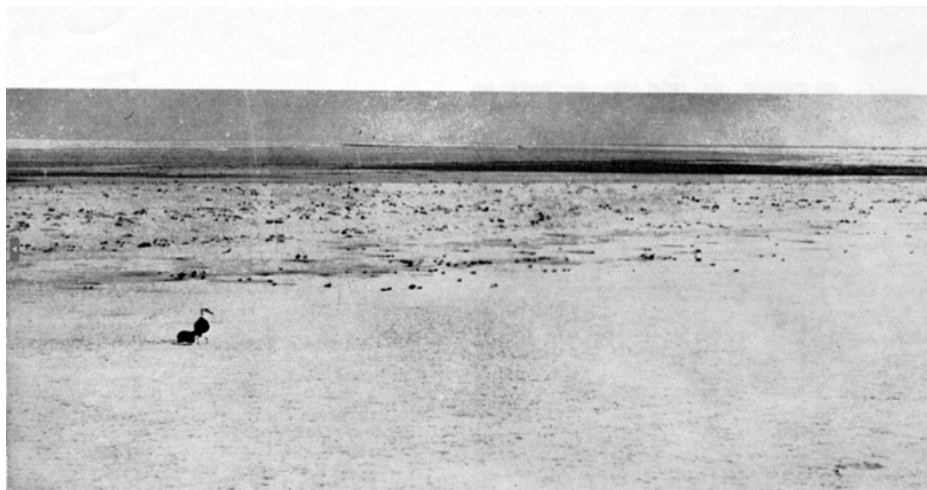
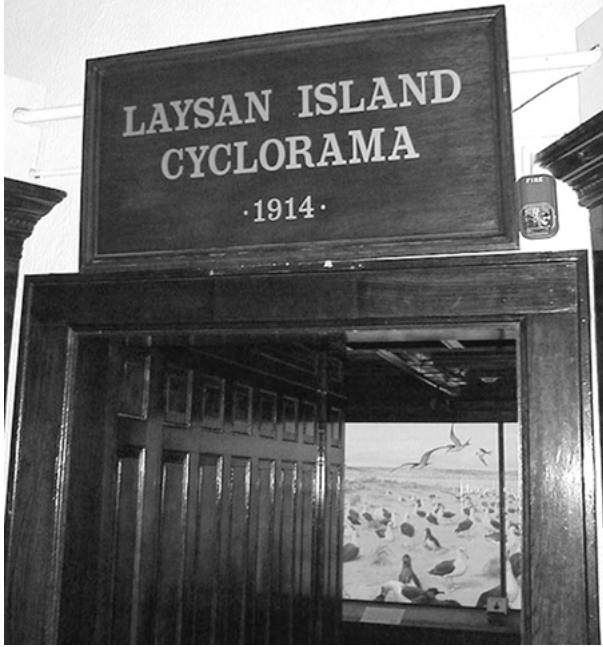


Fig. 4: The crew of scientists, artists, and assistants on the return expedition found a vastly different scene than the one Nutting described as a thriving bird sanctuary just nine years prior. Image, Alfred Baily, courtesy of the Pentacrest Museums, 1912.

In 1909, President Roosevelt established the Hawaiian Islands Reservation, which included Laysan Island (Dill 1952, 44–52). A valiant effort and necessary designation, the protected lands weren't safe without monitoring and enforcement. When the University of Iowa crew finally returned in 1911, they found the island in the midst of ecological disaster and far different from the place that had inspired Nutting just nine years prior (Fig. 4). Poachers after feathers for a booming fashion industry slaughtered an estimated half of the albatross population and miners of guano had disrupted the fragile ecosystem. Perhaps most impactful of all, rabbits, a non-native species to the island, had been introduced, wreaking havoc on the vegetation that had provided shelter and food for birds and the insects in their diet (Nutting 1909). Since that 1902 visit, the importance of creating the cyclorama had expanded to include preserving a story with a cautionary tale of ecological interdependency and unchecked human impact.

Dill's diligent collection methods during the expedition and subsequent three-year effort once back at the university to mount the specimens and prepare every detail of the exhibition culminated in the creation of what noted zoologist and conservationist William

T. Hornaday acclaimed as “the largest and by far most spectacular of all the world’s habitat groups of birds” (Dill 1952, 44–52). The cyclorama, opening to the public with free admission in 1915 (Figs. 5–7), occupies about 1,300 square feet (120 square meters), featuring



Figs. 5–7: The *Laysan Island Cyclorama* nestled inside Bird Hall of the University of Iowa Museum of Natural History (MNH) first opened to the public with free admission in 1914. Images, courtesy of the Pentacrest Museums.



Figs. 5–7 (continued)

over 100 birds of 24 species, nests, eggs, and meticulously crafted foreground elements, many created by University of Iowa Museum Studies students under Dill's instruction in what is now the oldest program of its kind in the nation. The exhibition incorporates collections of natural materials from the expedition, 50,000 artificial leaves, rocks and ground features cast from 16 barrels of plaster, and the 128-foot mural by Corwin, capturing the unique avian biodiversity of Laysan.

Beyond its artistic and scientific significance, the cyclorama serves as a testament to Iowa's early twentieth-century conservation efforts. Today, it continues to fulfill its educational mission, welcoming students and visitors of all ages. From university courses to visits by school-aged children, the exhibit offers diverse educational experiences, spanning ecology to poetry. Despite the passage of time, the cyclorama remains intact, undergoing only minimal restoration efforts thus far.

However, the cyclorama now faces a critical juncture, necessitating urgent conservation efforts to ensure its preservation for future generations. The MNH team is actively working to secure funding for a comprehensive restoration project, encompassing heating, ventilating, and temperature control upgrades, lighting enhancements, and conservation of the mural and foreground materials. The museum's fundraising campaign kicked off in 2022 when Jack Tamisiea's article, *At the UI Museum of Natural History, A Paradise Not Yet Lost*, was published in Iowa Magazine. These funds combined with grant proposals and involvement with international partners such as the International Panoramic Council, leave the museum team feeling optimistic about the cyclorama's future.

In preserving the cyclorama, the University of Iowa reaffirms its commitment to safeguarding a unique blend of American art, science, and environmental history. As a symbol of the university's dedication to education, scientific inquiry, and environmental stewardship, the cyclorama stands as a national treasure, one that continues to captivate audiences and impart timeless lessons on the delicate balance between nature and human intervention. Furthermore, the museum's commitment to fostering dialogue between the past and the present extends beyond cyclorama. Through a myriad of exhibitions and educational programs, the MNH invites visitors to engage with history, sparking conversations that transcend time and inspire a deeper appreciation for our natural and cultural heritage.

In 2023, the University of Iowa Museum of Natural History began work on an ambitious yet critical journey to preserve the *Laysan Island Cyclorama* for future generations. The museum staff commissioned and welcomed a team of expert conservators to campus for a comprehensive assessment and planning session for the restoration project (Fig. 8), made possible by early fundraising in their still ongoing campaign (Smith 2023).



Fig. 8: Conservators Ron Harvey and Nina Roth-Wells examine the cyclorama. Image, Jessica Smith, courtesy of the Pentacrest Museums, 2023.

Led by objects conservator Ron Harvey and art conservator/educator Nina Roth-Wells (Figs. 9 & 10), in collaboration with architect Jeff Hirsch and objects conservator Lisa Goldberg, the team conducted a thorough condition analysis of the cyclorama. This assessment involved scientific testing and meticulous examination of the mural, foreground elements, and specimens to identify areas of deterioration and formulate a restoration plan.

The team utilized advanced techniques to measure factors such as relative humidity, dew point, ultraviolet light exposure, footcandle levels, chemical residues, and overall structural integrity. These findings were documented in a detailed assessment and summarized in a Collections Assessment for Preservation (CAP Assessment), which will serve as the foundation for the forthcoming project.



Figs. 9 & 10: Conservators Ron Harvey and Nina Roth-Wells carry out scientific testing of the cyclorama during their 2023 visit. Image, Jessica Smith, courtesy of the Pentacrest Museums, 2023.

Following the assessment phase, the conservators outlined a comprehensive plan for the cyclorama's conservation, addressing issues such as HVAC systems, lighting fixtures, foreground cleaning, mural conservation, and structural stabilization. Their expertise and dedication laid the groundwork for the restoration efforts to come, ensuring that every aspect of the cyclorama's preservation is meticulously planned and executed.

Additionally, the museum staff pursued external funding opportunities to support the restoration project, including grant applications such as the Save America's Treasures Grant. These efforts underscored the museum's commitment to securing the resources necessary to safeguard this invaluable cultural and historical artifact.

As the restoration process progresses, the museum remains dedicated to keeping stakeholders informed and engaged. Updates on the project's milestones, challenges, and successes are shared with the public through various communication channels, fostering transparency and community involvement in the preservation efforts.

Through the collective expertise of conservators, museum staff, and supportive partners, the MNH continues to make strides in its mission to conserve the *Laysan Island Cyclorama*, a testament to the enduring legacy of environmental stewardship and educational excellence.

While this work continues, the museum is not slowed in its' simultaneous dedication to campus and community interactions in the galleries. Through guided tours, self-guided public visits, class visits, collections access, student employment, teaching, and community programming, the MNH continues to serve as a hub for education, exploration, and engagement.

Class visits to the MNH provide students with immersive, hands-on learning experiences that complement traditional classroom instruction. Through interdisciplinary approaches, students engage with exhibits exploring an array of concepts in art, science, history, and environmental studies.

Each year, thousands of students from various grade levels and disciplines visit the museum galleries to explore or complete assignments designed to enhance their understanding of curricular materials. These visits offer unique opportunities for students to connect theoretical concepts with tangible artifacts and visual representations. For instance, in 2023, the museum supported versatile and integrative learning for university-level classes in art, photography, museum studies, writing, geology, library sciences, history, anthropology, and earth sciences.

One such example is the Introduction to Earth and Environmental Studies course lab (Fig. 11), where students explore concepts of biodiversity, ecosystems, and food webs using various dioramas within the museum. During their visit, students move seamlessly from displays of woodlands to marshes to prairies, reinforcing classroom teachings with real-world examples. This experiential learning approach inspires students and fosters a deeper understanding of complex topics, cultivating lifelong retention.



Fig. 11: Students from the University of Iowa Introduction to Earth and Environmental Sciences class visit dioramas in the Museum of Natural History. Image, Jessica Smith, courtesy of the Pentacrest Museums.



Fig. 12: Students enter the *Laysan Island Cyclorama*. Image, Jessica Smith, courtesy of the Pentacrest Museums, 2019.

The *Laysan Island Cyclorama* continues to meet the teaching goals and objectives of instructors, as well. In 2024, a Human Impacts course taught through the University of Iowa's Anthropology Department created a new lab. For this semester-long assignment, students are asked to examine how past groups have had various relationships with

animals, including hunting, domestication, extinction, and indirect effects through habitat change, using the cyclorama as a case study (Fig. 12).



Fig. 13: Guests are invited to “make our museum your muse” during the museum’s well-attended monthly *Art & Write Night* program. Image, Jessica Smith, courtesy of the Pentacrest Museums, 2023.

Museum engagement is not limited to only students. Community programming initiatives such as *Art & Write Night* provide informal learning opportunities for visitors of all ages (Fig. 13). During these events, guests are invited to explore museum galleries after hours, engage in creative activities, and connect with fellow enthusiasts. The cyclorama, with its captivating scenery and immersive atmosphere, remains a highlight of such events, drawing participants into the rich history and ecological significance of the island. With programming like this, museums can create more authentic interest by not taking an educational approach at all. Prioritizing access, comfort, and community in a space where learning can unfold naturally is a pathway to awareness and absorption.

As efforts to conserve the cyclorama progress, the museum remains committed to its mission of inspiring wonder, discovery, and responsibility for our natural and cultural worlds, ensuring that its rich heritage endures for generations to come.

Author Biography

Jessica Smith has served the communications & engagement department at the University of Iowa Pentacrest Museums since 2018. Her backgrounds in sociology, art, marketing, environmentalism, and non-profit community organizing inform and contribute to her work as a museum professional. She has dedicated significant support to the *Laysan Island Restoration Fund* efforts. Smith teaches students to create access to science and history, encouraging the use of creative media, connection, and joy.

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Jack Tamisiea

At the UI Museum of Natural History, a Paradise Not Yet Lost

This article appeared previously in Iowa Magazine under the heading, *Iowa experts race to save one of the world's few remaining cycloramas, which depicts the endangered bird haven Laysan Island in its heyday*. Originally published May 31, 2022, it is republished here with permission from the University of Iowa Office of Advancement.



Fig. 1: Image of a Great Frigatebird, a prepared specimen on display in the foreground of the University of Iowa Museum of Natural History's Laysan Island Cyclorama exhibition. Image, Jessica Smith, courtesy of the Pentacrest Museums, 2022.

In the softly lit space, each bird seems primed to burst into flight at an instant. Laysan albatrosses dance, puffing their chests and pointing their beaks toward a painted sky. Nearby, a black-footed albatross lunges at a companion, while a masked booby preens fluff off its chick. On a rocky cliff, sooty terns bicker over a crab, as a dazzling red-tailed tropicbird floats above it all, surveying the hectic aviary below.

More than a century after it opened to the public, the Laysan Island Cyclorama continues to captivate visitors to the University of Iowa Museum of Natural History. Tucked away in Macbride Hall, the exhibit is a sprawling display containing more than 100 mounted seabirds, hundreds of thousands of wax leaves, and a massive mural of sweeping tropical vistas (Fig. 1). While each individual element is eye-catching, their

Jack Tamisiea, Freelance Science Writer

interplay creates an immersive experience. As visitors walk through the wood-paneled entrance, they are whisked away to Laysan Island, a wayward atoll some 4,500 miles from Iowa City.

Like most visitors, Liz Crooks (08BLS), director of the UI Pentacrest Museums, is transfixed by the cyclorama's vast scope. In recent years, however, she has found it increasingly difficult to appreciate the entirety of the exhibition. Tours with conservators have revealed flaking paint, crumbling wax, and feathers coated in soot—signs of decay from a century on display. "As magical and impressive as it is, once the conservation needs were brought to my attention, I couldn't unsee it," she says.*

To restore the Laysan Island Cyclorama—one of roughly 30 historic cycloramas still in existence worldwide—Crooks is spearheading an ambitious conservation effort. Like the distant ecosystem it depicts, the cyclorama has become an endangered environment of peeling paint and oily seabirds. "There is no lack of irony there," Crooks says. "The cyclorama is dedicated to preserving this natural space and now is in dire need of conservation itself."

And like a true ecological crisis, time is running out for the museum to restore the historic exhibit before Iowa's piece of paradise is lost.



Fig. 2: In 1911, university museum curator Charles Nutting (1896BPH, pictured above) sent Iowa students Horace Young (1911BA) and Clarence Albrecht (1914BA), zoology professor Homer Dill, and muralist Charles Corwin (all pictured at top, from left to right) on an expedition to Laysan Island to gather specimens for an exhibit. Images, archival photos courtesy of Pentacrest Museums.

*Liz Crooks is quoted here, and throughout, from a conversation with the author, Jack Tamisiea, for the purposes of this article's original publication in *Iowa Mag*, 2022.

1 More Than a Wild Goose Chase

Charles Nutting's grand vision for the Laysan Island Cyclorama was hatched in 1902, when he was half a world away from Iowa. In addition to his duties as a UI zoology professor, Nutting (1896BPH) was one of the world's foremost experts on hydroids, a suite of minute, stinging predators related to jellyfish. His expertise booked him passage upon the U.S. steamer *Albatross* during a Smithsonian expedition to the Northwestern Hawaiian Islands (Fig. 3). As they trawled the deep sea and described novel species of marine life, the scientists also explored the smattering of remote atolls dotting that stretch of the Pacific.

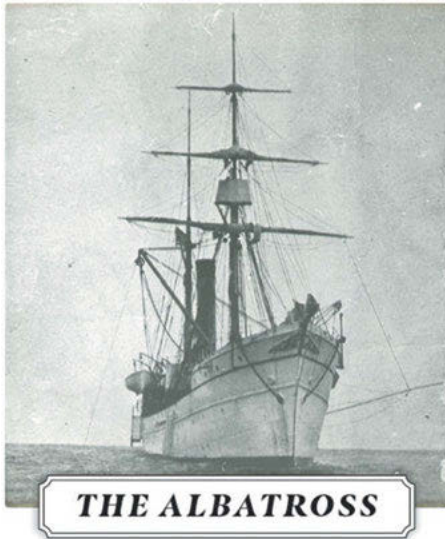


Fig. 3: Nutting first developed a fascination with Laysan Island on his 1902 voyage to Hawaii aboard the *Albatross*. Image, archival photo courtesy of Pentacrest Museums.

That was how Nutting first stepped foot on Laysan Island, a tiny outcrop of sand, coral, and little else. However, the island was far from uninhabited—millions of seabirds treated it as a stopover to breed and rear chicks. As Nutting gingerly navigated the cacophonous crowds, he was rightfully overwhelmed by the sight of 8 million birds crammed onto just 1.5 square miles of island. “For no one . . . could possibly contemplate this assemblage of avian life without being profoundly moved by the experience,” he would later write in a 1909 edition of *The Iowa Alumnus*.

Nutting wanted nothing more than to introduce his fellow Iowans to the natural splendor of Laysan. But he knew his words and grainy photographs could only do so much. Many of his readers had never seen saltwater, let alone contemplated the sight of thousands of albatrosses swaying in the tropical breeze, so Nutting undertook the ambitious task of bringing Laysan Island to Iowa.

Nutting already had a venue. In 1886, he became curator of the university's Cabinet of Natural History, the oldest academic natural history museum west of the Mississippi River. In short order, he dusted off specimens that had languished for decades in storage and launched several far-flung expeditions to collect new material. To help exhibit the museum's growing stockpile of specimens, Nutting hired the pioneering taxidermist Homer Dill in 1906.

Dill, a UI assistant professor of zoology, had never created a display approaching the magnitude of what Nutting envisioned for the Laysan exhibit. A standard diorama didn't adequately encompass the sheer spectacle of Laysan Island (Fig. 4), so they embraced an ambitious style of exhibition known as the cyclorama. Often wrapped inside a 360-degree mural, cycloramas (which are also called panoramas) were the virtual reality of their time, immersing visitors within the display. By melding the background mural with three-dimensional objects in the foreground, cycloramas gave the viewer a sense of contrast, creating the illusion of distance.



Fig. 4: Map of Laysan Island in relation to the main islands of Hawaii. Image, courtesy of University of Iowa Center for Advancement, 2022.

Cycloramas peaked in popularity in the late nineteenth century, when their sweeping displays became ideal for depicting epic military battles and whale hunts. Nutting, however, had a much different subject matter in mind. He sought to co-opt the epic vistas to capture a serene, tropical island teeming with birds instead of soldiers. The Laysan Island Cyclorama would be the first of these exhibits in the world to focus solely on a single ecosystem.

Nutting and Dill still had to procure an island's worth of birds. The cost of a Hawaiian expedition was staggering, which forced Nutting to do a decade of impassioned fundraising. To ensure Laysan remained in the Iowa City zeitgeist, he lectured and wrote frequently on the wonders he had witnessed. During one 1909 lecture, the Iowa football team even performed a skit to raise money for the expedition.

By 1911, Nutting had secured enough funding to send Dill, two Iowa students, and an artist to Laysan. They were instructed to collect everything they found, from bird eggs to lumps of coral. However, the expedition hit an unforeseen snag as soon as Dill reached the island—there appeared to be little left to collect.

The “clouds of birds” Nutting described had all but vanished. Instead, Dill’s team was greeted by bleached bones and hacked-off albatross wings—the visceral evidence that Japanese feather poachers had recently raided the island. In total, their bloody excursions had slaughtered some 300,000 birds on Laysan, including half of the island’s albatross population.

A horde of invasive rabbits had also become entrenched on Laysan. “At times there are so many ears protruding, they resemble a vegetable garden,” Dill remarked in his expedition report. Introduced by the guano miners who once harvested the island’s bird waste as a fertilizer, the rabbits were devouring Laysan’s native shrubs and grasses, stripping the island of nesting material and the roots that anchored the sand in place. As the plant coverage vanished, shifting sands buried underground nesters and the island’s insect population plummeted, dooming several species of insectivore birds found nowhere else on earth.

While circumstances initially appeared bleak, Dill’s team managed to procure plenty of material for the exhibit. Most importantly, they collected nearly 400 bird specimens representing all 23 species that frequented the atoll. As they gathered the birds, they also took aim at the island’s invasive rabbits. Dill notes in his official report that the rabbits made for good eating. However, the team only made a dent in the population, and the plague of rabbits would last until 1923. This proved too late for several endemic species of birds, like the spindly Laysan rail and the ruby-red Laysan honeyeater, who succumbed to extinction.

In total, the team used boats and trains to ship 36 crates stocked with everything from terns to gravel across the Pacific and to the Midwest. However, once Dill and the expedition’s spoils returned to Iowa City, the real work began. Utilizing his nascent museum studies program (the oldest such university program in the country), Dill and his students took years to create the exhibit. They posed 106 of the bird skins into dynamic positions around the display and molded 500,000 individual leaves out of wax. Charles Corwin, the expedition’s artist and a noted muralist at Chicago’s Field Museum, crafted a colossal mural from his field sketches. Altogether, the mural is 138 feet long and 12 feet high and depicts hundreds of birds to compliment the specimens in the foreground.

When the exhibit opened to the public in 1914, Iowans were finally able to experience Nutting’s vision firsthand. Museum visitors saw the terns and half expected to feel “the air quiver with their piercing shrieks,” as Nutting had described it. Nearby, they witnessed the bizarre spectacle of frigate birds inflating their large air sacs, which reminded Nutting of “the brilliant red toy balloons that delighted our childhood.” Corwin’s mural gave life to the “the snow-white coral sand, the dark green vegetation, and the intense blue of the tropic sky.” Together, Nutting and Dill had brought a slice of a tropical paradise to Iowa.



Fig. 5: Aerial view of Laysan Island. Image, United States Geological Survey, courtesy of University of Iowa Center for Advancement, 2022.

2 Laysan Island Then and Now

2.1 1911

While Hawaii itself was incredibly far-flung in the days before air travel, Laysan Island is distant even by Hawaiian standards (Fig. 5). Once Dill and his team arrived in Honolulu, it took an additional week of sailing just to reach Laysan. They were aboard the military cutter *Thetis* and accompanied by scientists from the U.S. Biological Survey. Over the next six weeks, Dill's team collected and prepared bird specimens for shipment, made sketches of the local environment, and surveyed the birds living on the island.

Despite its remoteness, the island had been frequented by whalers, marauding feather poachers, and even miners, who harvested the Laysan's massive stores of guano, or bird waste, for fertilizer use. One of the guano miners introduced a couple of rabbits in the hope of starting a rabbit canning business. That plan was short-lived, however, and by the time Dill arrived, the island was overrun by rabbits.

To protect the island from poachers and development, President Theodore Roosevelt christened Laysan and several nearby islands a protected bird sanctuary in 1909—just two years before Dill arrived—although the designation did little initially to deter poachers or stop the ravenous rabbits. Within a decade of the cyclorama open-



Fig. 6: Illustration of Laysan millerbird. The Smithsonian libraries, Rothschild, Lionel Walter Rothschild, Baron. *The Avifauna of Laysan and the Neighboring Islands*. Image, courtesy of the University of Iowa Center for Advancement, 2022.

ing in Iowa, three species of birds depicted in the exhibit, including the Laysan millerbird, would already be extinct (Fig. 6).

2.2 Today

Laysan Island, which is also known by its Hawaiian name, Kauō, is now part of the Papahānaumokuākea Marine National Monument. The U.S. Fish and Wildlife Service, which helps manage Laysan, calls the islands “one of the crown jewels” of the Northwestern Hawaiian Islands. Just like when Nutting visited, Laysan Island is the largest and most diverse colony in all of the Northwestern Hawaiian Islands.

While rabbits were eradicated in 1923, the island is still susceptible to harmful invaders like exotic grasses, which is why visiting the island has never been more difficult. While air travel makes these remote areas more accessible, strict restrictions are in place to limit the human visitors on Laysan to mostly researchers. Those few

human visitors also have to freeze the clothes they plan to wear in order to kill any alien seeds or insects that may have tagged along for the ride.

However, some of Laysan's new arrivals are welcome with open arms. In 2011, scientists reintroduced a population of Nihoa millerbirds to Laysan Island. While the small, drab birds are easily overlooked, their reintroduction to Laysan was a triumphant occasion because their close relative, the Laysan millerbird, went extinct a century ago due to the rabbits. The return of these tiny birds is just another aspect of the island that makes it nearly identical to the idealized paradise preserved in Iowa City.

While visiting the island is currently out of the question, Crooks and her team have discovered a way to explore Laysan from their offices in Iowa City. Thanks to Google Earth, anyone with an internet connection can view the picturesque beaches of Laysan with just a few clicks of the keyboard. The application offers sweeping 360-degree views, reminiscent of the display in Iowa. "You see these albatross chicks sitting in exactly the same way they are sitting in the cyclorama!" says Crooks. "The day that we discovered that, I don't think anyone here got any work done. We just virtually toured the island."

3 Race Against the Clock



Fig. 7: Image of a red-tailed tropicbird, a prepared specimen on display in the foreground of the University of Iowa Museum of Natural History's Laysan Island Cyclorama exhibition. Image, John Emigh, courtesy of the Pentacrest Museums, 2022.

Behind the glass, this avian paradise has remained frozen for more than a century. Brown noddies seem to bob their heads in the breeze, as petrels peek out of their burrows and bushy albatross chicks cozy up with parents. A discerning eye even catches Laysan honeyeaters bouncing from flower to flower among the throngs of boisterous seabirds (Figs. 7–8).

At its core, the Laysan Island Cyclorama is an environmental time capsule, preserving a glimpse of an island unburdened by feather poachers and ravenous rabbits. In a similar sense, the exhibit itself has also become an artifact. Over the decades, the only changes to the display have been the replacement of the original pond material and the addition of interpretive panels and speakers that project recordings of each bird's call. Behind the glass, everything is almost exactly how Nutting and Dill left it.

Unfortunately, their display has begun to wilt. The cyclorama sits in a corner of the museum's Hageboeck Hall of Birds where there is no ventilation and the temperature fluctuates wildly. According to Crooks, much of the exhibit is also covered in a fine layer of soot from when the building was lit by gas lamps. Bright white albatross feathers are now drab shades of gray. Water leakage has warped parts of the mural. Other spots are peeling. To protect the specimens from destructive pests, Dill likely used arsenic—a carcinogenic chemical that taxidermists once commonly applied to their work. Crooks believes the toxin is likely sprinkled into the cyclorama's sand and gravel.

Even the birds are causing decay. "These birds are waterfowl, so they are very oily," Crooks says, referencing how many seabirds ooze oils to keep their feathers waterproof. Though prepared a century ago, they continue to exude oil, which Crooks says dulls their colors and damages other parts of the display. In this way, Crooks contends that the cyclorama is, in essence, "destroying itself."

The growing list of eyesores may seem overwhelming. However, the museum staff stresses that a restoration project is possible if the museum can raise between \$500,000 and \$750,000 within the next five years. Establishing heating, cooling, ventilation, and humidity control is paramount to the effort, according to Jessica Smith, the museum's communications specialist.* Until the underlying environment is stabilized, brushing soot off of birds will do little good.

Smith likens the cyclorama to a "functioning ecosystem" as complex as the island environment it depicts. Each of its elements seem to affect another, making it crucial that restoration is a coordinated effort. If the museum raises the funds, they envision groups of conservators working on the cyclorama for weeks at a time, brightening up drab seabirds and cleaning Corwin's mural inch by inch.

While the effort to save it seems herculean, the Laysan Island Cyclorama retains an international importance as one of the few intact cycloramas left. As museums began incorporating film into their displays in the early twentieth century, the sprawling ex-

*Jessica Smith's comments are referenced here, and throughout, from a conversation with the author, Jack Tamisea, for the purposes of this article's original publication in *Iowa Mag*, 2022.



Fig. 8: A prepared Laysan albatross specimen on display in the foreground of the University of Iowa Museum of Natural History's Laysan Island Cyclorama exhibition. The albatross are most prominent in the exhibition, though only one of many birds depicted in the mural and foreground. Image, John Emigh, courtesy of the Pentacrest Museums, 2022.

hibits quickly went out of style and many were dismantled to make room for other attractions. The only traces of these lost cycloramas are splotchy newspaper clips.

This makes the Laysan Island Cyclorama a rarity—and cyclorama enthusiasts around the world have taken notice. In recent years, Crooks and the museum have become involved with the International Panorama Council, a Swiss nonprofit dedicated to the conservation of cycloramas around the world. In 2023, the entire cyclorama community converged in Iowa City, when the IPC hosted its annual conference at the UI Museum of Natural History. “People were willing to come from all over the world—Turkey, Luxembourg, Australia,” Crooks says. “They came here to see something that is in Iowa’s own backyard.”

Crooks hopes the exposure will aid in their effort to restore the cyclorama. To her, the exhibit is much more than an attraction; it is an educational tool that has inspired an appreciation for nature in generations of local children and UI students—including Crooks herself. “It’s a very special place to me,” says Crooks, who graduated from the museum studies program founded by Dill and has now worked in Nutting’s former office for three years. While Nutting and Dill left behind the cyclorama, Crooks hopes her legacy is tied to saving the exhibit.

We are at a critical juncture—the cyclorama needs to be conserved if it is to survive for future generations. —Liz Crooks, Director, Pentacrest Museums

However, the clock is ticking. “We are at a critical juncture—the cyclorama needs to be conserved if it is to survive for future generations,” Crooks says. She estimates that in five years, the cyclorama will likely be unsalvageable.

Like Nutting at the turn of the century, she and the museum have set out to tirelessly fundraise. Hitting the lecture circuit is no longer enough (although Smith stresses that if the Iowa football team wants to put together another sketch show, “we will gladly sponsor that”); Crooks encourages the university and alumni community to experience the cyclorama in person.

Crooks, like Nutting before her, believes that standing amid the albatrosses, terns, and shearwaters can spark a passion for the fragile nature of the distant island. She hopes that will also be enough to preserve the paradise a little closer to home.



Fig. 9: Portrait of Jack Tamisiea, author of *At the UI Museum of Natural History, a Paradise Not Yet Lost*. Image, courtesy of University of Iowa Center for Advancement, 2022.

Author Biography

Jack Tamisiea is a science writer based in Washington, D.C. who covers natural history and environmental issues. Tamisiea’s work has appeared in *The New York Times*, *National Geographic*, *Scientific American*, *Hakai Magazine*, *Johns Hopkins Magazine*, and many others. Tamisiea is also the son of Iowa alumnus John Tamisiea (87BBA) and grew up an avid Hawkeye fan (Fig. 9).

Gabriele Koller

A Story of Sad Losses: On the Fates of Some Nineteenth-Century Panoramas

Abstract: When dealing with the panorama's history one is amazed by how little original material has survived. There are mainly texts and prints, occasionally preparatory studies and drawings can be found. But considering the quantity of panoramas that once existed, it is only the tiniest proportion of the total number of panoramas that survive.

This article examines the factors that have led to the immense loss of so many panoramas that once existed. The intention is to uncover some of the fates and relate what happened, shedding new light on the tragic loss of several nineteenth-century panoramas. Essentially, this article deals with the 360-degree panorama as invented by Robert Barker in 1787.

Keywords: 360-degree panorama, exhibition, destruction, fire

1 Introduction

This story begins with a rare and most tragic photograph (Fig. 1). It shows the panorama of the Crucifixion of Christ in Einsiedeln, Switzerland, taken at the very moment when it burnt down on March, 17, 1960. Just two years later a replica of the panorama would be painted and opened in a new building (Busch Oechslin and Oechslin 1993, 58–72).

The history of the panorama phenomenon is a story of sad losses. The intention of this paper is to reveal some of the tragic incidents that have resulted in a small number of extant artifacts of a once widespread medium, and in so doing relate what happened to specific panoramas that are now lost. In the main the focus will be on the 360-degree panorama as invented by Robert Barker in 1787.

When dealing with the panorama's history in the nineteenth century one is amazed by how little original material has survived. That is especially true for the first half of the nineteenth century. There are only three panoramas that survive from this early period. One of them is Johann Michael Sattler's panorama of Salzburg, now exhibited in Salzburg, Austria (Fig. 2). For ten years, between 1829 and 1839, this panorama was toured around Europe, going from town to town. That it should have survived at all is quite remarkable (Plasser 2005, 37–62). The same applies to John Vanderlyn's panorama of the Palace and the Gardens of Versailles, which is now on

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Fig. 1: The burning rotunda of the *Panorama Crucifixion of Christ*, Einsiedeln, Switzerland. Historic photograph taken on March 17, 1960. Image, Panorama-Gesellschaft Einsiedeln, used with permission.

display at the Metropolitan Museum of Art in New York, USA, and which toured several North American cities between 1819 and 1838 (Avery, Fodera 1988, 23–34). The panorama of Thun, which Marquard Woher painted between 1809 and 1814 for the Swiss town of Basel, is the earliest surviving panorama (Fig. 3). Today it is on display in a modern rotunda in Schadaupark, Thun, Switzerland (Imhof 2009, 18–29).

Looking at London, the world's principal center of panorama production in the first half of the nineteenth century, it is striking that none of the 150 or so panoramas that were exhibited over a period of 70 years in the two-storey panorama buildings in Leicester Square between 1793 and 1863, respectively in the Strand between 1803 and 1831, have survived (Wilcox 1976, 254–265). The same goes for Paris. Here from around 1800 onwards only about 30 panoramas were exhibited within the same period, far less than in London. None of those survive either (Robichon 1982, 355–429).

What happened to all these panoramas and why is so very little known about their fates? The answer lies in the uniqueness of the panorama as an art form. Panoramas were created for the purpose of being exhibited to a paying public in buildings designed for the purpose. When public interest in a particular panorama waned, it would be replaced by a new one. If there was a demand for it somewhere else, it would be transported to that place and exhibited there. Being rolled, unrolled, and re-



Fig. 2: Johann Michael Sattler, artist (Austrian, 1786–1847). *Panorama of Salzburg*, 1825–1829. Oil on canvas. 48.2 × 25.8 m (15 ft 10 in × 84 ft 8 in). View from the visitors' platform. Image, the author.

erected again and again the panorama canvases suffered and, if not restored or repainted, they slowly deteriorated. When, for example, Robert Barker's panorama of London was shown at the Easter Fair in Leipzig in 1800, it was already in a worn-out condition, much complained about by the contemporary press (*Journal des Luxus und der Moden* 1800, 280–281).¹

2 Storms, Fire, and Other Catastrophes

From the very beginning, panoramas went on exhibition tours. By doing so they were exposed to dangers in many ways. Shipping was a convenient way of transporting huge panorama canvases, but it was fraught with dangers. Shipwrecking was one of them. In 1805, for example, when Pierre Prévost's panorama of Paris, after an extensive exhibition tour, returned to France from its last exhibition venues in St. Peters-

¹ "Ostermesse 1800 zu Leipzig. Leipzig, den 20. May 1800." *Journal des Luxus und der Moden*, June 1800, 278–282. Weimar: Verlag des Industrie-Comptoirs.



Fig. 3: Marquard Woher, artist (Swiss, 1760–1830). *Panorama of Thun*, 1809–1814. Oil on paper on canvas. 7.5 x 38.3 m (24 ft 7 in × 125 ft 8 in). View from the visitors' platform. Image, the author.

burg and Moscow, the ship in which it was being transported sank near the French coast taking with it the panorama (Robichon 1982, 365). In 1812, a German journal reported that while Prévost was just finishing his eleventh panorama depicting the town of Antwerp, three or four of his earlier panoramas had vanished, one of them in the river Rhône, due to shipwreck (*Morgenblatt für gebildete Stände* 1812, 304).²

Weather calamities such as heavy storms could cause the destruction of a panorama. Not all panorama rotundas were solid structures like the panorama building in Leicester Square. Many of them were simple wooden buildings, often too fragile to withstand a heavy storm. On December 31, 1808, the Edinburgh newspaper, *Caledonian Mercury*, reported “that the large temporary building erected on the north end of the Mound, for the purpose of exhibiting the panorama of the battle of Trafalgar [it might have been Barker’s panorama], was blown down, and the painting totally destroyed.”

However, the most common cause of panorama destruction was fire. From 1818 to 1819 a panorama of Athens was exhibited in London at the panorama building in the Strand. The building at this date was run by Robert Barker’s son, Henry Aston Barker, with John Burford. During, or shortly after its exhibition the panorama of Athens was acquired by Theodore Lyman of Boston who presented it to Harvard University. In 1820 the panorama was shipped to Boston (*Daily National Intelligencer*

² “Korrespondenz-Nachrichten. Paris.” *Morgenblatt für gebildete Stände*, no. 76, March 28, 1812, 304. Tübingen: Cotta.

1819; *Boston Intelligencer and Evening Gazette* 1820).³ In 1821, in order to raise money for a permanent exhibition building at Harvard University, it was exhibited in a circus building in Boston (*Boston Daily Advertiser* 1821).⁴ From 1825 to 1827, John Vanderlyn, the American panorama painter and entrepreneur, showed it in his panorama rotunda in City Hall Park, New York (Mondello 1990, 65–67). After being rolled up and stored for several years it was again on exhibition in the summer of 1837, at the Boston Riding School—i.e. still not in a purpose-built rotunda (*Boston Courier* 1837).⁵ Finally, in August 1843, after more than 20 years, it was properly exhibited in a building constructed for the purpose, near Harvard College. For financial reasons it was made of wood. The sad story is that only two years later the new building caught fire and was totally destroyed. The press reported about the desperate attempts to save the panorama:

[The fire] extended to the Athenæum building, put up a few years since at an expense to Harvard College of over \$3,000 for the reception of the Panorama of Athens. Every exertion was made to save the splendid painting without avail—it was taken down and rolled up, but no passage way sufficiently large to admit of its removal could be made before the spread of flames rendered it too late (*Milwaukee Daily Sentinel* 1845).⁶

Thus ended the story of one of Barker's panoramas.

The example demonstrates that panoramas were sometimes put into storage for long periods. Storage buildings were often simple barns or warehouses which could easily be affected by fire, too. Another London panorama, Henry Aston Barker's *Attack of the Allied Forces on Paris, March 30, 1814*, also named *Battle of Paris*—considered to be the final defeat of Napoleon—was destroyed in that way after a successful exhibition tour.

Originally from 1815 to 1817 it was exhibited in the upper circle of the panorama building in Leicester Square (Fig. 4). It was then acquired for North America, probably by John Vanderlyn. It was first shown in Charleston in early 1818 (*City Gazette and Daily Advertiser* 1818).⁷ From late 1818 to spring 1819 it was exhibited in New York, and in 1820 again briefly in Charleston where it was offered for sale (*National Advocate* 1818; *New York Evening Post* 1819; *Commercial Advertiser* 1819; *Boston Intelli-*

³ "Panorama of Athens." *Daily National Intelligencer*, October 30, 1819; *Boston Intelligencer and Evening Gazette*, May 6, 1820.

⁴ Advertisements for its exhibition at Roulstone's New Circus, Mason-street, Boston, in *Boston Daily Advertiser*, September to October 1821.

⁵ Advertisements for its exhibition at the Riding School, Boston, in *Boston Courier*, July 3, 1837; September 7, 1837.

⁶ "Incendiaries at Cambridge." *Milwaukee Daily Sentinel*, June 18, 1845 (Report from *Boston Traveller*, June 6, 1845).

⁷ Report about the opening of the "Magnificent Panorama of the Battle of Paris" at concert-hall enclosure, Charleston, in the evening of March 10, 1818, "with a Band of Music." *City Gazette and Daily Advertiser*, March 10, 1818.



Fig. 4: James Adlard, printer (British). *Description of the Representation of the Battle of Paris, Fought on the 30th of March, 1814, 1815.* Engraving on paper. 32.5 × 25.0 cm (12.8 × 9.5 in). Key to the panorama of the Battle of Paris by Henry Aston Barker, exhibited at the Leicester Square Panorama London, 1815–1817. Image, author's collection.

gencer and Evening Gazette 1820).⁸ Mr. Worrall, its purchaser, intended to exhibit it in Boston but being unable to find a convenient exhibition building, he stored it in a wooden storage building belonging to the Boston Theatre. There it was destroyed by fire in January 1821 (*Boston Daily Advertiser* 1821).⁹

Another risk for panoramas was artificial lighting. According to Barker's patent 360-degree panoramas were to be exhibited in daylight. However, experiments with artificial light to illuminate panoramas in the evenings and in winter time were being made almost from the start, including by Barker himself. In 1789 when the world's very first panorama, Barker's *View of Edinburgh*, was being exhibited in London in a "spacious room" in the Haymarket, Barker announced in an advertisement that it would be "at all times shewn by the light of lamps (*Times* April 15, 1789)." Barker may have used oil lamps, as gas light was not introduced in London until the 1810s.

For the panoramas shown in the rotundas built for the purpose in Leicester Square and in the Strand, it seems that artificial light was scarcely or even never used. Barker and his successors put the safety of their panoramas first. They insured them with the Sun Fire Office, the records of which are kept in the London Metropolitan Archives, formerly Guildhall Library.

In 1838 the artist and explorer Frederick Catherwood opened New York's second permanent panorama rotunda, corner of Prince and Mercer Streets, Broadway (Fig. 5). The first one, John Vanderlyn's rotunda in City Hall Park, had not been used as a panorama exhibition building since 1829. Unlike Vanderlyn, Catherwood made extensive use of gaslight to illuminate the panoramas he exhibited (up to 200 gas lights were employed). Catherwood's rotunda, a two-storey brick building, was modeled on the Barker/Burford rotundas in London. Despite its solid walls it lasted for only four years. In the evening of Friday, July 27, 1842, shortly after Catherwood himself closed the building, the press reported that

it was discovered to be on fire, and in less than half an hour, owing to the combustible state of the paintings and other materials in it, the interior was entirely consumed including the splendid panoramas of Jerusalem and Thebes . . . The walls of the building remain standing, although the heat was so severe that they cracked open in several places. The inside of the building, with the circular wall enclosing the flames after the roof had fallen in, presented the appearance of an immense fiery furnace (*New York Herald* 1842).¹⁰

⁸ In New York the Panorama *Battle of Paris* was exhibited in John Vanderlyn's panorama rotunda in City Hall Park, December 1818 to April 1819. From June to November 1820 its exhibition venue was the Circus in Charleston. For New York see advertisements in *National Advocate*, New York, December 25, 1818; December 28, 1818; *New York Evening Post*, February 22, 1819; *Commercial Advertiser*, New York, April 5, 1819. For Charleston see advertisements in *Boston Intelligencer and Evening Gazette*, May 20, 1820; August 26, 1820; November 6, 1820.

⁹ *Boston Daily Advertiser*, January 22, 1821. The report wrongly claims that two panoramas were lost in the fire. As the panorama *Battle of Paris* was often advertised as "Battle and View of Paris" this might have led to the assumption that two panoramas were destroyed.

¹⁰ "Destruction of the rotunda by fire," *New York Herald*, July 30, 1842.

The press speculated why the fire had broken out, but it was almost certainly caused by the fracture of the main gas pipe, “branching out into an immense number of small tubes, for the purpose of highly illuminating every part of the picture (*New-York Spectator* 1842).”¹¹

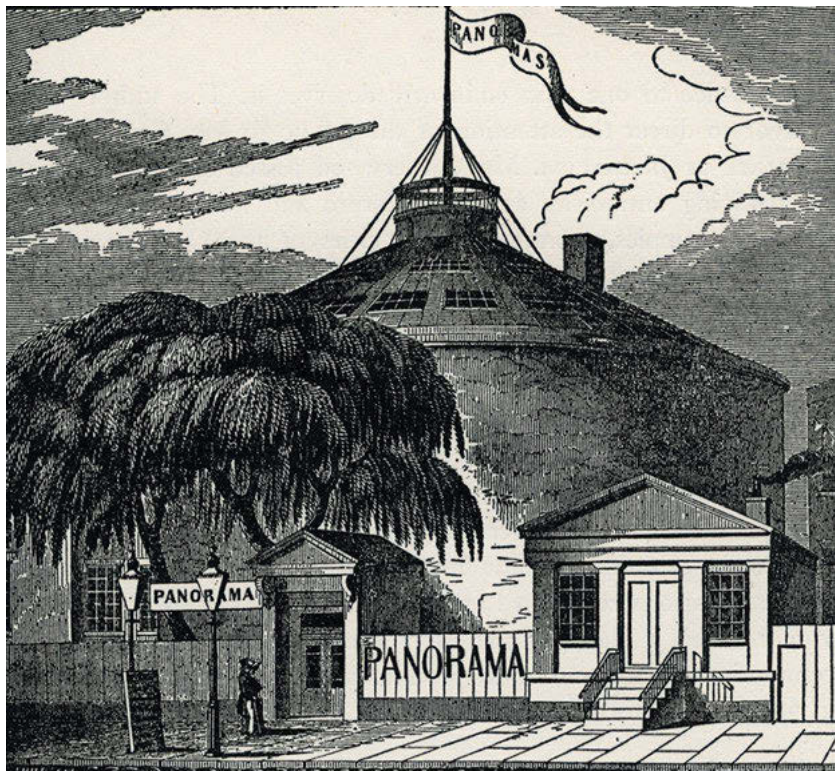


Fig. 5: Frederick Catherwood's panorama rotunda on Broadway, New York, 1838–1842. Illustration from a contemporary advertisement. In Victor Wolfgang von Hagen, *Frederick Catherwood Architect*. 1950. New York: Oxford University Press, 49. Author's copy. Image, the author.

The fire destroyed the two panoramas that were currently on show—the *View of Jerusalem*, and the *View of the Great Temple of Karnak and the Surrounding City of Thebes* (Fig. 6), both of which had been painted by Robert Burford in London and based on drawings by Catherwood. The fire also destroyed two other panoramas by Robert Burford that were in store at the building at that moment, the *View of Lima* and presumably the *View of the Falls of Niagara*. The fire was a severe financial loss to Catherwood who was pitied by the press in the following conundrum: “Why is Mr. Catherwood,

¹¹ “Mr. Catherwood's panoramas,” *New-York Spectator*, August 6, 1842.

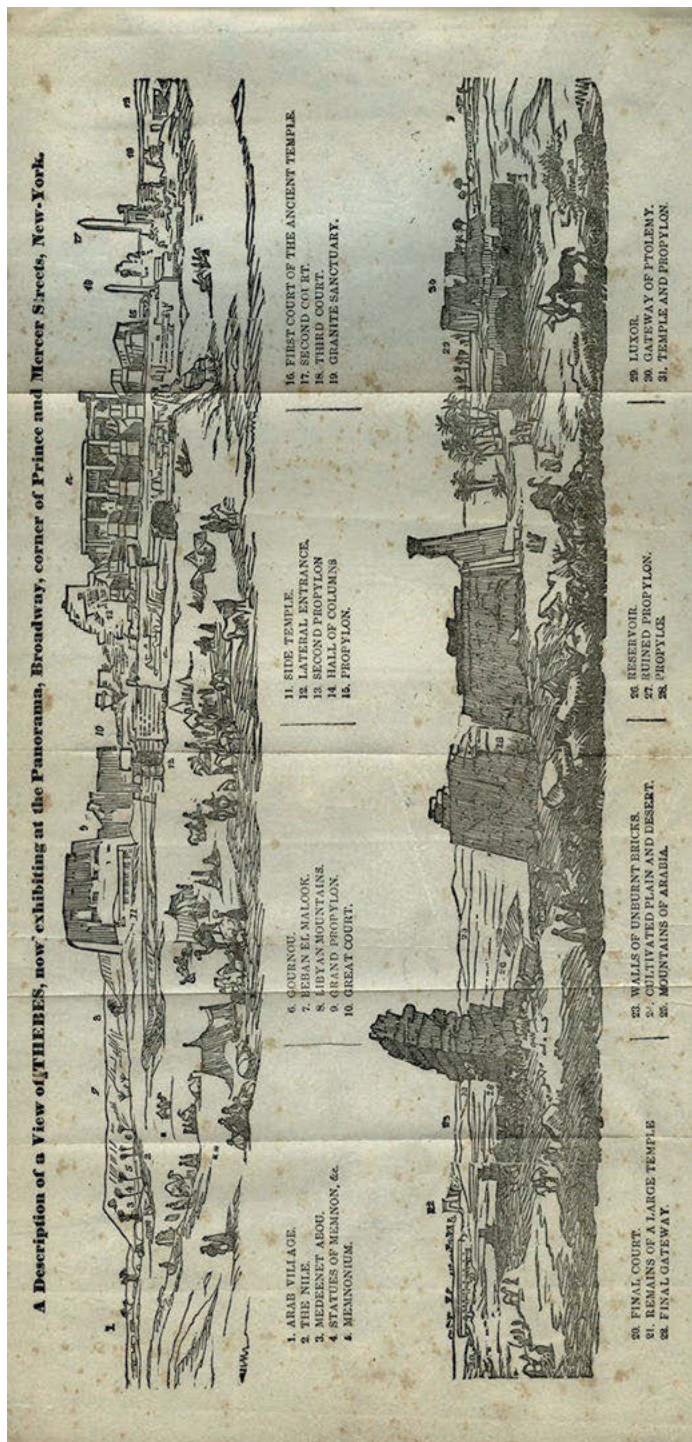


Fig. 6: William Osborn, printer (American). *A Description of a View of THEBES, now exhibiting at the Panorama, Broadway, corner of Prince and Mercer Streets, New-York, 1839.* Etching and aquatint on paper. 22.0 × 42.3 cm (8.7 × 16.6 inches). Key to the panorama of Thebes by Robert Burford, exhibited at the Panorama, Broadway, New York, 1839–1840. Image, author's collection.

since the burning of his Panoramas, like an orphan child? Because he has not a Pa-nor-a-ma (*New York Herald* 1842).¹²

Another cause for the destruction of panoramas was war. When Vienna was occupied by Napoleon in 1809 William Barton's panorama rotunda standing in the amusement park of the Prater was destroyed, and also the panorama of Prague that was on exhibition at that time (Oettermann 1980, 226). The colored engraving (Fig. 7) shows the rotunda before its destruction, with a camera obscura on top of the roof. A new rotunda was promptly built on the same site, with the camera obscura on top of a small annex building.



Fig. 7: Johann Jaresch, engraver (Austrian). *Vue du Panorama au Prater*. Undated [c. 1810]. Colored engraving on paper. 7.5 × 10.8 cm (3 × 4.3 inches). Vienna: Maria Geissler. *Collections de Vues des Principaux Palais, Eglises, Bâtiments Publics, Campagnes & Jardins Tout de Vienne que de ses Environs*. Image, author's collection.

¹² "News," *New York Herald*, August 16, 1842.

3 Saving the Canvas

The panorama losses which have been described so far were all caused by tragic events over which the artist, owner or exhibitor had no control. The chances of damage when panoramas were on tour were considerable. But these catastrophes do not explain the losses of all panoramas that have disappeared. Panoramas could disappear that were only exhibited at a single venue. What happened to them?

There are contemporary sources which describe that these panoramas were painted over with new panoramas thus saving the precious canvas for the new image. A French traveler reported on his visit to the panorama of Malta in London, Leicester Square, on May 16, 1811:

There are new panoramas this year at Mr. Barker's, as admirable as those he exhibited the last. We have just seen Malta . . . We learned, with much regret, that the panorama of Dover, which we admired so much last year, was painted on this identical cloth. Malta is laid over Dover, and Dover covers half-a-dozen more *chefs-d'œuvre*! (*Journal of a Tour and Residence in Great Britain* 1815, 193–194).

Painting a new panorama over an existing one was perhaps more common than previously thought. The French panorama painter Charles Langlois is known to have over-painted at least one of his panoramas, the *Siege of Algiers* exhibited in Paris, Rue des Marais, 1833 to 1834. Within six months Langlois covered it with the *Battle of Moscow* exhibited in the same Paris rotunda from 1835 to 1839 (Zarobell 2003, 644).

Barker himself made recommendations on how his panoramas could be re-used (Fig. 8). As early as 1803 he advertised the following text in the printed key to one of his panoramas exhibited in Leicester Square:

In order to preserve from Destruction some of those interesting PAINTINGS which have met with general Approbation, at the PANORAMA, *Leicester-square*, Mr. Barker wishes to dispose of them, in such Proportions as Gentlemen may choose, according to the Length and the Height of the Place they intend to occupy. BEAUTIFUL VIEWS may be obtained, of a reasonable Size, for a Hall, a Gallery, Staircase or Termination of a Walk, without injuring the Effect of the Painting; and

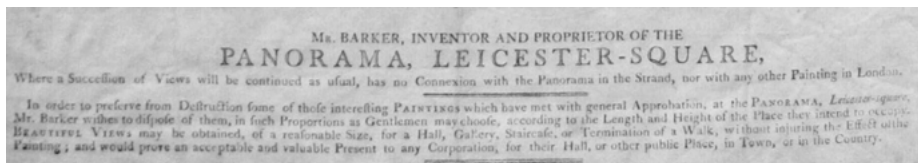


Fig. 8: James Adlard, printer (British). *View of Paris*, 1803. Engraving on paper, 40.1 × 39.1 cm (15.8 × 15.4 inches). Key to the panorama of Paris by Robert Barker, exhibited at the Leicester Square Panorama London, 1803–1805 (detail). Image, author's collection.

would prove an acceptable and valuable Present to any Corporation, for their Hall, or other public Place, in Town or in the Country (Barker 1803).¹³

A similar suggestion for preserving panoramas was made in 1836 by Colonel Francis Maceroni, soldier, balloonist, author, inventor, and lover of the arts and of panoramas in particular. In an article in the *Mechanics' Magazine*, he complained that most of Burford's panoramas were being destroyed after the end of exhibitions, mainly because of the re-use of the canvas for new panoramas. He might have been aware of or inspired by Barker's recommendation of about 30 years earlier: "But are there not thousands of wealthy individuals in this country," Maceroni challengingly asks,

besides corporations, societies, and unions, who might easily erect a proper recipient of old timber and planks (well coal-tarred), and who . . . by merely giving new canvas for old, to the Burfords, &c., might secure to themselves and to posterity the contemplation of objects whose interest would endure to the latest generations? I have often thought if I were the possessor of a park and plenty of timber and money, and but a grain of sense and feeling, how I should delight in setting up these discarded panoramas in certain parts of my premises. The Bay of Naples for a dining-room; the Falls of Niagara in one corner of the domain; the battle at which I had, perhaps, been present in another; eat macaroni in the midst of the ruins and pictured walls of Pompeii; quaff Falernian wine, surrounded by a view of Baja, Puzzoli [sic], and the Elysian Fields, where it grows; or descant on the volcanic phenomena, with an eruption of Vesuvius or Etna, before our eyes (Maceroni 1836, 311).

4 Conclusion

It is not known whether ideas like these were realized in the first half of the nineteenth century. A small digression may therefore be allowed to look at a late-nineteenth century panorama which was destroyed yet in part survives. In Paris, Henri Gervex and Alfred Stevens painted a panorama entitled *L'Histoire du Siècle* for the Paris World Fair of 1889. The panorama celebrated the last 100 years since the storming of the Bastille in 1789 by assembling 641 famous personalities in a single scene. It was the most popular panorama of the World Fair. Once the Fair was over the two artists tried to persuade the French government to purchase it. They were unsuccessful. Two offers were received from Berlin but they were turned down for patriotic reasons. Finally, in 1896, the panorama was cut up into pieces and distributed to the shareholders of the panorama company, each fragment signed by the two artists. In all there were 65 fragments. Around 16 can be located today (Derrey-Capon 2009, 135–163, 182–184).

While more is known about the fates or whereabouts of late nineteenth-century panoramas, the story of the panorama of the first half of the nineteenth century has been written in a book with many pages still left blank. The fact that almost all early

¹³ Quoted from the key to Robert Barker's panorama *View of Paris*, 1803, Leicester Square, London. London: James Adlard. Author's collection.

panoramas are lost today is owed to the special character of the panorama as an exhibition form. Mobility was a central and modern feature of the panorama from the very beginning. However, the exchange of pictures for new ones in purpose-built exhibition rotundas and the extended, sometimes even worldwide exhibition tours meant an increased risk of losses. In this sense, the panorama's modernity has proved to be both a curse and a blessing.

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 New York Evening Post
 New York Herald
 New-York Spectator
 Times (London)

Suzanne Wray

The Kilauea Cyclorama: More than a Picture, a “Spectacular Cyclorama”

Abstract: The cyclorama of Hawaii’s Kilauea Volcano was first displayed at Chicago’s World Columbian Exposition of 1893 on the Midway Plaisance. This depiction of “the inferno of the Pacific,” accompanied by a Hawaiian village with musicians and dancers, was intended to promote tourism to Hawaii, gain support for American annexation of the islands and, of course, generate a profit for the cyclorama company that created it. Newspaper articles emphasized that there would be much more to the exhibition than the “mere painting and relief foreground” of previous cycloramas. Instead, “every device known to theatrical mechanism and electro-pyrotechnics” would be used: simulated volcanic eruptions, shifting lights, fire effects, and escaping steam. Some of these scenic effects were produced by a Triple Arc Light Stereopticon that had been constructed for use in the panorama.

The artist who created the cyclorama, Walter Burridge (1857–1913), a Chicago scene painter, had visited Hawaii two years earlier to see the volcano in eruption and take photographs and sketches. Among those working with him was C. H. Ritter, credited with modeling the foreground and lava. The Kilauea Cyclorama would later appear in several other expositions, including the 1894 Mid-Winter Fair in San Francisco, California.

Keywords: World’s Columbian Exposition, special effects

The original Volcano of Kilauea is on the Island of Hawaii, in the Hawaiian Islands, two thousand miles southwest of San Francisco. It is located 14 miles from the sea at an elevation of 4,000 feet, on the flank of Mauna Loa, which rises to a height of over 13,000 feet. The new Volcano of Kilauea is on the Midway Plaisance, opposite old Vienna (Smith, 1893, 49).

Those words were written in 1893. The “new volcano” was a “cyclorama,” a huge circular panorama painting 400 feet long by 50 feet high, housed in a rotunda on the Midway Plaisance, the separate “amusements” strip of the World’s Columbian Exposition in Chicago, Illinois. Although intended to commemorate the 400th anniversary of Columbus’s “discovery” of the New World, the fair opened in 1893, rather than in 1892.

The Kilauea Cyclorama was created at a pivotal time in cyclorama production: more landscapes were being painted and fewer battles; cycloramas were increasingly being created for large temporary expositions, including world’s fairs; and “spectacu-

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Fig. 1: Kilauea Cyclorama Building, Midway Plaisance, Chicago, 1893. From *The Dream City: A Portfolio of Photographic Views of the World's Columbian Exposition*. With an introduction by Halsey C. Ives. St. Louis, Missouri: N. D. Thompson Publishing Co. Image, HathiTrust, Public Domain, Google-digitized.

lar” effects had become common additions to the circular paintings. Politics and profits had always been a part of the panorama business, and they would not be absent from the saga of the Kilauea Cyclorama.

1 World's Columbian Exposition, Chicago, Illinois, 1893

The Kilauea Cyclorama was housed in a rotunda said to be the largest cyclorama building in the world: 135 feet in diameter, 16-sided, with walls 58 feet high and a roof supported by an iron column (Fig. 1). Like many of the buildings of the fair's “White City,” it was a temporary structure. The statue at the entrance, designed by Mrs. Ellen Rankin Copp, represented Pele, the Hawaiian goddess of fire. Although it appeared to

be sculpted in stone, it was actually carved in wood and covered in "staff," a sort of stucco composed of plaster and jute fiber.

After paying 50 cents for admission, visitors walked through a passageway that depicted volcano blowholes and lava tubes to reach the viewing platform which placed them in the crater of the volcano. Standing there, on a floor made from actual lava rock from Kilauea, they were surrounded by "lakes of fire" and liquid lava, looking up at the heart of the volcano, and the foreground of caverns and ragged side walls. They gazed upward at the heart of the volcano rather than standing on the brink as visitors to the real volcano would. The top of the painting showed the horizon and surrounding countryside. Periodically, a man dressed as a priest climbed the cliffs at the top of the painting, chanting an invocation to the fire goddess. Dummies and painted figures, perhaps representing tourists, were placed on the cliffs in the foreground.

Simulated volcanic eruptions featured flashes of colored lights and the detonation of "bombs and crackers." The fire effects were created by electricity "in the most ingenious and complicated contrivances," surrounding visitors with "a hissing, bubbling sea of lava, with tongues of flame and clouds of steam" (Bancroft 1893, 854–55). Some of the scenic effects were produced by a McIntosh Triple Arc Light Stereopticon, made specially for the Kilauea cyclorama. The Chicago manufacturers' catalog detailed the electric current and other technical details; the three lamps could be used one at a time or all at once (*Illustrated Catalogue*, 1895, 44).

Not everyone was enthusiastic about the Kilauea Cyclorama and its effects: *The Book of the Fair* described the volcano panorama as a work inferior to the panorama of the Bernese Alps, also located on the Midway. The volcano painting was "not without merit," but its effect was produced not by the quality of the painting but "largely by electric lights, pyrotechnics, and other mechanical contrivances" and had "studied but not artistic realism" (Bancroft 1893, 854).

Lorrin A. Thurston (1858–1931), the son of white missionaries and a lawyer in Hawaii, was involved in its government up to 1890, including serving as minister of the interior, and had become interested in the volcano and promoting tourism in Hawaii. The upcoming Columbian Exposition was viewed as an unparalleled opportunity to advertise Hawaii and its advantages. The Kilauea Volcano House Company, formed in 1891, bought the historic Volcano House Hotel, and the Hawaiian Bureau of Information was organized in 1892 "to encourage and induce tourist travel; the immigration of desirable population; the settlement of the country; the creation of new industries; [and] to encourage the establishment of hotels, sanitariums and other resorts in the Hawaiian Islands for the entertainment of tourists, the care of invalids and others seeking recreation or health" (Kuykendall 1967, 115). Annexation of the islands was promoted to remove them from the control of native Hawaiians; five months before the Columbian Exposition opened, Hawaii's constitutional monarchy was overthrown. Thurston formed the Cyclorama Company and contracted with scenic artist Walter A. Burridge to paint the Kilauea panorama for the fair (Kuykendall 1967, 115).

A volcano panorama painting was not without precedent: a “Volcano School” of painting already existed on the islands. Jules Tavernier was the best known of the so-called volcano painters. Born in Paris in 1844, he arrived in Hawaii in 1885 and painted Kilauea many times. He had even painted a small panorama of Kilauea, titled *Hawaii’s Wonder*, that was 11 or 12 feet high and 90 feet long. Described as “nearly circular,” the painting was put on display in 1886, first in a skating rink in Hilo, then in a circular tent in Honolulu. It was not a success: there were complaints that the viewing platform was too small and too hot, and there were flaws in the perspective of the painting. Admission prices were reduced to no avail. Plans to exhibit the painting in the United States and London were abandoned when the panorama was claimed by a creditor, put into storage, and lost (Forbes, 1992, 179–80).

Walter Burridge (1857–1913) had experience in painting panoramas and was a well-known scenic artist working in Chicago when he was given the job of painting Kilauea. He spent several months in Hawaii taking sketches and photographs, accompanied by a newspaper writer, Clarence A. Webster (nicknamed “Conflagration Jones”) of the *Chicago Inter-Ocean* newspaper, who had been hired by the Volcano House Company to write a series of articles. Upon his return from Honolulu, Burridge, still suffering from a rough sea voyage, proclaimed that he had contacted Chicago to buy all the red and yellow paint available for his depiction of Kilauea which would “astonish the world [. . .] ‘The smoke, the steam, the fire, and the running lava will all be vividly portrayed just as I found it’” (“News by the American Mail,” 1892). He claimed that the building and the painting would cost about \$75,000: not a problem for the organizers. *The American Architect* described the artist painting the “Inferno of the Pacific” using a pair of mules to pull the movable painting scaffold around the circular track inside the panorama building (“Painting by Mule-Power,” 1893, 175). Among the artists working with Burridge were Oliver Dennett Grover (1861–1927), who had worked on the Chicago Fire panorama, and C. H. Ritter, who was credited with creating the foreground *faux terrain* for Kilauea.

Hula dancers and native singers were also part of Hawaii’s exhibit at the fair. By June of 1893, Thurston estimated that the Kilauea cyclorama had been visited by 2 percent of the visitors to the fair, or 20,000 people, despite bad weather in May. Each visitor had received a pamphlet designed to promote tourist travel to Hawaii; one newspaper commented that with the cyclorama and liberal advertising “it will be money in the pockets of everybody” (*Hawaiian Gazette*, June 6, 1893).

2 California Midwinter Fair, San Francisco, California, 1894

It was not long before the “new” volcano erupted again, this time at the California Midwinter Fair in San Francisco, California. One of the organizers of the Chicago fair had learned that some of the foreign exhibitors wished to continue exhibiting their

goods in the United States, and it occurred to him that his state might benefit. A meeting was held in late May 1893 and, within a month, the Midwinter Fair was organized and a site chosen. Many of the Midway shows, including the Kilauea Cyclorama, were transferred to San Francisco when the Chicago fair closed. By October Thurston had a contract to erect a rotunda in California, and in December the *San Francisco Call* (December 17, 1893) published a story describing the installation of the huge painting in the building. On January 12, 1894, the Kilauea Cyclorama was opened to private view. Called an “electro-scenic spectacle,” it was proclaimed a great success, having been improved upon in many ways (unspecified) since it was shown in Chicago. A “Hawaiian Village” was added, inhabited by native Hawaiians, and native dancers, singers, and a band also appeared (*San Francisco Morning Call*, October 25, 1893). The volcano cyclorama was profitable in San Francisco; after the exposition, E. W. McConnell, who had been general agent for the Hawaiian exhibit and was later known as the “panorama king,” purchased the Kilauea concession from Thurston (*San Francisco Morning Call*, October 25, 1893).

3 Boston, 1895

In 1895, William F. Sesser, the manager of the volcano cyclorama, arranged for the painting to be shown in Boston, having failed to find a location to show it in London or Paris. The Boston City Council granted a permit to exhibit it at the Casino Building for the season ending August 1, 1895; the Casino Building was the panorama rotunda in which one of Paul Philippoteaux’s Gettysburg paintings had been displayed. Kilauea’s spectacular effects were reported as “a very realistic scene enhanced by pyrotechnic displays, colored electric lights and other mechanical aids.” Electrical effects were to be given every hour, presumably a simulated volcanic eruption. The educational value of the exhibit was also touted; a Harvard professor had brought his geology students to study the cyclorama formations so accurately depicted in the exhibition.¹

An attempt to show the panorama at the Trans-Mississippi Exposition in Omaha, Nebraska, in 1898 failed. The painting was in storage in Boston; it was to be shipped in two rail cars and a building erected to house it. But when one of the organizers of the Hawaiian company arrived in the United States, he found that the chosen site had been given to another attraction. An offer to place the cyclorama on the Midway was rejected: Kilauea would not be shown with “cheaper and lesser attractions” (*Hawaiian Gazette*, May 6, 1898; May 13, 1898).

¹ The information in this paragraph was drawn from an article consulted in 2005 on a previous version of the website of the Boston Center for the Arts (bostonarts.org) but no longer available.

4 Pan-American Exposition, Buffalo, New York, 1901

In 1901, at Buffalo's Pan-American Exposition, the Kilauea painting was viewed as "interesting as illustrating to the people of the United States what a wonderful sheet of fire they have annexed" (Barry 1901, 52) for Hawaii had become a territory in 1898. In the tradition of panorama reporting, the *Hawaiian Star* (December 29, 1900) described sketches "made on the spot" and the impossibility of detecting where the painting ended and the foreground began. The newspaper also described the special machinery used in the cyclorama: "In the fissures and chasms and grottos steam will hiss and actual flame will appear; colored lights will intensify the effect and the brilliant colors of the painting. The rolling of lava is to be produced by means of a particular kind of paper moved and regulated by machinery." The Hawaiian Village was also exhibited, showing "picturesque and strange customs of ancient Hawaii" (*Hawaiian Star*, December 29, 1900).

The Battle of Missionary Ridge, a Civil War battle panorama owned by McConnell and billed as an "electric cyclorama," was also at the exposition, as was the Santa Fe Railroad's "electric diorama" of the Grand Canyon of Arizona. This, one newspaper wrote, might be a revelation "to those who imagine the great Southwest is still inhabited only by the red men and the cowboy" and would be a good advertisement for the territory between Chicago and the Pacific Coast (*Daily Herald Standard Union* [Brooklyn, NY], June 19, 1901).

5 Promoting Travel

The Kilauea Cyclorama showed visitors a landscape and a spectacular one at that. Although landscapes were among the earliest panoramas painted, in America the most popular cycloramas depicted battles of the Civil War, which had ended in 1865. What Gordon L. Jones (2015) described as a "period of historical hibernation" ended twenty years later when popular interest in the war led to the creation of many battle panoramas, with Philippoteaux's *Gettysburg* the most successful—one of the four versions he painted was still attracting visitors in Chicago in 1893, ten years after it opened. The battlefield itself became a national military park in 1895. The Gettysburg Cyclorama in New York City was the location of a reunion of Union and Confederate veterans in 1888, with the painting closed to the public that evening.

As the Civil War receded into memory, more landscapes and fewer battles were painted. These new cycloramas aimed at giving spectators the sense of "being there," which had always been the goal of the panorama. But they promoted "going there" as well: not just traveling virtually but by steamboat or railroad to see the real thing. The transcontinental railroad had been completed in 1869, and railroads were eager to expand their tourist business. Earlier cross-country travelers had "discovered"

some of the country's spectacular landscapes, and there was growing interest in representing the country's spectacular landscapes at World Fairs and similar exhibitions, both to educate the public and promote travel.

In 1890, artist Albert Bierstadt had proposed a panorama for the Chicago fair, suggesting that a stump of one of California's giant sequoia trees could be obtained, hollowed out, and transformed into a panorama of Yosemite Valley, on the principle of the Gettysburg cyclorama (*New York Press*, September 26, 1890). A Yosemite Valley panorama was actually painted in California by C. D. Robinson and shown in San Francisco in 1894, having been completed too late to be shown at the Chicago fair. (Ironically, it was painted in the old Gettysburg panorama building in San Francisco.) Unprofitable, the painting was put in storage.

William Wehner (1847–1928) was a successful panorama promoter. German-born, he had recruited German artists to paint panoramas in Milwaukee, producing *The Battle of Atlanta* and *The Storming of Missionary Ridge*, among others. Wehner had moved to California's Santa Clara Valley, becoming the proprietor of a vineyard and a leader in the development of the wine industry there. In 1890 he suggested that the upcoming fair could house a panorama of the Santa Clara valley that would depict the area's agricultural and mineral products; it would be “similar to those of the great battlefields which have been so interesting to the public and attracted so many thousands of visitors in every large city in the union.” Wehner was able to detail the cost of the building and canvas and the total outlay that would be required (*Chicago Inter-Ocean*, July 16, 1890).

6 A World in Motion

The Kilauea Cyclorama opened in 1893 when downtown Chicago had three panorama buildings. *The Battle of Gettysburg*, *Jerusalem on the Day of the Crucifixion*, and the *Chicago Fire* (which closed in the fall of 1893) could all be visited by those attending the World's Fair. But, as Erkki Huhtamo (2015) wrote in *Illusions in Motion*, “the late nineteenth century was a world in motion [. . .] No matter how impressive the circular panoramas may have been, they were also anomalies; enormous relics from a world that was no more. As the end of the century approached, panoramas were increasingly enhanced by the latest technology” (306).

The latest technology was electricity: by the late nineteenth century, electric lighting—both arc and incandescent light—was increasingly used in cities. Nevertheless, Chicago had a million people in 1892, and fewer than five thousand reportedly used electricity. Electricity was viewed as “modern,” a symbol of progress. The words “electric” and “electricity” were used as “immersive” and “interactive” are employed today.

At World's Fairs and similar expositions, the buildings housing electrical and mechanical machinery were erected as attractions, and visited by the public, rather than being relegated to the background and hidden away. The Mid-Winter Fair had a great "electrical fountain" nearly 300 feet tall and studded with 5000 incandescent light bulbs. The 1901 Pan-American Exposition's centerpiece was an Electric Tower, 300 feet tall. And electricity could provide more than light: Edison's phonograph used it to add sound. The *Gettysburg* panorama in New York City added a phonograph to the exhibition in 1889 to provide music and replace the human lecturer. This was a great success.

A Boston newspaper wrote "heretofore in viewing these productions [panoramas], one has had to be satisfied with the illusion made by a foreground running into a painted picture, good, really, as far as it went. At the same time everyone has felt the lack of action and life . . ."

"Any one [sic] who has seen a cyclorama can imagine the startling illusion that electricity would add to it" (*New Rochelle* [NY] *Pioneer*, July 28, 1894).

7 Special Electrical Effects

The "spectacular cyclorama" of Kilauea was the first panorama-related spectacle to use special electrical effects. Chase's Electric Cyclorama, shown in Chicago in 1893 in the rotunda that had housed the Chicago Fire Cyclorama, was among those that soon followed. Charles A. Chase had developed a "stereopticon cyclorama" that used a battery of stereopticons (magic lanterns) arranged in a circle above the heads of his audience. It was designed to project a continuous image around the interior of the circular building that could include dissolving views and moving figures. It was hoped that Chase's invention would bring panoramas into fashion again, but it never progressed beyond the prototype stage (Wray, 2018).

Artist Edward J. Austen, who reportedly painted seventeen panoramas, developed the "scenograph," which was described as "[a]n evolution from the cyclorama, the diorama, and the scenic theatre," retaining the best of those, and adding novel features made possible by electricity. Visitors sat in front of an elliptical form that was 50 feet deep from the front to the backdrop, viewing the scene from the outside rather than being surrounded by it (Austen 1903). Austen's scenograph of the Chicago World's Fair was shown at New York's Madison Square Garden in 1894. Real water represented Lake Michigan, many of the city's buildings were shown, small boats moved on the lake, and small trains moved through the scene. Electricity powered these and changed the lighting from day to night. Scenographs depicting the Johnstown and Galveston floods and a journey from New York to the North Pole were shown at various fairs and exhibitions in the United States.

The Spanish-American War of 1898 tempted panorama promoter William Wehner to produce another panorama, the so-called “electro-cyclorama” of the Battle of Manila Bay. Described as “a scientific weaving of panoramic art, electric color blending, mechanical movement accentuated by cannonading, exploding bombs, etc.,” the circular painting took eleven artists five months to create and cost \$75,000. It opened in Chicago in 1898. The viewing platform was a facsimile of the bridge of Dewey’s flagship *Olympia*, from which visitors observed the painting “supplemented and accentuated by the most unique and startling electrical effects ever successfully produced.” The light changed from dawn to forenoon to night, waves were simulated by a system of wires, flashes of red appeared when shells exploded, and appropriate sound effects were heard (*Chicago Tribune*, December 15, 1898; December 19, 1898).

But, back to the nineteenth-century “world in motion” . . . pictures were beginning to move. The magic lantern could show movement via slip slides, chromatropes, and dissolving views. The moving panorama scrolled a large painting past an audience. However, there were other developments. Among the attractions at the World’s Columbian Exposition in 1893 was the Zoopraxigraphical Hall of Eadweard Muybridge, where Muybridge lectured on animal locomotion and displayed his zoopraxiscope, which projected images printed on a rotating glass disc onto a screen. Muybridge’s venture was not a success and was replaced by a panorama of Pompeii that included a volcano. In 1896 in New York, Edison’s Vitascope projected moving pictures at Koster and Bial’s Music Hall. The Tennessee Centennial Exposition featured Thomas Edison’s “Electric Scenic Theater,” which showed short films, and the Portland Oregon Exposition of 1898 featured the “projectoscope and other picture machines.” The projectoscope concessionaire also showed his “war pictures” in downtown Portland in the old Cyclorama building—until one day the projectionist dropped a cigarette onto the film, causing a huge explosion which destroyed the theatre and injured several people in the audience (Monroe, 1898, 12).

Moving pictures were also a feature of the Pan-American Exposition: the Mutoscope Building advertised free admission, but once inside, visitors had to pay to peep. The Mutoscope, patented in late 1894, was a pre-cinematic device: a sort of coin-operated, single-person peep show. Hundreds of photographs were mounted inside a round drum; when a crank was turned these formed a sort of flip book, with the figures appearing to move (Fishman, 2019).

8 “The Cyclorama as an Attraction Was Becoming Obsolete”

In 1908, Hawaiian newspapers reported on meetings that were taking place to discuss the Alaska-Yukon and Pacific Exposition to be held in Seattle. In response to a letter from the Department of the Interior inquiring whether the Kilauea Volcano cyclo-

rama would be part of the exposition, Thurston, who had been so instrumental in the creation of the cyclorama over a decade earlier, replied that he felt that this would not be feasible due to the expense. The Boston exhibition in 1895 lost \$10,000, he said, and the canvas had been sold for \$2,500. The following day, newspapers reported that the cyclorama had begun to seem obsolete, “now a thing of the past, its substitute being motion pictures” (*Hawaiian Gazette*, August 18, 1908).

Author Biography

Suzanne Wray, independent researcher, has presented her research on panoramas and related “optical entertainments” at conferences of the International Panorama Council and the Magic Lantern Society. She is a past member of the board of directors of the Society for Industrial Archeology. She holds a BFA from the School of the Art Institute of Chicago. She lives in New York City, New York, USA.

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Christl Lidl

Virtual Remediation of Lost Panoramas: Developing Dedicated Tools for Displaying Panoramas in Virtual Reality

Abstract: The relationship between the physical immersive space of panoramas designed in the eighteenth and the nineteenth centuries and that offered in Virtual Reality (VR) headsets is very strong. As in immersive headsets, the scenographic space of panoramas causes the viewer to lose his or her spatial reference points and plunges him or her into a fictionalized landscape, the setting of the *faux terrain* accentuating the real effect of the painted subject. The environment designed for VR headsets offers a very similar type of experience, making it possible to envisage a remediation of panoramas. The term “remediation” is used in the sense given by Jay David Bolter and Richard Grusin, who consider that new media take their meaning and pay homage to older media by “refashioning” them in their own technology.

The history of panoramas reveals that the canvases that constituted them were not always dedicated to a single place of display but could, through the standardization of their size, “travel” and be exhibited in other locations. The aim of this project is to present panoramic canvases virtually, in particular those held by institutions but whose exhibition is made impossible by the absence of a suitable architecture for their installation. This illustrated paper offers a step-by-step look at the various stages of a six-month process of reflection, development and experimentation. This work has led to the creation of two virtual reality tools, dedicated to nineteenth century panoramas whose fragmentary or complete paintings have been digitized. The working method consists of simultaneously creating a virtual reality scenographic project to experiment with the newly-designed tools, giving meaning to their use. The panoramic canvases need to be presented in a circular space, so the scenography includes a virtual 3D model of the architecture of a nineteenth century rotunda. The scenography offers an interactive approach to panoramic painting, superimposing existing archives such as preparatory drawings and photographs on it, to scale. This “nomadic”

Acknowledgments: My sincere gratitude to the late Christophe Chaillou (1961–2023), with whom I collaborated on many virtual reality projects and research. He knew how to share his experience as a computer scientist, but also his curiosity and his enthusiasm for artistic creation. I dedicate this article to him.

My gratitude to Laurent Lescop, architect, professor at the École Nationale Supérieure d'Architecture de Nantes (ENSA Nantes) and researcher at the CRENAU/AAU laboratory (Ambiance, Architecture et Urbanisme), who collaborated with me on this project.

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panorama is conceived as a research tool on panoramas and, at the same time, as a contemporary museum experience for the public.

Keywords: VR experience, remediation of historical heritage, VR scenography, VR dedicated tools

1 The Beginnings of the Project

The main goal of virtual heritage is to represent cultural heritage in realistic virtual environments where the public can immerse and/or interact with these artifacts. [. . .] The representation of cultural heritage in virtual reality transcends space and time: users can visit remote places that are not accessible to regular users [. . .]; users can visit places the way they were at a different time in history through the digital reconstruction of a historical building (Cecotti 2022, 83).

In the spirit of this quote, and working as a guest artist at the MINT Laboratory alongside Christophe Chaillou, computer scientist, and Leo Mans, Unity developer, we have designed virtual reality tools dedicated to the remediation of historic panoramic paintings or their fragments after they have been digitized.¹ Since 2018 I have collaborated with Christophe Chaillou on the development of creative virtual reality tools for artistic projects. In 2023, I proposed that we work together on a new project focusing on nineteenth century panoramas, as I had previously created a VR prototype of a cinema museum.² Panoramas are considered to be the precursors of the cinema.

I commenced my research by collecting online resources and I visited the Mesdag Panorama in The Hague and the Waterloo Panorama near Brussels.³ Both sites are remarkable for having preserved their original architecture and canvases. I was able to appreciate the physical, visual and acoustic experience they still provide today. I also realized how necessary the staging of the space on the platform surrounded by the painted canvas, was to the creation of the visual illusion. In the course of my discussions with Chaillou, and before we started thinking about possible tools for this project, we came to the conclusion that digitized archives whose presentation is reduced to a flat image on a computer screen (or a printed reproduction) cannot render

¹ Unity is a cross-platform game engine developed by Unity Technologies. The Unity game engine launched in 2005, aiming to “democratize” game development by making it accessible to more developers. The engine can be used to create three-dimensional (3D) and two-dimensional (2D) games, as well as interactive and other experiences. See “Unity (game engine)” n.d.

² The author’s project video teaser can be watched online at <https://lidlchristl.wordpress.com/cinema-china-vr/>

³ The Mesdag Panorama also has a very interesting interactive website, and I used some of the site’s archives to create the VR prototype; see <https://panorama-mesdag.nl/en/>. I took photographs and comments from the Mesdag panorama catalog and photographed the poster reproducing the panorama “unfolded” to integrate it into the virtual reality prototype. See Sillevs 2015 7; 45 and Leroy 1991, 121–124.

the intrinsic architectural scale of a panorama, nor the three-dimensional, immersive experience they offered.

Virtual reality and panoramas share the specific need to correlate the point of view with the body's experience of space. Virtual reality could thus provide a new approach to existing archives. In other words, virtual reality now enables us to convey the immersive experience of panoramas and “embody” it. Visiting the panoramas in Belgium and Holland had convinced me, however, that the virtual experience had to take place in modeled architecture based on that of a nineteenth century rotunda.

2 3D Model of the Rotunda Drawn from Historical Panoramas

I began searching online 3D model libraries for nineteenth century rotunda architecture. On the ArtStation website, I discovered the magnificent 3D architecture created by Jonathan Biz Medina for the Brazilian Panorama.⁴ In the International Panorama Council's journal, I read Thiago Leitão de Souza's exciting long-term project on the Panorama of Rio de Janeiro (Leitão 2021). I discovered that Laurent Lescop, the French architect and researcher I had met at previous conferences on scenography and virtual reality, had carried out a research project and created a 3D model based on nineteenth century archives and plans. Lescop based his work on a sectional drawing representing the commonly-used architecture of a panoramic rotunda in the patent described and registered in 1787 by Robert Barker (Irish, 1739–1806), as well as on the two plans by Jacques Ignace Hittorff (French, 1792–1801), which can be found in the latter's book on panoramas of the Champs-Élysées (1842, 39; 41) (Figs. 1–3).

Lescop's research focuses on identifying the architectural aberrations generated by the gap between digital and graphic data from archives and their transposition, however precisely, into digital 3D modeling (Lescop 2016). As can be seen from the plates in Lescop's article, Barker's drawing is placed as if it were on a transparent pane of glass, which would cut a virtual volume of the architecture at its center. The plane can be rotated on its central axis until it forms a circle or, more precisely, a cylinder. The distribution of the various architectural elements can then be deduced. Hittorff's sectional plan, with a scale below the architectural drawing, enables him to deduce the diameter of the rotunda's central circular space (Figs. 4–5). On these bases, Lescop was able to create the cylindrical volume of the architecture and continue his work of analysis and transposition into a virtual model (Fig. 6).

⁴ Various views of the 3D model of Biz Medina's Brazilian panorama project can be seen online at <https://www.artstation.com/artwork/Xn03GD>. The author's site is also very interesting, presenting numerous projects for visualizing and visiting heritage sites: <http://www.jonathanbiz.com/portfolio.html>

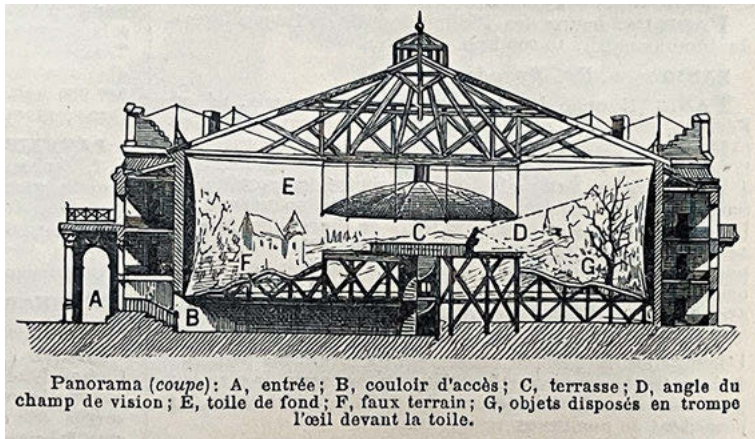


Fig. 1: Panorama (Coupe). In *Le Nouveau Larousse Illustré: Dictionnaire Universel Encyclopédique* (Paris: Larousse, 1898), volume 6, page 644. Image, Melissa Wolfe.

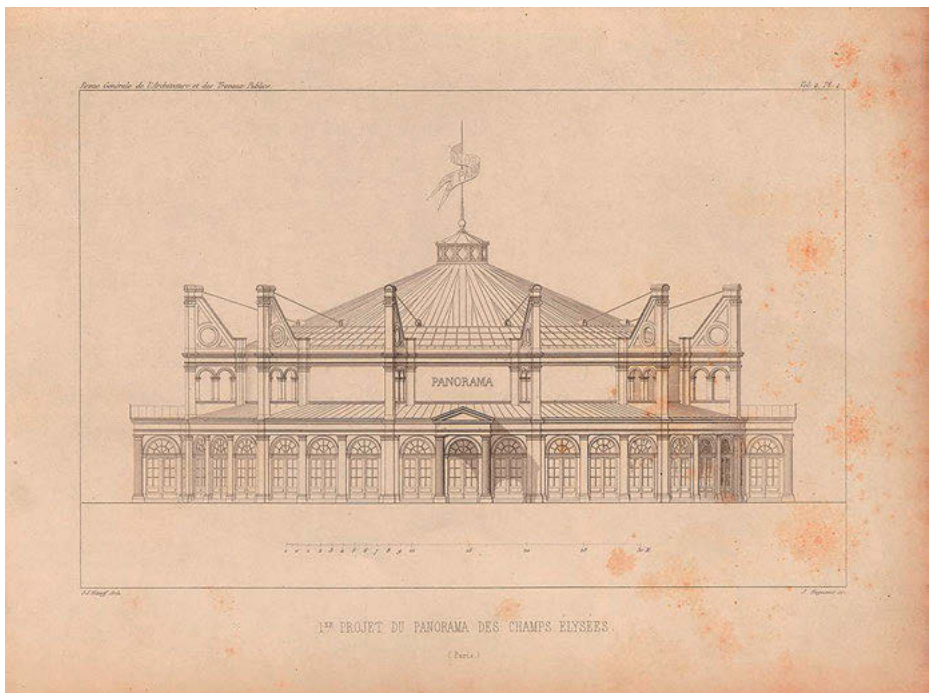


Fig. 2: Jacques Ignace Hittorff. 1849. In *Description de la Rotonde des Panoramas Élevée dans les Champs-Élysées* 2: 39, pl. 1. Image, public domain, Gallica (BnF).

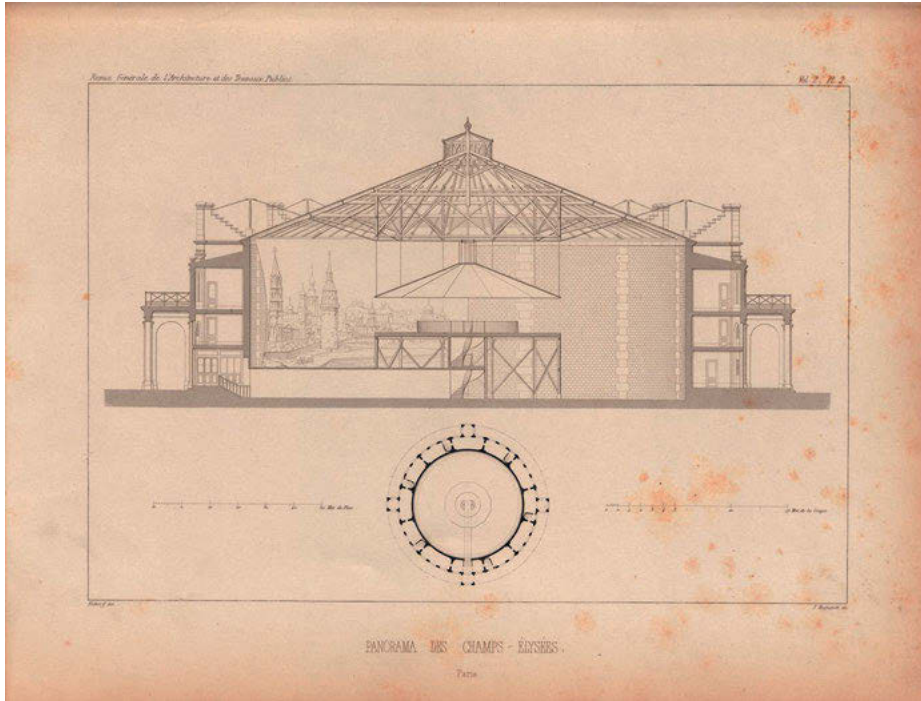


Fig. 3: Jacques Ignace Hittorff. 1849. In *Description de la Rotonde des Panoramas Élevée dans les Champs-Élysées* 2: 41, pl. 1. Image, public domain, Gallica (BnF).

3 A Generic Architecture for Starting Work on Tools

I chose to adopt Lescop's architecture in order to develop a generic space that can serve as a basis that can be adapted to host other panoramas. The 3D model of the panorama can be viewed as a museum hosting "exhibitions" of panoramic paintings, for which dedicated scenographies can be created. Most importantly, the virtual space of the 3D model is modular and not subject to the physical constraints faced by real architecture. This idea is rooted in the very history of panoramas. The standardization of the format of panoramic canvases in the nineteenth century enabled them to be exchanged and to travel from one rotunda to another and all over the world. It's also in this spirit that I started thinking with Chaillou about developing virtual reality tools dedicated to panoramas.

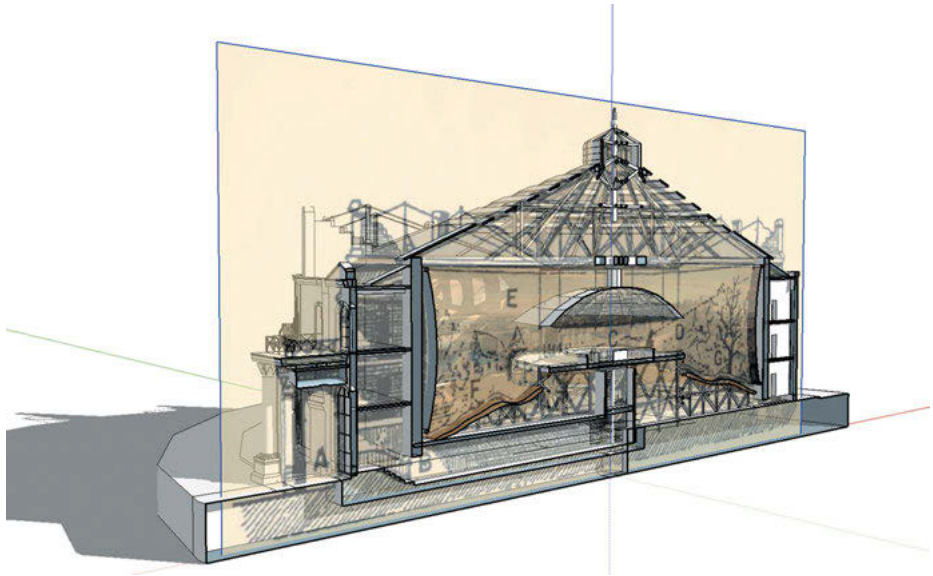


Fig. 4: Laurent Lescop. Cross-section, 3D overlay and reference to generic panorama plate, 2016. Image, Laurent Lescop, used with permission.

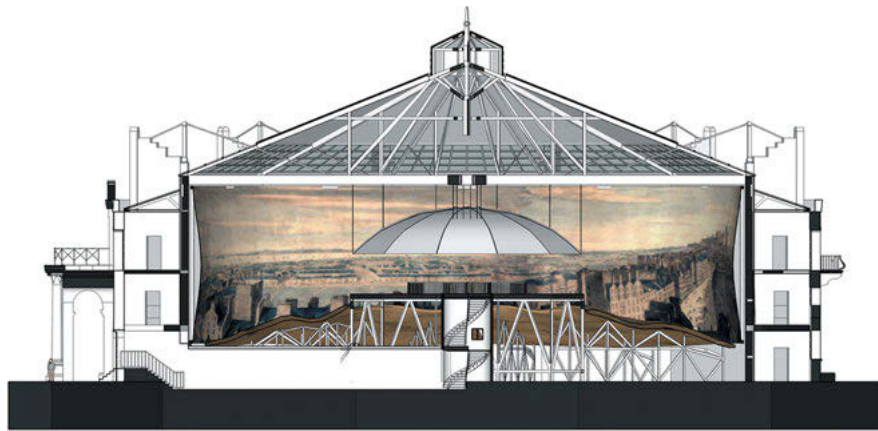


Fig. 5: Laurent Lescop. 3D cross-section of a generic panorama derived from Hittorff's *Rotonde des Panoramas*, Paris (1849), 2016. 3D and image, Laurent Lescop, used with permission.

3.1 Methodology

The working methodology I developed with Chaillou over many years, in a real intellectual complicity, consists in designing a VR scenario on a subject that interests us both, and that lies at the crossroads of our fields of expertise. The aim of this process

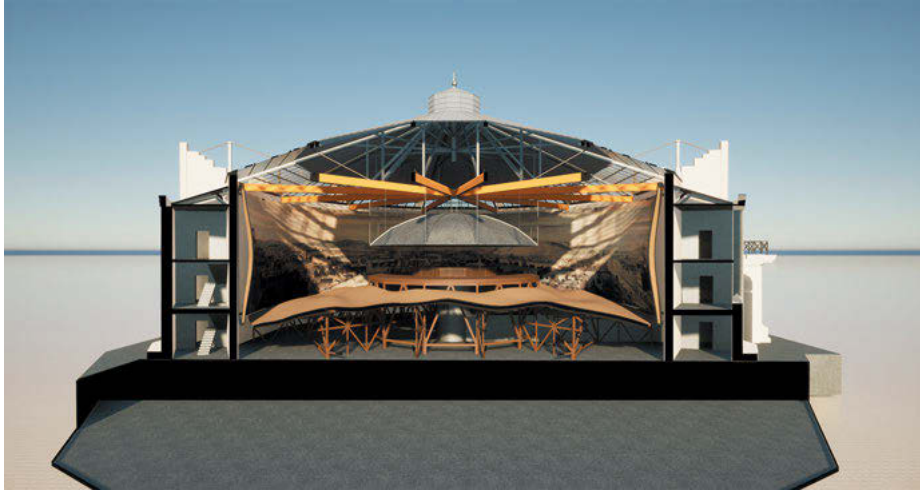


Fig. 6: Laurent Lescop. 3D rendered cross-section of a generic panorama derived from Hittorff's *Rotonde des Panoramas*, Paris (1849), 2016. 3D and image, Laurent Lescop, used with permission.

is also to create virtual reality tools that can be used for other projects by other creators, curators, directors or researchers with similar objectives. A tool must be put to the test of its use in order to identify its potential and limitations.

4 Designing the First Dedicated Tool: Virtual Cyclorama

With Lescop's 3D model having provided us with an architecture, we set about designing a simple tool for rapidly presenting digitized files of panoramic paintings. However, any surface, plane or volume in virtual space is entirely flexible, like an elastic material that can be stretched in any direction. We therefore needed to introduce constraints that would allow us to respect the ratio of the image on the canvas to the virtual cyclorama we were about to create. Regarding their large scale, reproductions of panoramic paintings in art history books or catalogs systematically indicate their width, height and/or diameter, underlining the extent of the painted canvas surface. Our tool was designed to respect the proportions in the archival documentation as far as possible. We can encode the length and height measurements, as if it is the fully unfolded original canvas. Based on these measurements, the radius is deduced and the cyclorama adapted to the digitized file, which has been digitized in the same way as the original canvas (Figs. 7–8).

With a view to using virtual space to enhance heritage for the general public, but also to support research in the field, we felt it was important that certain data, such as

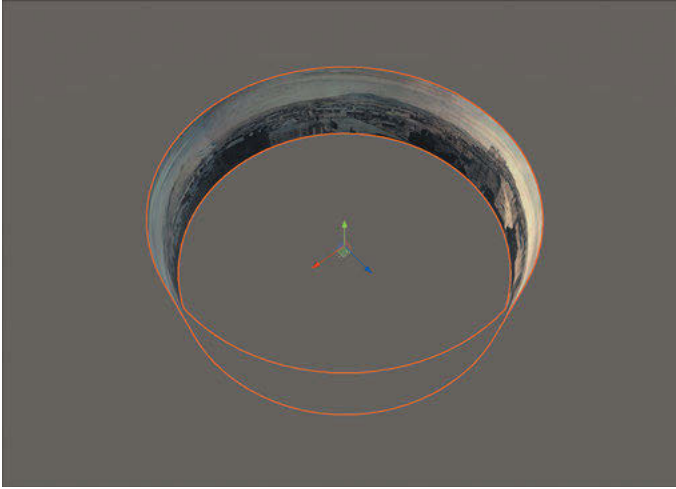


Fig. 7: Christl Lidl. Virtual cyclorama in Unity environment, 2023. 3D and image, Christl Lidl.

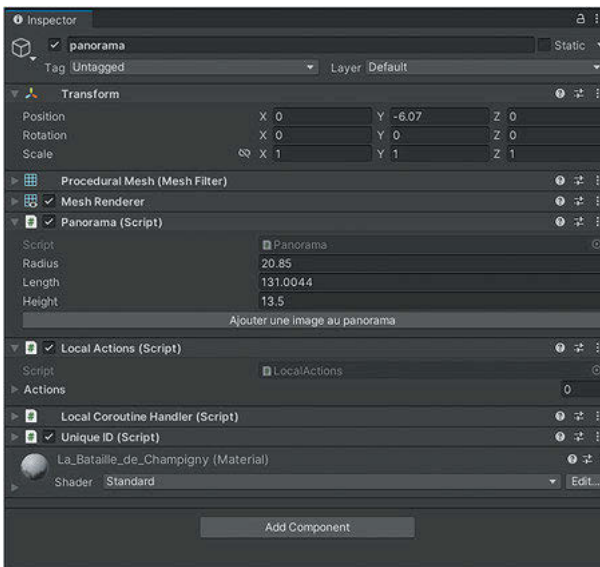


Fig. 8: Christl Lidl. Cyclorama script panel, encoded measurements, 2023. Panel and image, Christl Lidl.

measurements, should be accessible and manipulable, to ensure consistency between what is perceived and what is pure data. The advantage of virtual reality for very large archives is that it provides a space for immersive vision and perception similar to that which visitors and researchers can experience in a real panorama.

5 Virtual Device for Passing on Historical Heritage

One of the many reasons why today's panoramas are not exhibited as much as paintings from the same period are their disproportionate scale and, consequently, the lack of space to accommodate them. These paintings no longer have a site, they are waiting for a place. In their day, they were a very popular spectacle, showcasing a country through the scale of a landscape, or glorifying a country's army in battle. Today, the stories and points of view offered by the panoramas no longer have the same significance in terms of actuality, spectacle or propaganda, but have become a shared historical heritage that needs to be passed on. Just as stereoscopic photographs require the device of a stereoscope to be perceived as they were conceived, panoramic paintings require an immersive body-scale circular vision. Virtual reality makes it possible to design realistic, interactive experiences for VR headsets that viewers can feel are "real." In a way, virtual reality shares a common conceptual goal with the panoramas of its time, in that it goes beyond the physical experience it offers the viewer, and carries the same outsized ambition of the panoramas to match the experience of reality.

The virtual reality experience space is set up to detect the body within a defined zone in real space. VR in headsets matches body movements in real space to those in virtual space. Cameras installed on VR headsets such as the Oculus Quest precisely locate the position of the visitor's head in height, as well as all its rotational and tilting movements. By correlation, the VR visitor is equivalently positioned in the virtual space, giving the illusion of actually being there. Restrictions on body movement are essentially due to the boundaries defined in advance by the calibration of the experience zone in the exhibition space. This gap between the limitation of real space and the infinity of virtual space is compensated in virtual space by the possibility of teleporting from one zone to another by pointing to the one the viewer wishes to move to. In this respect, the presentation of panoramas in a virtual space finds its relevance as an embodied experience. What's more, the setup is very easy, since the whole experience is inside the headset. All that is needed is an empty space whose limits have to be calibrated. It means that a virtual panoramas museum can be designed as a portable nomadic space for institutions that currently lack one.

6 Contextualization of the Rotunda in the Virtual Scenic Space

As in an architectural competition before the building is constructed, the model acts as a mental projection of its general volumes with the facades, plans supplementing any information that could not be provided by the model. While each still existing panorama rotunda is inseparable from the landscape or urban context in which it is set, the aim of our project is not to be constrained by a geographical contextualization



Fig. 9: Laurent Lescop, 2016. Exterior view of a generic panorama derived from Hittorff's *Rotonde des Panoramas*, Paris. 3D and image, Laurent Lescop, used with permission.

of the panorama, while still allowing the virtual visitor to have a view of the exterior of the architecture and the shapes of its overall volume (Fig. 9).

The scenographic choice for the first scene in the VR space is to immerse the viewer in a white cube-type exhibition space, with a model of a rotunda on a table that can be viewed from all sides by moving around the table. It's important to understand that when wearing a virtual reality headset, the environment and its objects are perceived as real. This "physical" perception is completely different from that of a 3D environment or architecture viewed on a computer screen, where spaces and objects are perceived as images to be browsed and interacted with via the mouse. In this way, the model displayed in the VR headset is as an object in its own right, and can be viewed from all angles as the visitor moves around the table. The starting position in the virtual space has been calibrated so that the viewer faces the table with the model (Fig. 10).

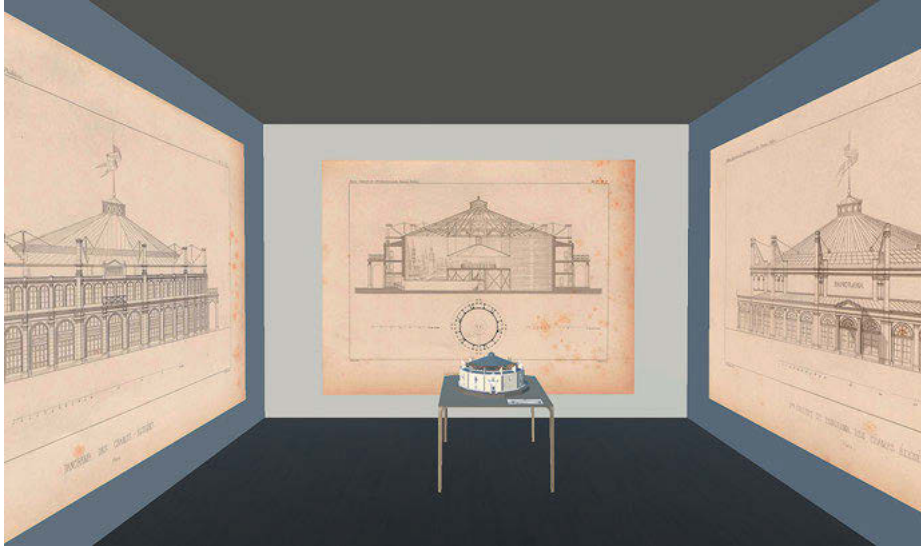


Fig. 10: Christl Lidl. First Scene, Inside the Virtual First Room, 2023. View from Unity Project. 3D and image, Christl Lidl. (Posters: Jacques Ignace Hittorff, *Description de la Rotonde des Panoramas Élevée dans les Champs-Élysées*, 2 (1840): 39, 41–42 (plates 1, 2, & 3). Images, public domain, Gallica (BnF).)

7 IIViMaT, a Unity Game Engine Plug-in for Building Interactive Scenes

To build the interactive scenario, I used the Interactive and Immersive Video Making Tool IIViMaT plugin.⁵ This plugin was created as part of the *Médiations AudioVisuelles Immersives et Interactives* (MAVII), a research project to which I contributed.⁶ It has been developed for the Unity engine and is freely shared on its Asset Store.⁷ In this collaborative project we designed interactive tools for artists, filmmakers and curators who want to design audiovisual projects for virtual reality and don't know how to code. IIViMaT allows to create interactions in a 3D virtual space using “nodes” (coloured boxes) that are linked together. By connecting these boxes in IIViMaT, graphs, sounds, images and videos can be presented in the virtual scene for the viewer to activate (Fig. 11).

⁵ In computing, a plug-in is a software component that adds a specific feature to an existing computer program. When a program supports plug-ins, it enables customization. [https://en.wikipedia.org/wiki/Plug-in_\(computing\)](https://en.wikipedia.org/wiki/Plug-in_(computing)). Unity is an application that allows you to add plugins.

⁶ Information on this MAVII project is available online <https://mavii.univ-lille.fr/research>

⁷ IIViMaT can be downloaded from the Unity AssetStore, <https://assetstore.unity.com/packages/tools/visual-scripting/iivimat-beta-196503>.

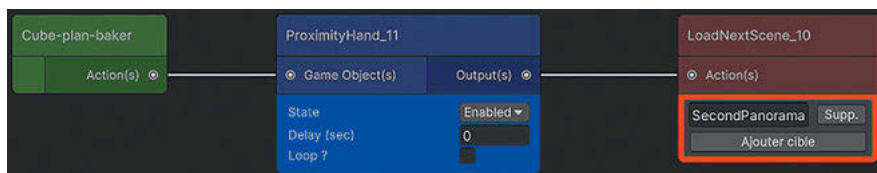


Fig. 11: Christl Lidl. Screenshot from the Unity project. Linked nodes in the IIVIMAT graph enabling interactions, 2023. Graph and image, Christl Lidl.

I can also design a scene where the viewer interacts directly with their hands, which are duplicated in the virtual space. This plugin can be used with Oculus Quest features. It uses the built-in cameras on the headset to detect the position, orientation, and movement of the viewer's hands, as well as the configuration of their fingers. It's a technology that's still in development, but I prefer to use hand interaction rather than joysticks, as I'm convinced it contributes to the sense of immersion.

8 Moving Around the Virtual Panorama

The first scene of the VR application, introduces the panorama project. In the white cube exhibition space with the 3D rotunda model and the large-scale historical plan, after a certain time, a voice-over invites the viewer to touch the Barker drawing on the table and thereby to teleport to the second scene. The viewer is teleported inside the model-turned-architecture, now no longer overlooking it but rather immersed in it (Fig. 12).

Visiting existing heritage panoramas, such as Waterloo in Belgium or Mesdag in Holland, made me aware of the soundscape of the space, the role played by other visitors, and their presence alongside me. As I stood on the platform, I could hear the soundtrack displayed in space, a seaside soundtrack in the Mesdag panorama and battlefield gunfire in the Waterloo panorama. I could also feel the presence of other visitors through their comments and discussions on the canvas they were contemplating at the same time as me.

With the exception of some recent productions, cultural exhibition spaces designed for virtual reality rarely feature other characters. Only sound creations or contextual menus are proposed to enrich the visit of the solitary spectator in virtual space. Even if it's just a 3D model, a character placed in the virtual reality environment when viewed through a VR headset immediately creates a relationship with the viewer. I chose to place character models that I had downloaded for free from online 3D model libraries at the platform's locations. I was surprised to see how even with very rudimentary inanimate models, people who tested the application immediately reached out to touch them. In the virtual space, the character is at the same scale as the viewer, and they both are positioned on the same floor. All the environment and

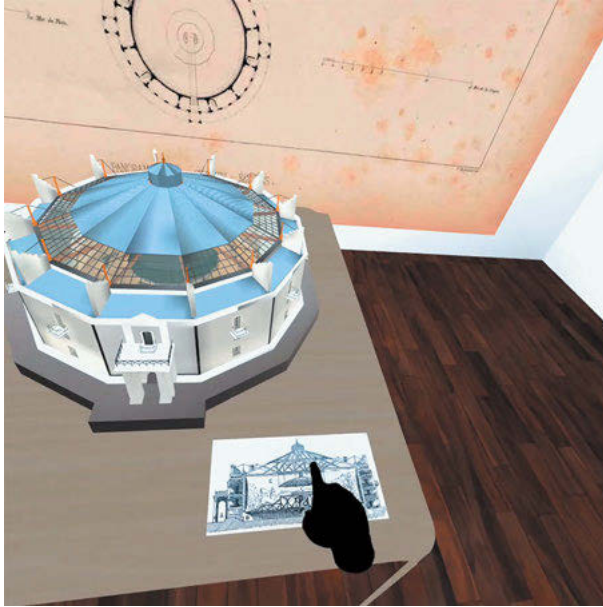


Fig. 12: Christl Lidl. View from inside the VR headset, hand interaction, 2023. 3D and image, Christl Lidl. (Illustration: “Panorama” (cut). *Le Larousse Pour Tous: Nouveau Dictionnaire Encyclopédique*. Tome 2, Publié sous la Direction de Claude Augé. Paris, Larousse, 1907–1910. Image, Gallica (BnF).)

objects are calibrated to visually match the viewer’s scale, creating the illusion of a “tangible” reality.

As I said earlier, while virtual space is infinite and gives the illusion of infinite movement, the real space in which the viewer finds himself is finite and may include obstacles such as walls and furniture. This is why the experience zone of virtual space is defined in the real space at the very beginning with a line called the “guardian.” The guardian grid appears in the headset if the viewer gets too close to the boundaries during his virtual tour. Depending on the limits established in the real space, the viewer can have more or less physical space in which to move around. Nevertheless, the environment designed in virtual space exceeds that defined in real space, and even more so in experiences such as the panoramas. In the scenario I’ve imagined, the viewer can take a few steps to move around, but if he encounters the guardian’s limit, he can use the characters to teleport around the space. The viewer uses gaze interaction and stares at the character and finds himself teleported alongside a character. These characters have been spread out over the platform to allow viewers to “walk” around (Fig. 13).

Furthermore, for the viewer of the virtual panorama, the characters can play the role of passers-by or may be sources of knowledge, like museum guides or enlightened visitors, they can even refer to another time period. Once again, in a very rudimentary way, I’ve added voices to the characters. In a first version of the VR application, the characters’ voices were triggered with a slight delay when the visitor was standing next



Fig. 13: Drawing of the panorama *La Bataille de Champigny*, painted by Édouard Detaille and Alphonse de Neuville, from the panorama booklet sold to visitors, published in 1882. Image, public domain, Méaulle Sc. / Édouard Detaille / Alphonse de Neuville, Wikipedia.

to the character. I found that this disturbed some people. Subsequently, I envisaged that the voices would be triggered by touching a speaker icon placed on a tablet added to the platform railing, so that visitors could activate or pause it as they wished. Many different scenarios can then be imagined. Technical content, history and testimonials can be told to the visitor in front of the panoramic canvas.

The initial approach to the treatment of textual archives also led me to consider the role that could be played by the visual archives, photographs and preparatory drawings that have been preserved of the panoramas.

9 A Second Tool Dedicated to Fragmented Painting

Chaillou, with whom I collaborated on interactive tools, turned out to be a specialist in Wikipedia pages, and I learned that he was one of the many anonymous contributors. He had dealt with a wide range of subjects, and set about inventoring those relating to panoramas. He made a number of discoveries in the process, and taught me that many panoramas, whose conservation was made difficult by the huge size of their format, still exist in museum collections in France and Belgium, but mostly in fragmented paintings. Some of their reproductions are shared in the online pages of

the Wikipedia encyclopedia under a Creative Commons license. This is the case for the Battle of Champigny Panorama, whose fragments are held in various French museums or private collections. Fragments are sometimes brought together and displayed in a scenography that aims to reconstitute part of the puzzle of the original canvas, as is the case for the Battle of Rezonville Panorama exhibited in the Gravelotte Museum in Moselle, France. Fragments of the The History of the Century Panorama can be found in both French and Belgian museum collections, and the only one on public display is the one in a room in the town hall of Saint-Gilles, a district of Brussels. In 2021, a small fragment of the Panorama of Cairo, thought to have been completely lost, was found and returned to the Royal Museums of Belgium.

Reading all these stories discovered by Chaillou, we thought it would be interesting to design a tool that would present the pieces of these puzzles and reassemble them, as far as possible. In this way, they can virtually find their place in the overall scenes to which they belong. The reproductions available online or in catalogs can be of various kinds: preparatory drawings, orientation plans supplied to visitors at the time, and/or engravings made after the painting, sometimes by the painters themselves (Figs. 14–16).



Fig. 14: Christl Lidl. View inside the virtual panorama, 2023. 3D and image, Christl Lidl. (On the cyclorama: Drawing of the panorama *La Bataille de Champigny*, painted by Édouard Detaille and Alphonse de Neuville, from the panorama booklet sold to visitors, published in 1882. Image, public domain, Méaulle Sc. / Édouard Detaille / Alphonse de Neuville, Wikipedia.)

The tool we built makes it possible to assemble scattered fragments into a unified panoramic representation and to position them on the cyclorama. As can be seen in the tool's characteristics panel, the fragment is identified with length and height measure-



Fig. 15: Christl Lidl. Detail, fragment placed on the drawing inside the virtual panorama, 2023. 3D and image, Christl Lidl. (Painting: *Le Four à Chaux*, Fragment of *La Bataille de Champigny*, painted by Édouard Detaille and Alphonse de Neuville. Image, public domain, *Paris assiégé*, Jules Claretie, éditions J Strauss, Paris, 1898, Wikipedia.)

ments and is located on the X and Y axis. My idea is that this data might be useful for panorama research. I also asked the developer to generate a curve, following that of the cyclorama. In fact, I previously tested this on straight fragments, but they seemed floating in front of the canvas. They couldn't be integrated into the unified whole I wanted to propose (Fig. 17).

Furthermore, each fragment can also become an interactive object thanks to IIVi-MaT interactions. For example, if the visitors stares intently at a fragment, they can be virtually teleported to a 3D model of the scaffolding facing the fragment of canvas they are interested in. The viewer will find himself in the same position as the painter of the panorama. This point of view, and the experience of the painters who created the panoramic paintings in situ, are difficult to stage for visitors in a real panorama. They are conceivable and achievable in virtual reality. Having tested it myself, teleportation onto the scaffolding placed at the height of the fragment is a singular experience. As the virtual space simulates real space, and the height of a panoramic canvas is high, the viewer experiences the same sensations as if he were standing on scaffolding in front of a large-scale fresco or painting. Proximity to the canvas brings to light many of the painting's details, usually attenuated by distance when standing on the viewing platform. (Figs. 18–20). The view of the architecture at this height, and the distance from the platform, is itself unprecedented.



Fig. 16: Christl Lidl. Two fragments placed on the drawing inside the virtual panorama, 2023. 3D and image, Christl Lidl. (Painting 1: *Allant au Feu*: a fragment from the panorama of *The Battle of Champigny*, 1882. 492 Property from the Forbes collection Jean-Baptiste-Edouard Detaille. Image, public domain, Wikipedia. Painting 2: *Un Mobile Tué*: a dead German officer near his expiring horse; fragment from Panorama de *La Bataille de Champigny* by Édouard Detaille, 1882. Public domain, Museum of Grenoble, Wikipedia.)

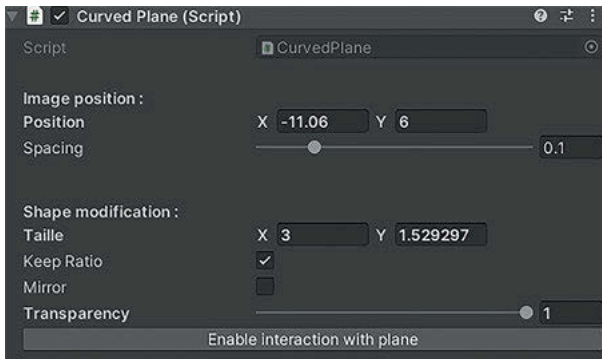


Fig. 17: Christl Lidl. Screenshot from the Unity project, script panel, position on X and Y axis, 2023. The transparency cursor has been developed to check that the painting matches the background picture. Panel and image, Christl Lidl.



Fig. 18: Christl Lidl. View inside the virtual panorama, 2023. Standing on the platform, next to the character staring at the painting fragment. 3D and image, Christl Lidl.



Fig. 19: Christl Lidl. View inside the virtual panorama, 2023. Height of the scaffolding. 3D and image, Christl Lidl.



Fig. 20: Christl Lidl. View inside the virtual panorama, 2023. On the scaffolding, close to the painting. 3D and image, Christl Lidl.

10 Conclusion

The aim of this VR project and the development of dedicated tools is to enable and facilitate the practice of virtual reality research and the transmission of the history of panoramas to the public. The Unity game engine, which is mainly used to create interactive games for the industry, was used as the working environment to create the scenes of the VR application. The 3D model designed by Lescop was integrated into the Unity 3D environment. The tools dedicated to panoramas were designed, as were the interactive tools brought together in the IIViMaT plugin, to work in this working environment for distribution in an Oculus Quest headset. These tools were developed through experimentation and on the basis of a scenography designed for panoramas, taking into account the specific history of nineteenth century painted panoramas. The combination of these dedicated tools with those of IIViMaT offers multiple possibilities for rapidly designing and prototyping exhibitions and visitor itineraries. The VR scenography based on the archives and digitized documents available to researchers, museum collections and private collectors, in order to give a new reading of a heritage that is often little exhibited for the reasons previously mentioned in this article, and which can therefore be considered as a heritage that has become lost or invisible to the contemporary public.

Author Biography

Christl Lidl lives and works in Brussels. Until 2022 she was professor of video-multimedia at the Ecole Supérieure d'art et de Design de Valenciennes, where she established a research and production studio on 360° films (2009–2018). In a tripartite research framework integrating art, science, and semiology around immersive scenographies—MAVII (2018–2020)—she collaborated with computer scientist, Christophe Chaillou, (Polytech Lille) and semiologist, Matteo Treleani, (Sophia Antipolis University). Together they have developed a VR prototyping tool, IIViMaT (Interactive and Immersive Video Making Tool). With this tool, Christl Lidl developed the *Cinemachina VR* prototype, a project for a virtual museum of cinemas, presented at Laval Virtual (2021). She has published *ESPACE(S) 360°/VR, Une Recherche Création sur les Écritures Immersives et leur Espace Scénique* in Cahiers Louis Lumière no. 13. Christl Lidl is Doctor in Art and Art Sciences (2021). Her thesis led to the creation of artistic pieces in augmented reality (AR) dedicated to *Life: A User's Manual*, a literary work by Georges Perec. She created the AR application for the exhibition *Cinéma de Bruxelles Augmentés* exhibited (2022/2023) at the Royal Cinematek in Brussels.

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Molly C. Briggs

Panoramic Inscriptions: Perspectival Typography and Pictorial Lettering in Immersive Ephemera

Abstract: Nineteenth-century panoramas were multimedia artifacts whose transporting effects depended on the coordination of painting, architecture, sculpture, stagecraft, and—importantly—printed matter. This paper examines the deployment of immersive word-and-image rhetorics in two-dimensional printed materials that were associated with panoramas and then traces the appearance of such rhetorics in a wider array of printed geographical media including pictorial maps, tourist guides, bird's-eye views, games and toys, musical scores, and advertising broadsides. This analysis shows that while immersive print rhetorics proliferated during the nineteenth century, they predate the invention of the panorama and postdate its currency. Attending to the subtle immersive cues embedded in analog media affords tools for interrogating the metaverse that is already here—that is, the complex of representations that fills our field of view over time, in real time to shape our perception at all scales. Electronic media reach wider audiences and at a faster pace than their analog predecessors, yet continue to rely for their effects on the deployment of word/image relations in built and social space. The paper offers a primer on attending to the production of immersive rhetorics in word-and-image relations for use by historians and practitioners of art, design, cinema, education, geography, urbanism, political science, and other disciplines.

Keywords: Immersive rhetorics, pictorial lettering, graphic epistemologies, social space

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Rendered at the scale of architecture, 360-degree panorama paintings captivated nineteenth-century audiences by affording virtual experiences that unfold at the scale of landscape. Such artifacts epitomize period interest in bending space and time through immersive spectacle. In addition to orchestrating painting, architecture, sculpture, and lighting, panoramas relied for their effects on accompaniment by printed materials, a point somewhat lost today because our reception of extant heritage exemplars is typically facilitated by digital tools. But in the time of the medium's currency, print media was the core mode of information exchange. Furthermore, printed panoramic materials have both a deeper history and a broader reach than is widely appreciated. This paper tests a rubric for describing and interpreting the role of their immersive features in producing interactive socio-spatial rhetorics since the sixteenth century.

In 1801, Viennese citizens encountered panorama inventor Robert Barker's famed *View of London* in the first panorama rotunda constructed on the European continent, in Vienna's Prater (Figs. 1–2). Orientation plans were offered in French, German, and English (Oettermann 1997, 288). Upon the exhibition's close, one of Barker's employees chose to stay on; William Barton (d. 1814) purchased the rotunda, and in 1803 made a panoramic study of Vienna from the Augustinian Church tower (Békési and Doppler 2017, 30). Barton hired well-known painter Laurenz Jansch (Slovenian-Austrian, 1749–1812) to lead the project, assisted by Karl Postl (Austrian, 1769–1818). Together they executed a 300-square-meter panoramic oil painting of Vienna on paper-covered canvas.



Fig. 1: Artist & printer unknown. *View of the Panorama in the Prater at Vienna*, ca. 1811–12. 39.2 × 50.6 cm (15.4 × 20 in). This is the rotunda in which Robert Barker's *Panorama de Londres* was presented in 1801. Image, Liechtenstein Collections Online, GR 2992, latest update on 11.01.2024, used with permission. <https://www.liechtensteincollections.at/en/inv/GR02992>.

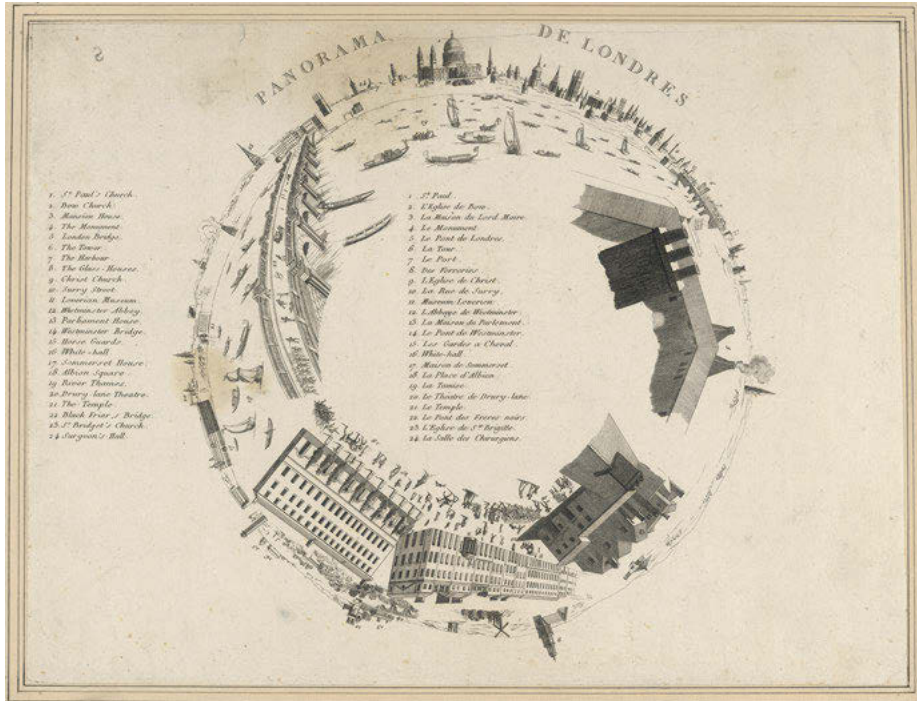


Fig. 2: Artist & printer unknown. *Panorama of London*, c.1801. After Robert Barker (Irish, 1739–1806). Etching & engraving on paper, 30.6 cm × 40.7 cm (12 in × 16 in), trimmed. Image, ©Trustees of the British Museum, used with permission.

The corresponding orientation plan is the only surviving image of the panorama that opened to wide acclaim in 1804 (Fig. 3). The view is annotated with numerals keyed to 68 text labels given in the octagonally-formatted center. As with most circular panorama keys, reading the labeled view required handling and rotating. Gazing over rooftops, identifiable landmarks include the Baroque palaces of the Belvedere, the fifteenth-century wayfinding tower known as the Spinner on the Cross, the Royal Court Theater, and cities and peaks on the horizon (Figs. 3–4). The key likely played an important role when it accompanied the panorama's subsequent presentations from 1806 through 1810 in Dresden, Leipzig, Berlin, Hamburg, Copenhagen, Stockholm, St. Petersburg, Frankfurt, and Munich, where visitors would not necessarily have already known the Viennese topography (Oettermann 1997, 289–291).

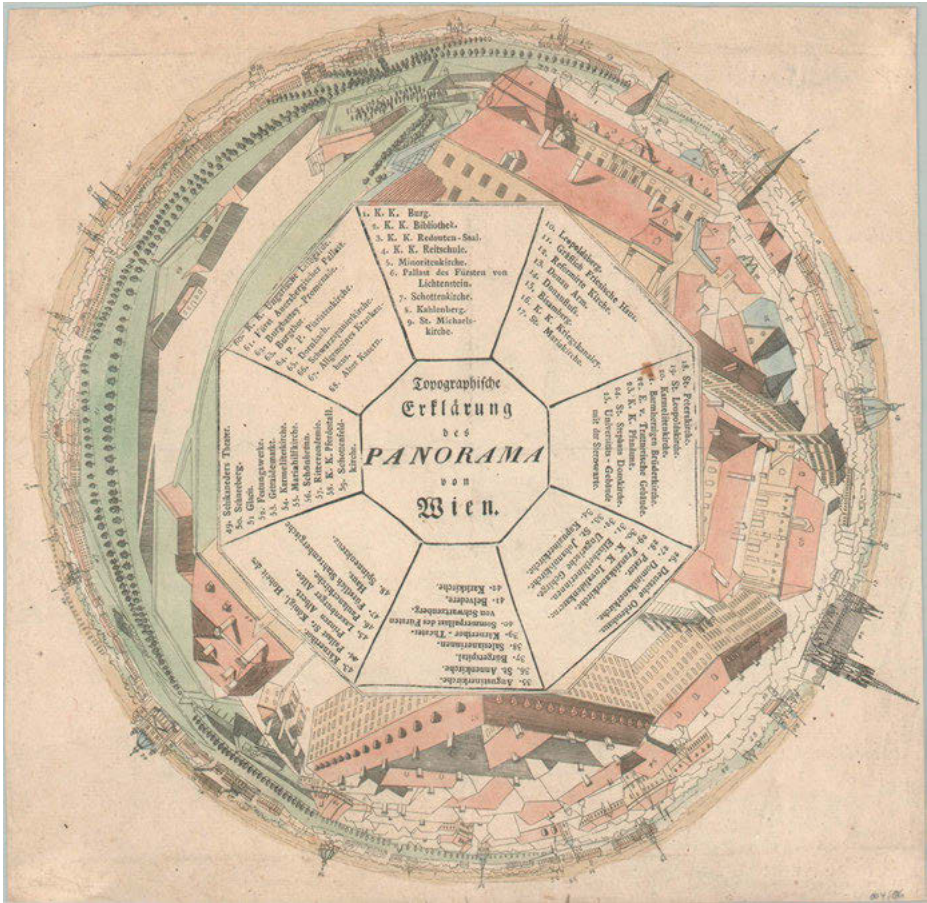


Fig. 3: Artist & printer unknown. *Topographical Explanation of the Panorama of Vienna*, 1805. Panorama key after William Barton (British, d.1814). Colored engraving on paper, 27.9 cm × 29 cm (11 in × 11 1/2 in). Image, Curtis Wright Maps, used with permission.

1 The Rubric

Panorama orientation plans are complex graphics that marry pictorial perspective with cartographic technique, including azimuthal (360-degree) and ichnographic (plan) projection. Relations between word and image serve to stitch these three distinct visual logics into seamless immersive images whose interactive affordances make cosmographical arguments. *Pictorial perspective* is easy to recognize by looking to the top portion of the image, where forms appear to recede into space. As the eye moves clockwise, it becomes relatively more difficult to read the view, necessitating

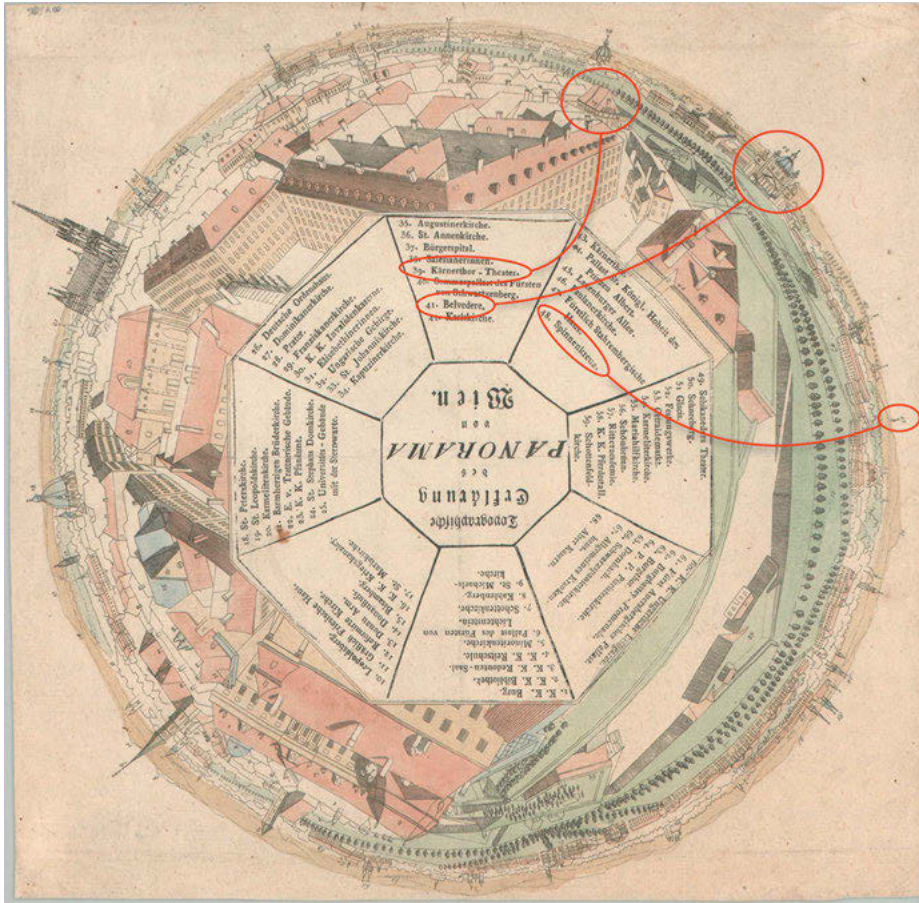


Fig. 4: Artist & printer unknown. Topographical Explanation of the Panorama of Vienna, 1805. Panorama key after William Barton (British, d.1814). Colored engraving on paper, 27.9 cm × 29 cm (11 in × 11 1/2 in). Image, Curtis Wright Maps, used with permission. Rotation & annotations by Molly C. Briggs.

that the viewer turn the sheet. This point brings us to *azimuthal* or “*zenithal*” *projection*, a cartographic technique typically used for mapping the earth’s poles and charting the heavens (Snyder, 1993, 20–29). When used to map a terrestrial place (rather than a celestial view), as we see here, the view is rendered from a stationary central point—in this case, a church tower—and looks in every direction. *Ichnographic* or *ground-plan projection* is less-easily discerned; here we are not presented with a plan view of the city, and the ground at the central area of view is not pictured. But look at it this way: the octagonal space that contains the title and labels is more than a blank container for text; it is in fact also the floor plan of the platform. That is, it presents in plan view the wooden surface upon which panorama visitors would have stood. The diagonal lines serve not only to organize labels, but also to direct the eye toward the

portion of view in which corresponding numbered structures and landforms are located. Furthermore, they ease the transition from plan to perspective, thereby stitching the composition together. *Cosmography* refers to the picturing of heavenly bodies. This, by contrast, is a terrestrial view, yet nevertheless cosmography emerges, inasmuch as Vienna and its environs coalesce as a planet, implying the world can be seen from here and Vienna stands at the active center of it all.

Typography and lettering play a critical role in tying these four elements together. The labels could have been placed otherwise; regard again the key to Barker's *London* (Fig. 2), where text labels are oriented to a baseline parallel with the bottom of the sheet, whereas in Barton's *Vienna* the labels' baselines comport with the azimuthal construction of view. Azimuthally-set labels enable the viewer to read the Viennese view while turning the print, rather than turning it this way to study the view and needing to turn it back that way to read the labels as in the *London* plan. This deceptively simple (but actually complex) coordination of word and image induces reading from the inside out, thereby immersing the viewer in the view.

The most prominent architectural feature on the Vienna orientation plan's skyline is St. Stephens church. And interestingly, this feature invites a dive deeper in the history of interactive & immersive print design. For while panorama keys popularized such views, the circular place-map has a longer history. Vienna had for centuries been the site of wars over empire, and a view constructed just like this was used to produce a felt sense of implication and polemical presence long before the 1787 invention of the medium for which the term "panorama" was coined.

2 Mapping Culture

Nuremberg printer and publisher Nikolaus Meldeman's "Vienna Besieged," often referred to as the *Rundplan* (round map), depicts the first Ottoman siege of Vienna as it occurred in the autumn of 1529 (Fig. 5). Published in six sheets in May, 1530, the hand-colored woodcut illustrates encampments, troop movements, artillery fire, executions, and other events of war occurring largely beyond the city's walls. Conceived from a European perspective and intended for audience with members of the professional and commercial classes, this pictorial map disseminated eyewitness reportage of the twenty-one-day siege within an apparently continuous topography.

Meldeman began the project by acquiring detailed studies from a painter who claimed to have witnessed the siege from St. Stephens's tower (Oppl 2021, 146.) The print is designed to be read from the inside out. As such, the *Rundplan* constitutes an important artifact of early print history, a hinge in the transition from medieval to Renaissance cartography, and an illuminating precedent of both form and content for the late-eighteenth-century boom of azimuthal graphics.



Fig. 5: Niclaßen Meldeman (Reportingman) (German, active 1519–1552), printer & publisher. *The City of Vienna Besieged* in 1529, 1530. Hans Sebald Beham (c.1500–1550), woodcutter. Woodcut print on paper, 81.2 cm × 85.5 cm (32 × 33.7 in). Image, Wien Museum Vienna, used with permission.

Pictorial perspective is easy to recognize. All features appear to recede into space, including the topography itself, whose undulating ridges contribute to the appearance of depth. St. Stephens church and a smaller ecclesiastical building to its right are oriented with their bases parallel with the bottom of the sheet. Four nearby buildings are perspectively transitional—that is, they are set with bases turning toward circularity. All remaining structures, figures, and groups are drawn in pictorial perspective but positioned in 360-degree azimuthal projection. Each building is grounded by its orientation toward the center, which is to say toward the tower from which the view is constructed.

Here again, ichnographic or “ground plan” view is harder to discern, but emerges inasmuch as the ground enclosed within the city walls is rendered without topographical detail, as though flat. Beyond this point, its role in the map is negligible. Its cosmo-

graphic dimensions, by contrast, are highly salient; this rendering positions Vienna as if at the center of the relevant world, which is to say at the center of the Habsburg Empire. Mount “Guttenberg” comprises one of the most salient features on the horizon. This geography’s resemblance to a planet should be regarded neither as trivial, nor as an anachronism, for Meldeman—and the city commissioners—were surely familiar with the so-called *Erdapfel*, created by Martin Behaim forty years prior and the oldest surviving example of a terrestrial globe now known. Displayed in a reception room in the Nuremberg Town Hall from the time of its making until some point early in the sixteenth century, Behaim’s globe was developed through collaboration among a team of humanists, craftspeople, and artists in Nuremberg, a center of mapmaking from which numerous innovations would emanate. Given that the globe was likely familiar not only to the mapmaker but also to regional audiences, Meldeman’s invention of the round place map should be understood as a clear graphic reference to the concept of the globe.¹

The orientation of the map’s labels differs markedly from cartographic convention, in which lettering stands vertically on a baseline as parallel as is feasible with the bottom of the sheet, comporting with the orientation of type in broadsides and books. Here, the baseline of nearly all the print’s 148 German blackletter labels are oriented concentrically around the church shown at the map’s center. This map was likely intended to coalesce viewers’ confidence in the protection of the Austrian Archduke and the Holy Roman Emperor (Oppl 2021, 146 and Landau and Parshall 1994, 240). As such its purpose was both sensationalistic and propagandistic, arguing for the imagined community of shared political identity and the legitimacy of Habsburgian spatial control. It situates the viewer amid concentric rings—not latitudes, as in azimuthal polar world maps, which would first appear a few decades later, but rather rings comprised by the encircling medieval walls and larger implied circles of imperial authority.

Rendered sixty years after the *Rundplan*, Monte Urbano’s recently-rediscovered manuscript *Map of the World* is one of the earliest known azimuthal polar world maps (Fig. 6).² At over nine meters in diameter, the map is immersive and interactive—a panorama, of sorts, designed to be wall-mounted on a wooden disk set over a metal pin (“Publication Note” n.d.). Rather than turn the sheet in the hand, or on a table, this map is read by rotating it on the wall. There is no data on the height of the mounting, but in any case, turning the wheel would have brought portions of the map close enough to study. Pictorial-perspective features abound, including trees, animals, human figures, small islands, and sailing ships.

1 <https://en.wikipedia.org/wiki/Erdapfel>. This early globe’s motivating purpose remains a live question, but it clearly condensed knowledge of scholarly, political, commercial, and popular value.

2 Map historian Matthew Edney (2021) describes it more specifically as an azimuthal equidistant projection, n.p.

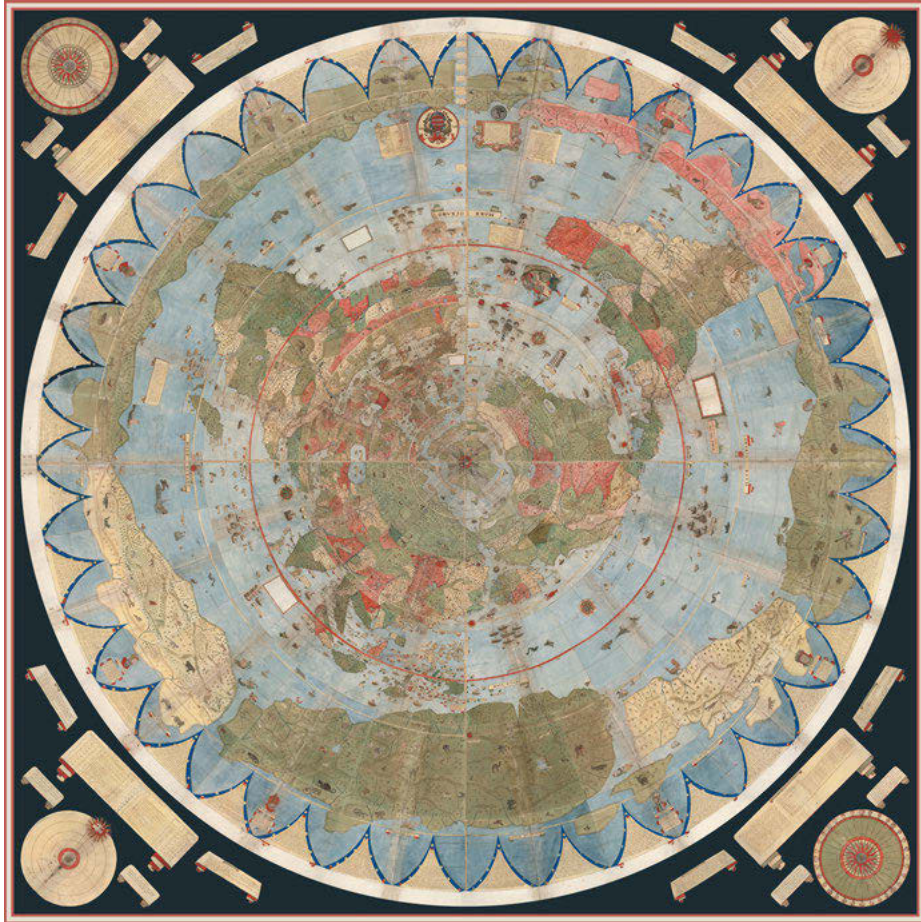


Fig. 6: Monte (Monti) Urbano (Italian, 1544–1613). *Map of the World* (Composite: Tavola 1–60), 1587. With additional spheres and labels in the four corners. Manuscript map, 305 cm × 305 cm (120 in × 120 in). Image, David Rumsey Map Collection, David Rumsey Map Center, Stanford Libraries, used with permission.

There are several types of azimuthal cartographic projection. All radiate from a central point, but differ in the extent of the view, which in turn determines the type of distortion produced. The contemporary diagram pictured on the left in Fig. 7 is illustrates the distortion produced by azimuthal equidistant projection. The view extends from the north pole at the center to the regions of the south pole distributed around the perimeter. The landforms shown in the 1587 map track closely with those shown in the contemporary graphic. Whereas in the Vienna orientation plan only the panorama platform appeared in plan view, here the entire Urbano *Map of the World* appears in plan view (with the exception of the added figures.) Scalar distortion increases with distance from the

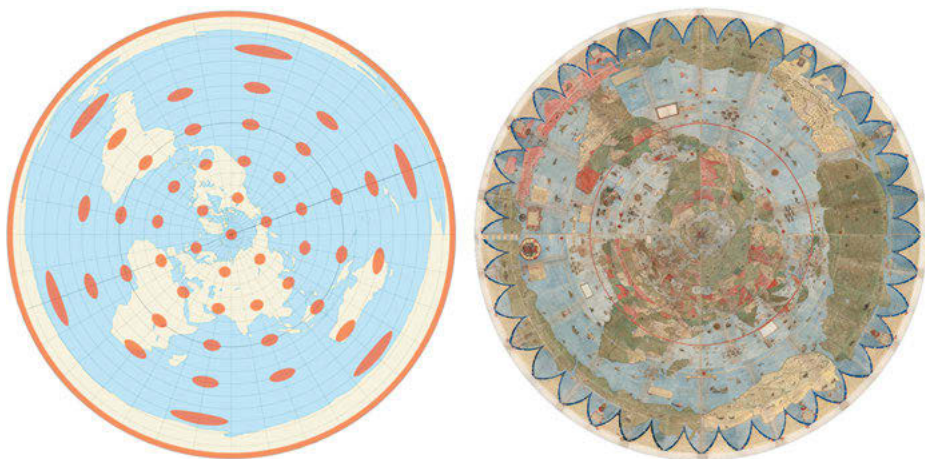


Fig. 7: Left: Justin Kunimune. Azimuthal Equidistant Projection with Tissot's Indicatrices of Distortion, 2018. Image, Wikimedia Commons, CC BY-SA 4.0 license. Right: Monte (Monti), Urbano (Italian, 1544–1613). *Map of the World* (Composite: Tavola 1–60 (detail), 1587. With additional spheres and labels in the four corners. Manuscript map, 305 cm × 305 cm (120 in × 120 in). Image, David Rumsey Map Collection, David Rumsey Map Center, Stanford Libraries, used with permission.

center, as demonstrated by the orange dots (indicatrices) in the diagram on the left, which morph from small circles to wide ovals.³

Cosmographic logic emerges in the overall view, inasmuch as it bears a pictorial resemblance to a globe, but the concept arises more distinctly in the cosmographical diagrams in the four corners. Viewed on a wall, the top two diagrams would be too high to read, but the viewer could lean or squat in order to read the bottom two. And then by rotating the wheel, the other two graphics would come within reach as well. Here, and throughout, hand-lettered labels engage the viewer and support immersion. Labels are oriented not to the center, but rather the perimeter. If they were oriented to the center, the map would have to be lain on the floor and crawled upon in order to read its details. Still, the map facilitates reading from the inside out, for its prodigious size fills the field of view, thereby locating the viewer inside the view.

The hybrid medium of the circular place-map continued to develop in the seventeenth century. Labels played a smaller but still constitutive role in two important period exemplars, Theodor Schoon's mostly-pictorial 1690 *Vernunfftmaßsige Beschreibung der Erd-Kugel* (Rational Description of the Spherical Earth; not pictured) and a British military topography of the *View of Dieghem, Flanders, Belgium*, circa 1745 (Fig. 8). Brit-

³ https://commons.wikimedia.org/wiki/File:Azimuthal_Equidistant_with_Tissot%27s_Indicatrices_of_Distortion.svg. For example here the viewer has a close look at Eastern Europe, and can bend to read downward.

ain's Duke of Cumberland is well known for his collection and use of maps for strategic planning and the study and conduct of warfare (Hodson 1988). Accordingly, he sent his topographer to the top of the Dieghem Church tower to survey the British encampments in Flanders (now Belgium). This circular map describes not only the troops' strategic position in the landscape but also the strategic role of the Duke's map collection as a whole in plotting troop and supply movements. As such, the image serves as an emblem that condenses the view from the crown.



Fig. 8: George Augustus Schultz (British, n.d.; active 1734–1749). *View of Dieghem, Flanders, Belgium* 50° 53'50"N 04°26'00"E, 1745 or later. 25.6 cm (10 in) diameter, pencil, pen and ink on paper. Image, Royal Collection Trust, UK, Copyright Her Majesty Queen Elizabeth II ©2024, used with permission.

3 Round Maps in the Age of Panoramas

By 1820, orientation plans to panoramas were ubiquitous and their circular logic had been adapted and extended to inform all manner of print materials. Pictorial perspective is evident throughout an extraordinarily detailed circular pocket map for hikers of the Rigi range in the Swiss Alps, and also informs three of the four corner vignettes, each of which is grounded toward the center (rather than the perimeter) and thus supports an inside-out reading (Fig. 9). Landforms and buildings appear in vast picto-

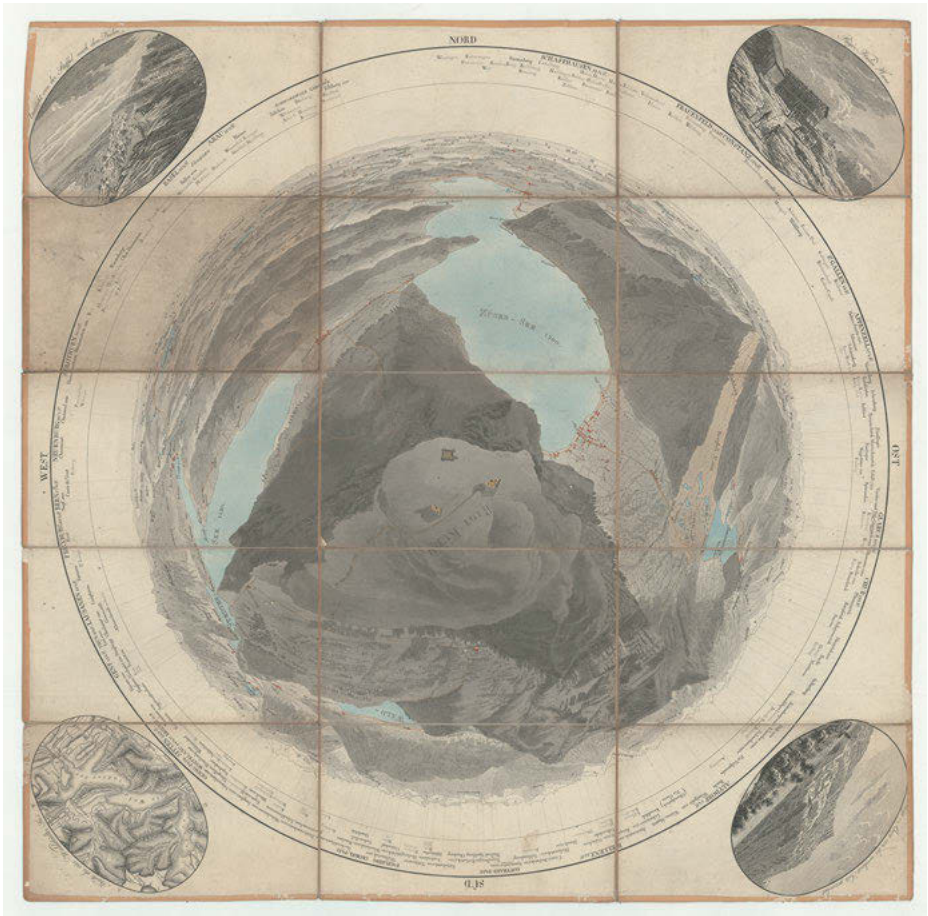


Fig. 9: David Alois Schmid (1791–1861), artist. *Panorama oder Zirkel-Aussicht vom Rigi Berg auf dem Kulm* [Panorama or Circular View from the Rigi mountain on the Kulm], 1820. After Franz Ludwig Pfyffer von Wyher (1716–1802), cartographer and draftsman. Franz Hegi and Franz Schmid, artists (vignettes). Hand-colored etching with aquatint and engraving, dissected and mounted on linen, 53.5 cm × 53.7 cm (21 1/16 in × 21 1/8 in). Image, MacLean Map Library, used with permission.

rial perspective. Roads are marked, but disappear where occluded by hills. Lettering behaves in the same manner, as though written on the landscape itself.

Azimuthal projection has been married with pictorial perspective to produce something we might call azimuthal perspective. The only places we see ichnographic or plan view are in the vignetted map on the lower left, and in the very center, where if we lean in we find ourselves gazing straight down upon the wooden viewing tower that visitors could climb in order to survey the surrounding panorama from the Rigi summit (Fig. 10). Nearby text operates in the same manner; the map's title appears as if text were written on the summit and mapped in plan view (Fig. 11).



Fig. 10: *Panorama oder Zirkel-Aussicht vom Rigi Berg auf dem Kulm, 1820*, detail. Image, the author, courtesy of the MacLean Map Library.

The visible Alpine landscape presents as a planet in its own right. A total of 622 typographic labels are positioned so as to integrate pictorial, azimuthal, ichnographic, and cosmographic readings. Much as the map's title is lettered according the logic of plan view, the lower left vignette structured as an ichnographic projection, but its labels are set with base oriented toward the summit, so that even this little map must be read from the inside out. Finally, labeling around the perimeter is nearly as complex as a celestial chart. Labels are elegantly organized in a typographical hierarchy ten levels deep. Designed to allow hikers to navigate on foot and by sight, the pocket map's covers deserve attention for the way word and image have been combined to express the map's affect and purpose; the title and publisher are inscribed within the surface of a hiker's leather pack (Fig. 12). The pictured *alpenstock* (walking stick) and scope would be supplemented by the presence of the folded pocket map presumably

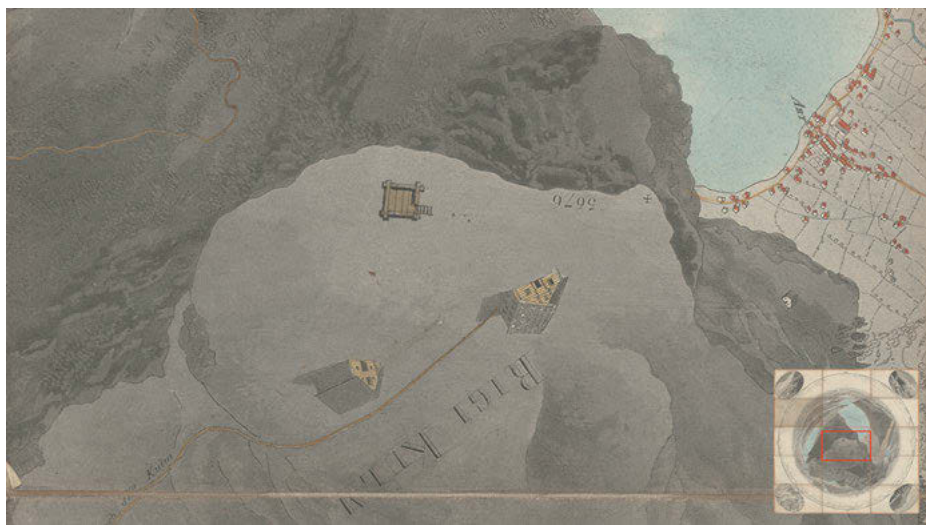


Fig. 11: *Panorama oder Zirkel-Aussicht vom Rigi Berg auf dem Kulm*, 1820, detail. Image, Molly C. Briggs, courtesy of the MacLean Map Library.

tucked within. In this way, the image argues that the map is an essential tool in the Alpine hiker's kit.

During the period of the panorama's currency, immersive mapping and panoramic logic informed the design of a wide variety of media, from guidebooks to parlor games. Famed American investigative journalist Elizabeth Jane Cochran published well-researched exposés on immigrant experience, asylum conditions, government corruption, and human trafficking under a pseudonym, "Nellie Bly." Her stature was cemented in 1890 when she famously circumnavigated the globe in just 73 days, faster than Jules Verne's Phileas in the bestselling 1873 novel *Around the World in 80 Days*. A board game describes her journey in terms clearly derived from the trope of round place-maps and world maps (Fig. 13). Bly's journey begins with the weather at sea in the space marked "1st Day." Pictorial perspective appears in the outer four corners and in each of the circular game board positions, yet all perspective is subsumed into a fundamentally azimuthal arrangement, with each vignette oriented to the center. Ichnographic projection or ground-plan view emerges in shape of the game's path; players would need either to turn the board or move themselves physically around its perimeter in order to read the images as they traced Bly's path. Plan view also appears in the train's final approach to New York City on the "73rd Day." The board's cosmographic significance lies in the overarching conceit of rehearsing Bly's global journey, an argument which also appears on the board's printed exterior (Fig. 14). Lettering is oriented to comport with each of these variables.



Fig. 12: *Panorama oder Zirkel-Aussicht vom Rigi Berg auf dem Kulm*, 1820, front & back covers. Image, David Rumsey Map Collection, David Rumsey Map Center, Stanford Libraries, used with permission.

4 Reading From the Inside Out

Bly took her pseudonym from the titular character of the popular 1850 minstrel song “Nelly Bly” by S. C. Foster, whose lyrics describe a servant who listens at the cellar door as Foster serenades guests. Abraham Lincoln used the tune as a campaign song before Elizabeth Cochran adopted the protagonist’s name as her byline, presumably to characterize her role as an investigative journalist to that of both unobserved observer and public servant. Lettering on the covers of sheet music, including Foster’s several published scores for *Nelly Bly*, offer a fascinating object of scrutiny for design historians interested in conjunctions of word and image.

Musical scores themselves are also a source of azimuthal design. Written entirely as a circle, *ars subtilior* composer Baude Cordier (French, early fifteenth c.) used circular notation to express visually the nature of the canon in 1425 (not pictured; see Onishi, 2013). William Billings’s published score for the song “Connection,” 1794, used a similar strategy with more overt significance for cultural landscape content (Fig. 15). The lyrics are set in an azimuthally-oriented circle in the frontispiece to Billings’s 1794



Fig. 13: Artist & printer unknown. *Game of Round the World with the World's Globe Circler Nellie Bly*, 1890. Lithographed game board. 41 cm × 40 cm (16 1/8 in × 15 3/4 in). Image, David Rumsey Map Collection, David Rumsey Map Center, Stanford Libraries, used with permission.

songbook *The Continental Harmony*, whose lyrics expressly “naturalize” European colonization of the North American continent.⁴

The covers of musical scores offer virtuosic examples of the creative use of lettering and typography and they too function much as advertising broadsides. Consider the direct and economical efficacy with which the motion, breadth and wetness of the Missis-

⁴ Twentieth-century avant-garde composer George Crumb adapts this strategy in the form of a spiral in his hand-notated arrangement for Debussy's *Spiral Galaxy*. In so doing Crumb makes visible the nature of the sonic experience.



Fig. 14: Artist & printer unknown. *Game of Round the World with the World's Globe Circler Nellie Bly*, 1890. Lithographed game board. 41 cm × 40 cm (16 1/8 in × 15 3/4 in). Image, David Rumsey Map Collection, David Rumsey Map Center, Stanford Libraries, used with permission.

sippi is captured in the title page to Thomas Bricher's score for *The Mississippi Waltzes*, composed to accompany the moving of John Banvard's (American, 1815–1891) “three-mile” panorama of the Mississippi in 1847 (Fig. 16).⁵ This example shifts the panoramic referent from the round panorama to the horizontal form of the moving panorama, and in so doing underscores the point that a ubiquitous popular medium's immersive affect is encoded in the design of the page.

⁵ I thank Nicholas C. Lowe for sharing this image; see his related contribution on the music and spectacle of nineteenth-century moving panorama presentations in this volume.

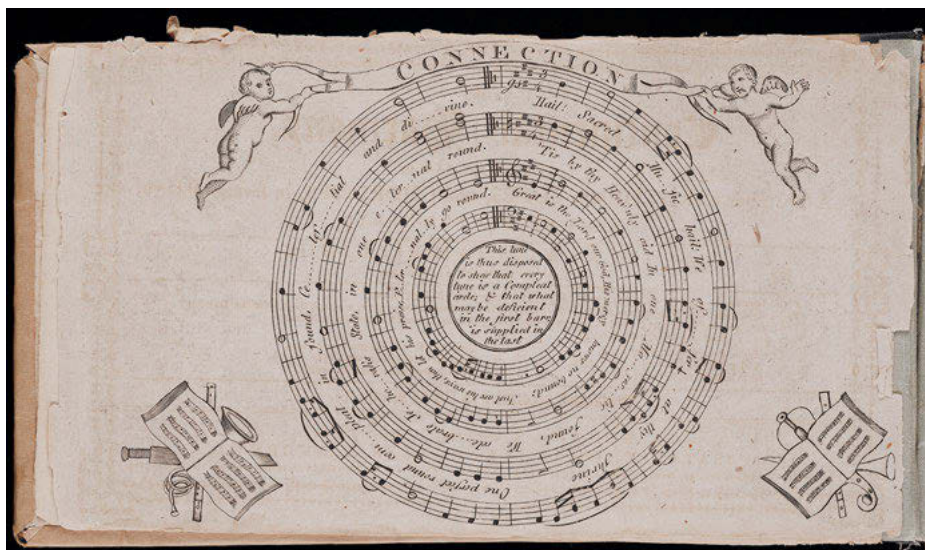


Fig. 15: William Billings (American, 1746–1800). “Connection.” *The Continental Harmony*. Boston, MA: I. Thomas and E. T. Andrews, 1794. Musical score, engraving on paper, 14 cm × 23 cm (5.5 in × 9 cm). Image, Beinecke Rare Book & Manuscript Library, Yale University, used with permission. <https://collections.library.yale.edu/catalog/2020028>.

5 Conclusion

In 1905, a new radical union began to organize workers excluded from the American Federation of Labor (AFL) (Fig. 17). The unionists’ aim was to form “One Big Union” and ultimately to call “One Big Strike” with which to overthrow the capitalist system (BRIA 17 n.d., n.p.). Six numbered “departments” form the rim of the “wheel,” while their respective industrial sectors comprise its spokes. The Industrial Workers of the World (IWW) Administration is the hub that holds the entire wheel together, as outlined in text at the bottom, which intones, in part, “Study the Chart and observe how this organization will give recognition to control of shop affairs, provide perfect industrial unionism, and converge the strength of all organized workers to a common center, from which any weak point can be strengthened.” While composed solely of words, this too is a map of the world, one whose cosmographic significance is distilled by the disposition of lettering set to comport with azimuthal and ichnographic projection.

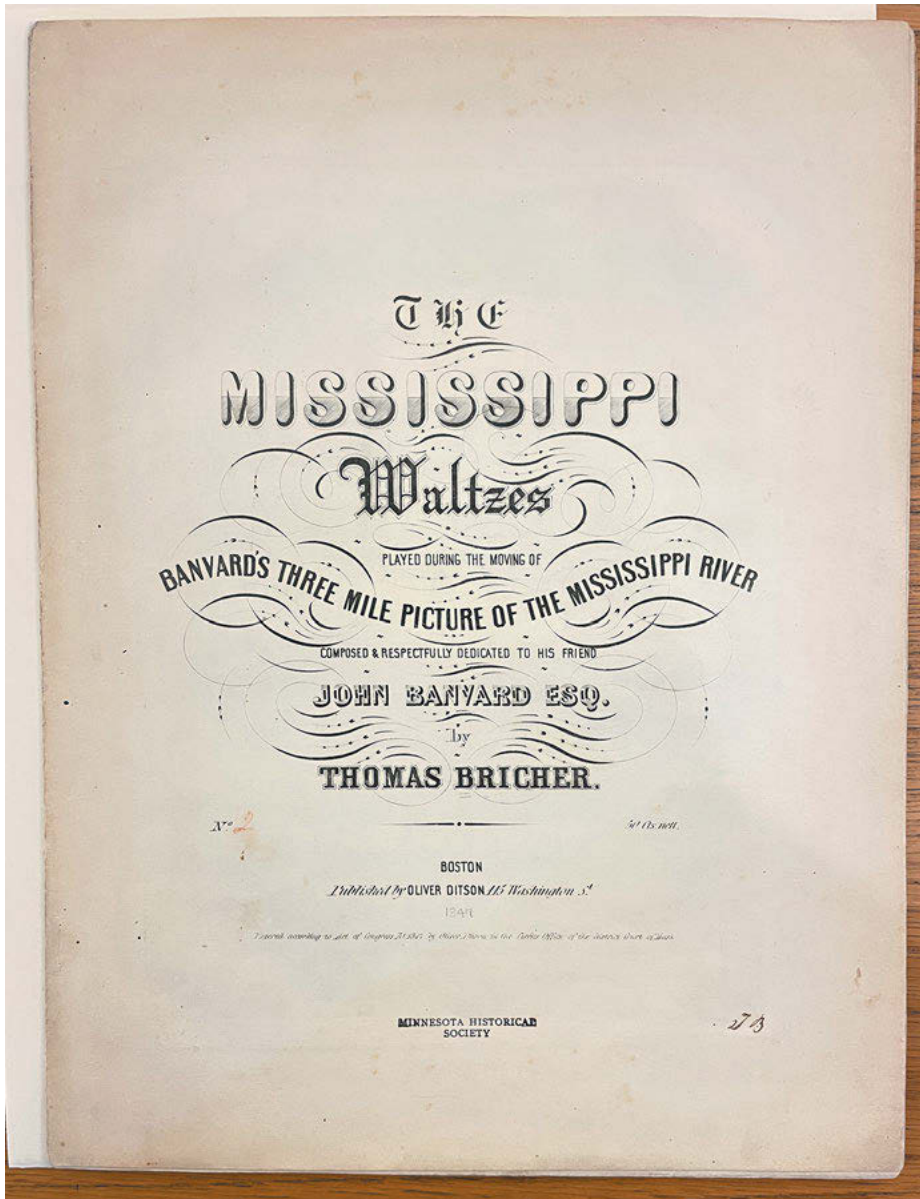


Fig. 16: *The Mississippi Waltzes*, cover, 1849. Thomas Bricher, composer. John Banvard, commissioner. Oliver Ditson, publisher. Engraving on paper, dimensions n.g. Image, N. Lowe; courtesy of the Minnesota History Society, Saint Paul, Minnesota; used with permission.

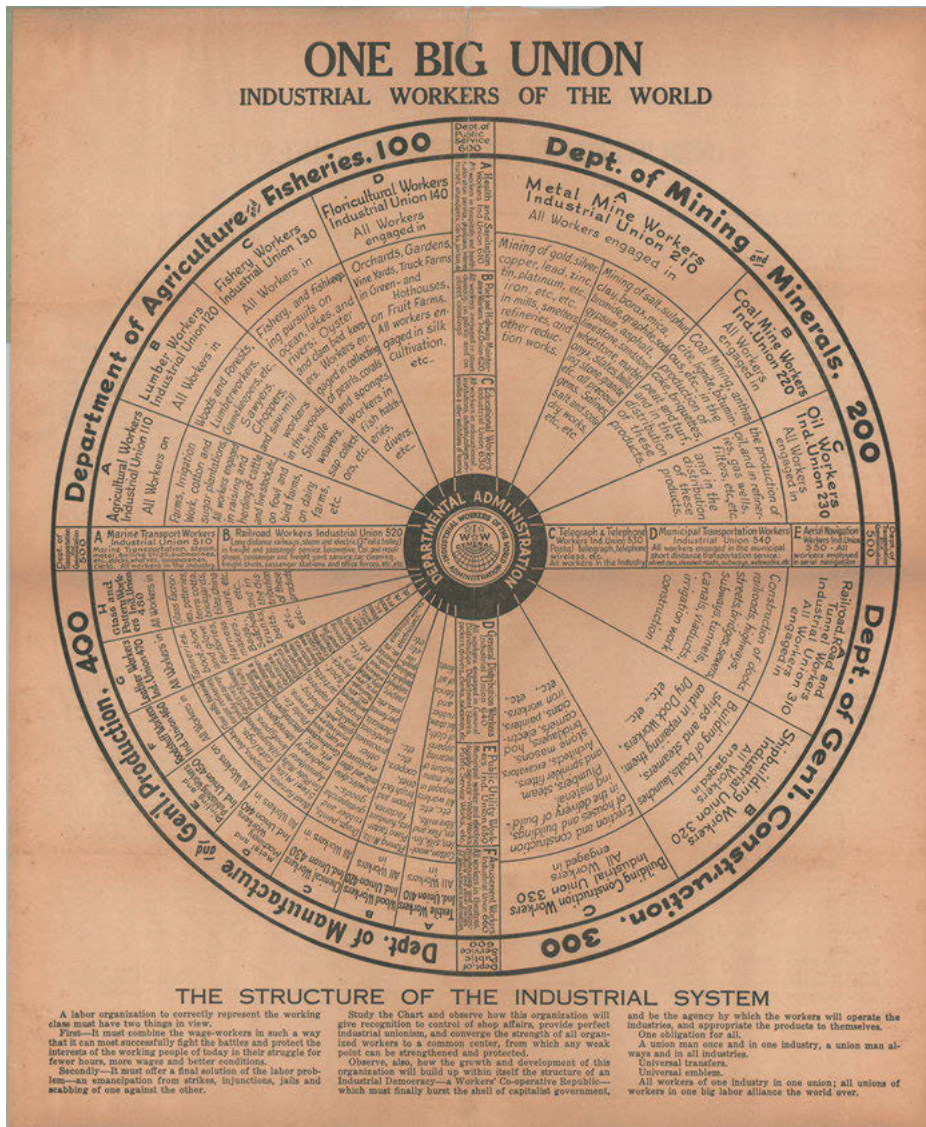


Fig. 17: Artist & printer unknown. *One Big Union*, 1922. Industrial Workers of the World. Lithograph on paper, 39.5 cm × 35 cm (15 1/2 in × 13 3/4 in). Image, Curtis Wright Maps, used with permission.

Author Biography

Molly Briggs is a landscape historian, design theorist, visual artist, and trained printmaker who studies immersive rhetorics in printed matter in order to discern the mediated shape of built and social space. She teaches core courses in design methods, theory, and research for undergraduates in Graphic Design and graduate students in Design for Responsible Innovation. Professor Briggs holds a PhD in Landscape Architecture History and Theory from the University of Illinois at Urbana-Champaign, an MFA in Printmaking with a minor in Photography from the Department of Art Theory and Practice at Northwestern University, and a BFA in Painting from the School of Art and Design at Illinois. Her dissertation, “The Panoramic Mode: Immersive Media and the Large Parks Movement” (2018), examines the commission, design, and reception of large urban park landscapes in nineteenth-century Europe and the United States in the context of a broader mediated culture of immersive spectacle. Professor Briggs currently serves as President of the International Panorama Council (IPC, Switzerland) and as an Executive Editor of the *Panoramic and Immersive Media Studies* Yearbook (De Gruyter, Germany, in association with IPC). She is a 2023 Map Library Fellow of the MacLean Collection (Illinois) and is the recipient of numerous scholarly, creative, and pedagogical grants, awards, and recognitions. She has been represented by Zg Gallery in Chicago since 2004.

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Daniel Jaquet, Sarah Kenderdine

The Digital Twin of the Panorama of the Battle of Murten: Notes on the Creation of the World's Largest Image

Abstract: The *Panorama of the Battle of Murten* (Louis Braun, 1893/1894) is the only Swiss historical panorama not accessible to the public. As part of the celebration of the 550th anniversary of the Burgundian Wars in 2026, the Foundation for the *Panorama of the Battle of Murten* and the Laboratory for Experimental Museology at the Swiss Federal Institute of Technology have undertaken a project to digitize and valorize the original painting. The digitization phase has now been completed, producing the largest digital image of an artwork (1,600 gigapixels). This report details this achievement from a technical point of view, and highlights the new strategies for valorization offered by the digital twin. The project is part of an exploratory approach, going beyond standards in the cultural industries and enabling advances in data science research, but also in new museology. The new possibilities offered by ultra-high-resolution images concern the fields of conservation, but above all the new paradigms of access to cultural heritage dealing with scientific imaging, large-scale visualization, humanities and public history.

Keywords: Ultra-high-resolution image, digitization, digital twin, cultural heritage, valorization, accessibility, public history

1 Introduction

The painted panorama heritage of Switzerland is unparalleled in the world. Three internationally renowned examples survive today, two of which are on permanent public display: the Thun Panorama created in 1814 (Ganz 1975) and the Bourbaki Panorama in

Acknowledgments: *Digitising and Augmenting the Panorama of the Battle of Murten* (DIAGRAM) is a project of the Laboratory for Experimental Museology (EPFL-CDH-DHI), in partnership with the Foundation for the *Panorama of the Battle of Murten*. The project team is composed of Prof. Sarah Kenderdine (lead), Dr. Daniel Jaquet (co-investigator), Jaap Leutscher and Huib Nelissen (engineers), Nikolaus Völzow (software engineer), Paul Bourke (image specialist), Raphael Chau (PhD student) and the eM+ collaborators. The first phase (2022–2023) of the DIAGRAM project has been supported by Loterie Romande, Municipality of Murten, Canton of Fribourg, Federal Office for Culture, the Association of the Friends of the Panorama and the Foundation Etrillard. Phase One™ is a sponsor for this project.

Daniel Jaquet, Sarah Kenderdine, Laboratory for Experimental Museology, Swiss Federal Institute of Technology, Lausanne, Switzerland

Lucerne from 1876 (Kämpfen-Klapproth 1985).¹ The third Swiss historic panorama, the *Panorama of the Battle of Murten* painted in 1893 (*Stiftung für das Panorama der Schlacht bei Murten*, ed., 2002) represents the events of 1476, when the Old Swiss Confederation defeated the army of the Duke of Burgundy, the most powerful prince in Europe at the time (Fig. 1). Perennially celebrated as a foundational event in Swiss and European history, the victory has been commemorated without interruption until today (Schöpfer, 1997). The original object, a 1,000 square meter panorama in oil paint, is considered a national treasure; however, it has been completely inaccessible to the public since it was last on display 21 years ago at the Swiss National Expo in 2002. Since then, this pivotal record of Swiss historical representation has been locked away from public view, rolled up in a secure storage unit.

The pristine condition of the original painting is unique. This is mainly because the panorama was so rarely exhibited, only between 1894–7 and 1904–7 and for six months in 2002 (Schaible 1997; Chau et al. 2024). The painted surface is close to its original state, having been rolled up in storage.² All the ideal prerequisites were in place to allow for an ultra-high resolution scan of the painting. Following conservation work on the painting in 2022, the digital twin of the Murten panorama was created in a three-month process in 2023, as part of a project entitled *Digitizing and Augmenting the Panorama of the Battle of Murten (DIAGRAM)*, led by the Laboratory for Experimental Museology of the Swiss Federal Institute of Technology in Lausanne.³

2 The Image-Capturing Process

The imaging process was designed based on the physicality of the object (3 rolls of ca. 10 × 30 meters), the condition of the painting and the technical criteria to enable continuous imaging and lighting at a very high level of precision (Fig. 2).

A custom-built inspection platform and digitizing rig have been developed, enabling automated mechanical navigation assisted by computer, with an accuracy of ±0.01 millimeters on the x and y planes (the z plane is fixed). The lighting is an Akurat D8 MK2, mounted at 45 degrees to the portion of the painting being photographed, thus providing a raked lighting. Cross polarization was employed to reduce specular highlights, which consisted of a linear polarizing sheet across the Akurat light surface

¹ There is a fourth panorama in Switzerland, the Einsiedeln panorama (*Crucifixion of Christ*, 1892), which is a replica of the original that burnt down in 1960 (Koller 2003).

² Two extensive conservation reports (2002 and 2023) detail the current state of the painting, documentation available on request in the archives of the Foundation for the Panorama of the Battle of Murten, stored at the Swiss National Library (Bern, Schweizerische Nationalbibliothek, Grafische Sammlung, EAD-MURT Stiftung für das Panorama der Schlacht von Murten 1476).

³ More details about the project on its webpage, available online: <https://www.epfl.ch/labs/emplus/projects/diagram/> (last accessed December 1, 2023).



Fig. 1: Louis Braun (Gerrman, 1836–1916), *Panorama of the Battle of Murten*, 1893/1894. Oil painting on canvas, 10 × 100 meters. Image, Foundation for the Panorama of the Battle of Murten, 2002. Used with permission.

and a similar linear polarizer rotated by 90 degrees on the camera lens. Both the camera and lighting remain at a constant distance above the painting's surface.

Each roll was placed adjacent to the imaging platform and unrolled one meter at a time. Each of these 1-meter strips consist of 4 columns and 59 rows of overlapping photographs. Horizontally, the photographs overlapped by 50 percent, vertically by 30 percent. This setup corresponds to the method known as the parallel-multi-viewpoint capture technique (Cabezosa-Bernal, Rodriguez-Navarro, Gil-Piqueras, 2021). Lens cast calibration (LCC) was performed on a white page for each strip, permitting compensation of the variation of illumination intensity across each photographed area arising from the raked lighting and lens vignetting. For each strip a Spyder color chart is photographed for color calibration, as well as a curved metallic surface to check the consistency of the cross polarization. The three rolls were imaged in a

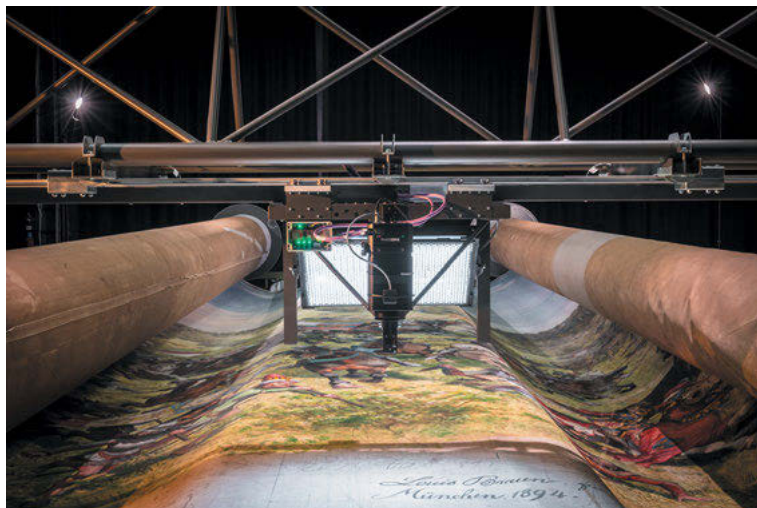


Fig. 2: Detail of the motorized photographic process for the digitization of the Panorama of the Battle of Murten at the EPFL Laboratory for Experimental Museology. Image credit: EPFL, eM+ 2023.

month and a half of work by our team of specialists. The postprocessing of the image (see 3) occurred in the subsequent months, the entire process taking three months.

The imaging process took advantage of an ultrahigh resolution camera (Phase One, iXH 150-megapixel camera with a 72-millimetre MKII lens). The target resolution of 1000 dpi was achieved with 27,000 photographs, each capturing a 360 by 270 millimeters area of the canvas. Industry standard software (PtGui) designed for processing 360 panoramas was used to detect feature points between adjacent photographs and ultimately to align and stitch the photographs together. The result, at 1,600 gigapixels, is the largest digital image of a physical object ever created. In terms of storage, it occupies almost 5 terabytes as an uncompressed 8-bit RGB image (1,600,000,000,000 by 3 color components by 2 bytes). Its physical to pixel ratio is 40 pixel per mm of painting (1px=25microns), being equivalent to one pixel at the width of a fine hair. The resulting image allows for an unprecedented level of zoom (Fig. 3).

3 Post-Processing the World's Largest Image

Image size and resolution of the digital twin of the Panorama of the Battle of Murten far exceed the standards used for digital preservation, or for exploitation of a digital image in any type of display, online or streaming in a physical installation for visualization. Processing to stitch the image and solutions for streaming the image, or multiple parts of the image to adapted resolution to allow for maximum zooming capacity

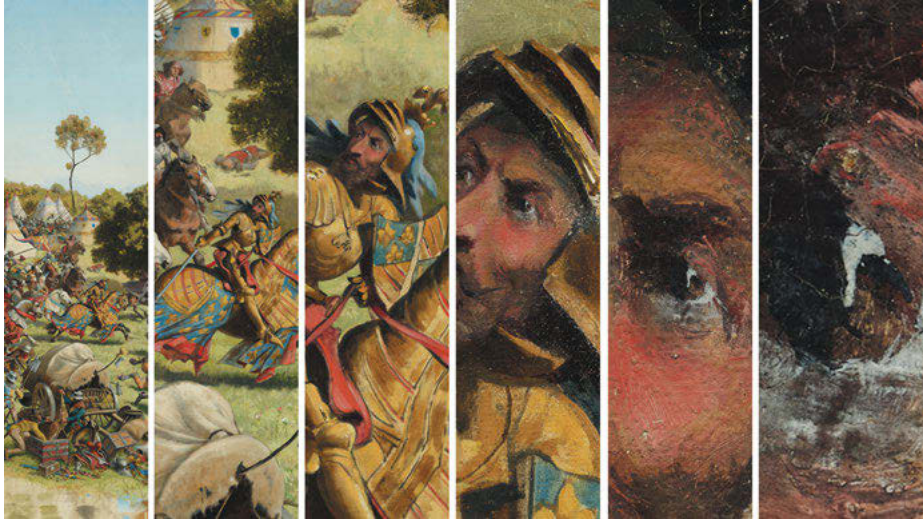


Fig. 3: Visual representation of the level of zoom of the Digital Twin of the Panorama of the Battle of Murten. Image credit: EPFL, eM+ 2023.

are part of the data science challenges of the project.⁴ The image must be systematically adapted for each application by data scientists.

One of the advantages of having a gigapixel image at that resolution is that it can be used in large-scale visualization systems. The Laboratory for Experimental Museology is leading the research for the development of such systems with international museum partners. The digital twin will be displayed in 2026 at the History Museum of Bern in the system Panorama+ (Fig. 4), which is an interactive 360-degree stereoscopic touring panoramic platform, with advanced real-time graphics and cluster-based computing, a resolution of 20,000 pixels in the horizontal axis, achieved using $5 \times 4K$ 3D projectors together with surround sound from 32 channels.

By way of comparison, the previous largest gigapixel image of a work of art was produced by the Rijksmuseum in Amsterdam in 2022. The 717 gigapixel (925,000 by 775,000) digital image of Rembrandt's (1606–1669) masterpiece *The Night Watch* (1642), measuring 3.78 by 4.53 meters is half the size of the digital twin of the Panorama of the Battle of Murten. The high level of detail has facilitated studies into how the masterpiece was painted, including insights into pigments and chemical composition for con-

⁴ Our data scientists are currently working to find the best solutions offered by image processing software (Adobe suite) and software specialized in panoramic image stitching (PtGui), while producing code for customized applications. The image viewing platform used to date is the open-source web based Mirador viewer.



Fig. 4: Preview of the digital twin of the *Panorama of the Battle of Murten* inside eM+ 3D 360-degree display system Panorama+. Image credit: EPFL, eM+ 2023.

servation purpose and research (Gabrieli et al. 2021).⁵ For the case of the digital twin of the Panorama of the Battle of Murten, the level of details also allows for similar investigation on the production and composition of the painting. It also opens up possibilities for computer-assisted digital restoration projects.

The image will be available for researchers for its study through a dedicated website presenting the image on environment following the open science principles (FAIR), enriched with linked open data (LOD) and metadata regarding the studies conducted by the research team, and the augmentations produced for its public display.

⁵ Accompanied by data from macro X-ray fluorescence scanning (macro-XRF), hyperspectral imaging, and infrared reflectance imaging spectroscopy (RIS), this gigapixel image has allowed the museum to investigate the painting's condition and make plans for its conservation, undertaken two weeks after the release of the gigapixel image. The imaging of the Murten Panorama did not include these additional types of imaging and conservation studies.

4 An Augmented Image for Interpretation of Contested Histories

The unprecedented digital resolution of the DIAGRAM project will be used to pioneer new strategies and methods of interpretation for this magnificent yet contested historical artefact for exhibitions and networked access. Enriched with 4D volumetric video, annotated 3D objects and dynamic ambisonic soundscape, the digital twin will enable diverse publics to engage with pioneering research across the three scientific domains of digital heritage, humanities and public history.

The panorama was instrumentalized in political discourse in the late nineteenth-century, however its societal and cultural meaning has changed today. Historical discourse analysis from both victorious and vanquished perspectives makes it possible to deconstruct what is depicted in the Murten panorama, painted 417 years after the battle took place (Grosjean 1976). These perspectives need to be critically explored to explain the historical value of this nineteenth-century depiction of a late Medieval battle. Crucially, the painting is not a reliable basis to understand the original battle, principally because the panorama was created following the 400th anniversary of the event in 1876, as part of a new national identity discourse in Switzerland (Sieber-Lehmann 1995). Further complicating the interpretation of the Murten Panorama, nationalistic memorial narratives that privileged the Swiss as victors powerfully influenced Louis Braun, the painter of the panorama (Grosjean 1976; Chau et al. 2024).

The painter concocted these scenarios based on historiographical discourses regarding the battle (Feller & Bonjour 1962, Schöpfer 1997; Sieber-Lehmann 1995). For example, the scenes based on Burgundian loot are drawn from nineteenth-century museum inventions, which continue to pervade the interpretation of the battle today (Deuchler 1975). Braun developed the work from a map of the battle that military historians invented in 1876, while other objects depicted do not originate from the battle but from later Swiss events, such as the conquest of Vaud by Bern in 1536. He also took significant artistic license in the representation of heraldic devices and costumes, for example, the ‘castle-tent’ of Charles the Bold is based on the 1606 engraving Plan of Martin Martini (Fig. 5, see Jaquet & Kenderdine 2020). Interpretation of the iconographical sources available to the painter, such as fifteenth-century illustrated chronicles and seventeenth-century engravings, were further cast in a nineteenth-century mindset. Other aspects call for critical analysis, including the romanticization of the battlefield: for example, there is little bloodshed shown of this gory battle, while ladies of the court flee the battlefield with musicians on horses (Fig. 6).



Fig. 5: Left: Tent of Charles the Bold. Detail of the Plan Martini, 1606 (Zürich, Zentralbibliothek, Geschichte 1476 Murten IV). Image credit: Zentralbibliothek, e.rara.ch, doi 10.3931/e-rara-51877. Right: Tent of Charles the Bold. Detail of the *Panorama of the Battle of Murten*, 1893/1894. Image credit: EPFL eM+ 2023.



Fig. 6: Lady of the court fleeing the battlefield with a musician on horseback. Details of roll 1 of the *Panorama of the Battle of Murten*. Image credit: EPFL eM+ 2023.

Valorization of the Digital Twin (2025–2026)

Digital augmentation of the panorama will significantly captivate and guide public access to an understanding of the artwork. Additional datasets will include 3D models of objects, volumetric videos and motion capture of scenes in the painting, situated within a historically informed soundscape.⁶ Research into the material culture evidenced in the panorama has identified dozens of related artefacts held in Swiss museums, such as costumes, weapons or accessories (Fig. 7).



Fig. 7: Examples of the Panorama of the Battle of Murten scenes matched with museum objects (Zürich, Landesmuseum) to be 3D modelled for augmentations. Image credits: Zürich Landesmuseum and EPFL eM+ 2023.

The digital twin and its augmentations will be on display in four temporary exhibitions by museum partners in Switzerland in 2025–2026, in the context of the 550th anniversary of the Burgundian Wars (1476–2026).⁷ The choice of content and interaction design will be specifically curated for each exhibition. Interpretation by the project researchers and partner experts of featured objects or scenes, including critiques of contested representations in the painting, will be added to the annotation database on the website, designed for researchers. Annotations and ontologies recording research with provenance and media, will be accessible through a specially designed web interface featuring an access for general audience to accompany the exhibitions and another for researchers with ontologies, to be released in 2025.

The current project is not only a breakthrough in data science and the digitization of cultural heritage, but also a major contribution to the development and exploitation of digital twins in new museology. The strongest point of this project is to make a previously inaccessible national treasure available to the public through new interpretation and visualization strategies, while safeguarding its conservation.

⁶ Ongoing research in partnership with the research project of Martin Clauss entitled *Der laute Krieg und die Laute des Krieges. Belliphonie im Mittelalter* (2021–2024, Technische Universität Dresden).

⁷ Museum für Gestaltung, Castle of Grandson, Museum Murten and Bernisches Historisches Museum.

Author Biographies

Daniel Jaquet is a medievalist, with a background in literature, history of science and material culture of the early modern period. He received his PhD in history at the University of Geneva in 2013. He taught at the universities of Geneva, Lausanne, Bern and Neuchâtel (2008–2023). He was a visiting scholar at the Max Planck Institute for History of Science (Berlin, 2015–2016), and an associate researcher at the Renaissance Centre of the University of Tours (2016–2017). His teaching and research specialisations are martial culture, production, transmission and reception of martial knowledge in Europe (fifteenth–nineteenth centuries). He is the project manager and co-lead researcher of the project “Digitizing and Augmenting the Panorama of the Battle of Murten” at the Laboratory for Experimental Museology (EPFL, 2022–2026). He is also a certified museologist (ICOM Switzerland 2021) with experience in state museums and has curated five exhibitions.

Professor Sarah Kenderdine researches at the forefront of interactive and immersive experiences for galleries, libraries, archives and museums. In widely exhibited installation works, she has amalgamated cultural heritage with new media art practice, especially in the realms of interactive cinema, augmented reality and embodied narrative. In addition to her exhibition work she conceives and designs large-scale immersive visualisation systems for public audiences, industry and researchers. Since 1991, Sarah has authored numerous scholarly articles and six books. She has produced 80 exhibitions and installations for museums worldwide including a museum complex in India and has received a number of major international awards for this work. In 2017, Sarah was appointed Professor of Digital Museology at the École Polytechnique Fédérale de Lausanne (EPFL), Switzerland where she has built a new Laboratory for Experimental Museology (eM+), exploring the convergence of aesthetic practice, visual analytics and cultural data. She is also Director and lead curator of EPFL’s new art/science initiative, EPFL Pavillons.

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Conference Program

32nd International Panorama Council (IPC) Conference

Panoramas, Immersive Media, and Lost Worlds

Hosted by the University of Iowa Museum of Natural History

Iowa City, Iowa, USA | September 27–30, 2023

Shown in local time, Iowa City

DAY 1 | WEDNESDAY, SEPTEMBER 27

Location: University of Iowa Old Capitol Museum, 21 N. Clinton Street, Iowa City, Iowa

12:30–13:00 In-person Check-in for Executive Board Members
University of Iowa Old Capitol Museum

13:00–15:00 Executive Board Meeting
Executive Boardroom, 2390 University Capitol Center (Staff will escort to meeting location)

15:00–16:00 In-person Check-in for Attendees and Registration
University of Iowa Old Capitol Museum, 1st floor rotunda

16:00–16:15 University of Iowa Museum of Natural History Welcome
Bruce Teague, Mayor, City of Iowa City

16:15–16:30 IPC Presidents' Welcome
Sara Velas & Molly Briggs

16:30–16:40 IPC Secretary-General's Welcome
Thiago Leitão de Souza

17:00–17:45 Tour of University of Iowa Museum of Natural History, including dioramas and Laysan Island Cyclorama

18:00–20:00 Dinner at Restaurant Wilson's Ciderhouse
4823 Dingleberry Rd NE #2, Iowa City, IA

The IPC Conference is made possible in part by support from our 2023 Institutional Members, whose missions help shape our mission.



DAY 2 | THURSDAY, SEPTEMBER 28

Location: University of Iowa Old Capitol Museum, 21 N. Clinton Street, Iowa City, Iowa

08:45–09:00 Arrival and Registration

09:00–10:15 **Session I | Lost Panoramas**

Moderator: Melissa Wolfe, St. Louis Art Museum, Missouri

A Story of Sad Losses: On the Fates of Some Nineteenth-Century Panoramas

Gabriele Koller, Jerusalem Panorama, Altötting, Germany

Keywords: Panorama, Nineteenth Century, Loss, Fate

The Kilauea Cyclorama: More Than a Picture, a “Spectacular Cyclorama”

Suzanne Wray, independent researcher, New York, USA

Keywords: Kilauea, Volcano, Scenic Effects

Panorama, Cinema and Photography: An History of Dead Ends, Forgotten Cameras, Lenses and Social Phenomena

Luca Vascon, VR artist, photographer, and video maker, Venice, Italy

Keywords: Cinema, Photography, Technology, Dead Ends, Experience Translation, Social Phenomenon, Totalrama

10:15–10:35 Coffee Break

10:35–11:50 **Session II | The Immersive Worlds of Panoramas**

Moderator: Leen Engelen, LUCA School of Arts/KU Leuven, Belgium

Listening to the Aural Heritage of Banvard’s Mississippi Panoramas – A Speculative Re-enactment

Nicholas Lowe, The School of the Art Institute of Chicago

Keywords: Moving Panorama, John Banvard, Mississippi Waltzes, The White Fawn, Piano Music

Inverting the Panorama: S.P. Dinsmoor’s *Garden of Eden*

Lisa Stone, independent curator and preservationist, Neshkoro, Wisconsin

Keywords: Artist-Built Environment, Dinsmoor, Eden, Fraternal orders, Kansas

Panoramic Inscriptions: Perspectival Typography and Pictorial Lettering in Immersive Ephemera

Molly Briggs, University of Illinois at Urbana-Champaign

Keywords: Immersion, Perspectival Typography, Pictorial Lettering, Graphic Epistemologies, Social Space

12:00–13:45 Lunch

Hanson Gallery, Old Capitol Museum, Iowa City, Iowa

12:45–13:30 Optional tour of University Libraries Conservation Lab

University Library, 125 W Washington St, Iowa City, Iowa

13:45–15:00 Session III | Lost Voices*Moderator: Molly Briggs, University of Illinois at Urbana-Champaign*

Pansteroramas: The Colonial Touch, or The Power to Represent Comprehensively

Blagovesta Momchedjikova, New York UniversityKeywords: Pansteroramas, Comprehensive Exhibits, Miniatures, Agency, Colonialism, Power, Ideology

*Shengjing Panorama: Re-crafting the Urban Ephemera of Colonial Shenyang in Historic Los Angeles***Weiling Deng and Jonathan Banfill, Champlain College, Burlington, Vermont; Ruby Carlson and Sara Velas, The Velaslavasay Panorama, Los Angeles, California**Keywords: Ephemera, Manchuria, Empire, Colonial Periphery, Cosmopolitanism

Lost Authority, Found Voices: “New Red Order” and the Panorama of the Monumental Grandeur of the Mississippi Valley, c. 1850

Melissa Wolfe, St. Louis Art Museum, MissouriKeywords: Moving Panorama, Early New World Archaeology, Montroville W. Dickeson

15:00–15:20 Coffee Break

15:20–18:00 Session IV | Panorama Conservation and Saving the *Faux Terrain* – Round Table*Moderator: Melissa Wolfe, St. Louis Art Museum, Missouri*

The Laysan Island Cyclorama

Liz A. Crooks, Cindy E. Opitz, Jessica M. Smith, University of Iowa Museum of Natural History

The Laysan Island Cyclorama, Iowa City, Iowa

Liz A. Crooks, Director, Pentacrest Museums, University of Iowa, and Bruce Scherting, Director, Project Art, University of Iowa Hospitals and Clinics

The Battle of Atlanta Cyclorama, Atlanta History Center, Atlanta, Georgia**Gordon Jones, Director, The Battle of Atlanta Cyclorama**

Bourbaki Panorama, Lucerne, Switzerland

Patrick Deicher, President, Bourbaki Panorama Foundation

Jerusalem Panorama, Altötting, Germany

Gabriele Koller, Jerusalem Panorama Foundation, and Ulrich Weilhammer, Weilhammer Conservation, Gangkofen, Germany

18:15–18:45 Literary Walk Guided TourDowntown Iowa City, IA

19:00–21:00 Dinner at Restaurant 126126 E Washington Street, Iowa City, IA

DAY 3 FRIDAY, SEPTEMBER 29

Location: University of Iowa Old Capitol Museum, 21 N. Clinton Street, Iowa City, Iowa

08:45–09:00 Arrival and Registration

09:00–10:15 **Session V | Panoramic Vision**

Moderator: Sara Velas, The Velaslavasay Panorama, Los Angeles, California

“Mysterious Barren Lands”: The Panoramic Legacy of Arctic Documentary Films

Lora Maslenitsyna, Yale University, New Haven, Connecticut

Keywords: Documentary, Arctic, Pan Shot, Landscape, Climate Crisis

The Images in Circarama as Evidence of a Historical Moment and Place

Silvia Mascia, University of Udine, Italy

Keywords: Circarama, Panoramic Cinema, Widescreen, Expo

Immersive Illustration to Recreate Lost Worlds: 360VR Documentaries for The World War II Foundation

Chiara Masiero Sgrinzatto, independent artist, Venice, Italy

Keywords: Spherical Drawings, Immersive Illustration, 360° Re-constructions, VR Documentaries, Time-Travel Panoramas

10:15–10:35 Coffee Break

10:35–11:50 **Session VI | Panoramas and Historical Context**

Moderator: Nicholas Lowe, The School of the Art Institute of Chicago

125 Years of Agony and Revitalization of a Czech Panorama

Jean-Claude Brunner, independent researcher, Vienna, Austria

Keywords: Battlefield Panorama, Nineteenth Century, Czech Republic, Hussites, National Revival

Rebuilding a Lost World: Trompe l’Oeil, Panorama and Staging an Exhibition on Illusion in America

Stephanie Heydt, High Museum of Art, Atlanta, Georgia

Keywords: American Art, Illusion, Nineteenth Century, Exhibition

“Come with Me”: Grant Wood’s *Imagination Isles* Panorama

Sean M. Ulmer, Cedar Rapids Museum of Art, Iowa

Keywords: Grant Wood, Imagination Isles, Landscape, Mural, Cedar Rapids

12:00–13:30 Lunch

Hanson Gallery, Old Capitol Museum, Iowa City, Iowa

13:30–15:10 Session VII | Virtual Reality and Recovering Panoramas*Moderator: Gabriele Koller, Jerusalem Panorama, Altötting, Germany*

VR Remediation of Invisible Panoramas

Christl Lidl, Guest Artist Laboratoire MINT, Université de Lille, BelgiumKeywords: Virtual Reality Experience, Remediation, Vr Scenography, Immersive Research Tool

Virtual Reality for Cultural Heritage: How 3D Models, VR and Gaming Technology Extend the Reality

Karolina Wójtowicz, visual and architectural designer, Wrocław, PolandKeywords: Virtual Reality, VR, 3D models, Cultural Heritage, Virtual Tours

The Panorama of Rio de Janeiro by Victor Meirelles and Henri Langerock: Part 6 – Exploring the Virtual *faux terrain* in a 360 Experience by Game Engines**Thiago Leitão de Souza, Universidade Federal do Rio de Janeiro, Brazil**Keywords: Panorama of Rio de Janeiro; Victor Meirelles; Henri Langerock; Game Engines; Virtual Reality

Unveiling the Secrets of the Panorama du Congo

Leen Engelen, LUCA School of Arts/KU Leuven, Belgium, and Victor Flores, Lusofona University, PortugalKeywords: Panorama du Congo, Alfred Bastien, Paul Mathieu, Virtual Reality, Imperial Panorama

15:10–15:30 Coffee Break

15:30–16:45 General Assembly

16:45–18:15 Updates from informal speakers

19:00–21:00 Dinner at Iowa Chop House
223 E Washington Street, Iowa City, IA

DAY 4 SATURDAY, SEPTEMBER 30

Day Trip to Cedar Rapids Museum of Art and Grant Wood Studio

09:00	Departure by Coach from Graduate Hotel
10:00–11:00	Visit to Cedar Rapids Museum of Art (CRMA) 410 3rd Ave SE, Cedar Rapids, IA Led by CRMA Executive Director Sean Ulmer
11:00–12:00	Visit to Grant Wood's studio 810 2nd Ave SE, Cedar Rapids, IA

(continued)

12:15–13:15	Lunch at NewBo City Market (https://www.newbocitymarket.org/explore-the-market) 1100 3rd St SE Cedar Rapids, IA
13:30–13:45	Stop at the Cedar Rapids airport Departure from Cedar Rapids Airport
13:45	Return to Graduate Hotel, Iowa City, IA

Presentation Abstracts & Author Biographies

The IPC Conference is made possible in part by support from our 2023 Institutional Members, whose missions help shape our mission.



Session I | Lost Panoramas

A Story of Sad Losses: On the Fates of Some Nineteenth-Century Panoramas

Gabriele Koller, Jerusalem Panorama, Altötting, Germany

Abstract: My proposal for a presentation refers to the “lost worlds” of the conference theme. When dealing with the panorama’s history in the nineteenth century one is amazed by how little original material has survived. There are mainly texts and prints; occasionally we find preparatory studies and drawings. But when one considers the quantity of panoramas that once existed it is only the tiniest proportion of the total number of panoramas that survive. The history of the panorama phenomenon is a story of sad losses. Looking at the panorama situation in London, it is striking that none of the 150 or so panoramas exhibited over a period of 70 years in the Panorama in Leicester Square and the Panorama in the Strand have survived. The same goes for Paris. Here from around 1800 onwards only about 30 panoramas were exhibited within 70 years, far less than in London. None of those survive either. What happened to all these panoramas and why do we know so very little about their fates?

Drawing on an earlier unpublished conference paper I will examine the factors which caused the immense loss of so many panoramas that once existed. The presentation will be showing how those incidents came about. The intention is to reveal some of the fates and relate what happened, shedding new light on the tragic loss of several nineteenth-century panoramas. In the main the paper will be dealing with the 360-degree panorama as invented by Robert Barker in 1787.

Keywords: Panorama, Nineteenth Century, Loss, Fate

Biography: Gabriele Koller is an art historian and panorama researcher. Her MA thesis was devoted to Gebhard Fugel, the artist responsible for the Panorama of Jerusalem and the Crucifixion of Christ, Altötting, Germany. She has published on various aspects of panorama history. For the International Panorama Council of which she is a member since its foundation in 1992 she edited *The World of Panoramas: Ten Years of International Panorama Conferences* (2003), *The Panorama in the Old World and the New* (2010), and *More Than Meets the Eye: The Magic of the Panorama* (2019). She currently serves as Vice President of the International Panorama Council. She is a member of the Executive Board of the Foundation Panorama Altötting, Germany, and is the Panorama's Curator. gabriele_koller@gmx.de

The Kilauea Cyclorama: More Than a Picture, a “Spectacular Cyclorama”

Suzanne Wray, Independent Researcher, New York City, USA

Abstract: The cyclorama of Hawaii's Kilauea Volcano was first displayed at Chicago's World Columbian Exposition of 1893 on the Midway Plaisance. This depiction of “the inferno of the Pacific,” accompanied by a Hawaiian Village with musicians and dancers, was intended to promote tourism to Hawaii, to gain support for American annexation of the islands, and of course to create a profit for the cyclorama company that created it. Newspaper articles emphasized that there would be much more to the exhibition than a “mere painting and relief foreground” that had previously comprised a cyclorama, that “every device known to theatrical mechanism and electro-pyrotechnics” would be used: there would be simulated volcanic eruptions regularly, shifting lights, fire effects, and escaping steam. Some of these scenic effects were produced by a Triple Arc Light Stereopticon which had been constructed for use in the volcano panorama.

Walter Burridge (1857–1913), a Chicago scene painter, had visited Hawaii two years earlier to see the volcano in eruption, and take photographs and sketches. Among those working with Burridge was C. H. Ritter, credited with modeling the foreground and lava forms.

The Kilauea Cyclorama appeared later in several other expositions, including the 1894 Mid-Winter Fair in San Francisco, California.

Keywords: Kilauea, Volcano, Scenic Effects

Biography: Independent researcher Suzanne Wray has presented her research on panoramas and related “optical entertainments” at conferences of the International Panorama Council and the Magic Lantern Society. gribble@earthlink.net

Panorama, Cinema and Photography: An History of Dead Ends, Forgotten Cameras, Lenses & Social Phenomena

Luca Vascon, VR Artist, Photographer and Video Maker, Venice, Italy

Abstract: There are some interesting and quite untold parts of photography history. Tools and concepts that evolved thanks to the painted panorama. Photography and cinema techniques can be a toolbox in aiding building something else, can be used as a recording device, as a way of translating an experience from a media to another, or even in a different level to tell stories and as a media to create new experiences.

Some of the tools are well documented but kind of lost in collectors cabinets, like Sutton's camera and its unique water optics. Some others like Lumiere periphote had their quirks but were intended for the ambitious Photorama theatre, others like the Kodak Panoram and the Kodak Cirkut became a new language and 1900 cameras are still in use today, and the same concept was continuously updated and sold in many forms, in some times becoming popular, and it's still in use today.

The same thing happened in cinema, and after going through few more or less known examples Cineorama, Imax, etc., I'll focus on a recently rediscovered italian device and concept called "Totalrama" explaining its function principle and showcasing some "frames" extracted from the continuous frameless movie and translated in a contemporary interactive media.

I'll show whenever possible an attempt of "media and experience translation" to contemporary VR explaining my process and my opinion in what's lost and what's gained.

Keywords: Cinema, Photography, Technology, Dead Ends, Experience Translation, Social Phenomenon, Totalrama

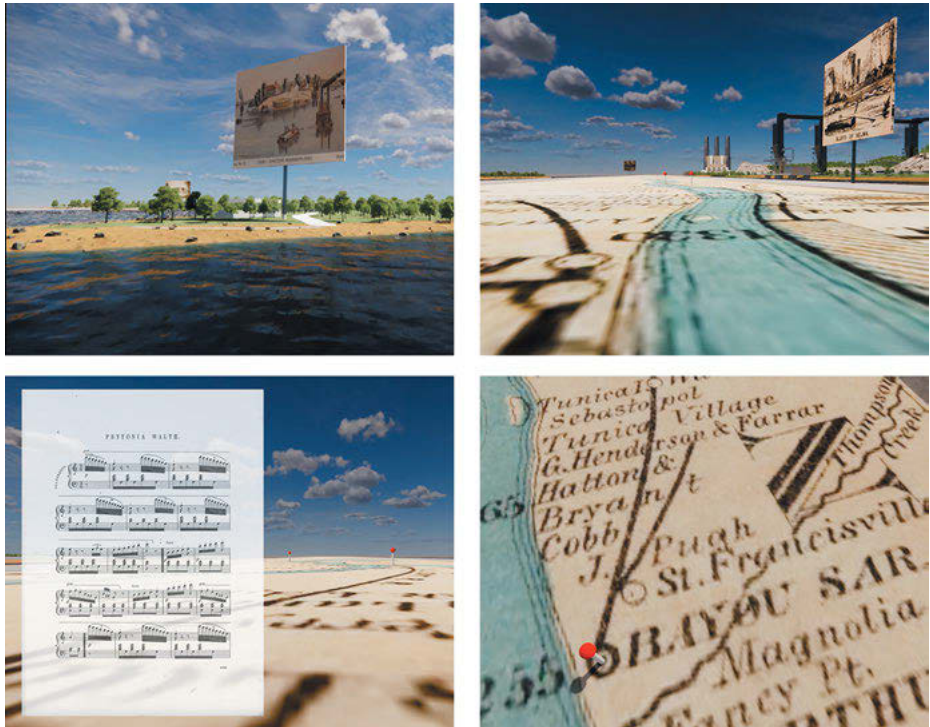
Biography: I'm a 360° VR artist, photographer and video maker, but I'm also a camera and photographica collector. I started at the end of '90 with the very beginning of the digital VR pioneering era. I felt as a natural move to research panorama history in order to look for answers about the media's nature, languages and possibilities. My attitude is to make or adapt my own tools in order to achieve the result that I want, be they cameras, special heads, new techniques, approaches, languages.

At first working as multimedia lab teacher in IUAV university of Venice, then as co-founder and CEO of the visual services company "Officine Panottiche," then as a self-employed, I took part in major cultural and educational projects in Italy and abroad. A pioneer of digital panoramic photography, I have a thorough knowledge of the technology (hardware and software) related to interactive imaging, high-resolution photo and video, navigable videos and time-lapses, and have developed an extensive network in that particular community through years of active involvement. My fields of expertise include analogical and digital photography (HDR techniques, high-resolution gigapixel images, documentary, scientific, scale models, studio photography, geological and architectural surveys; interaction design (VR photography and video, immersive reality, interaction design for cultural heritage; and photogrammetry for education, research, and development. luca.vascon@gmail.com

Session II | The Immersive Worlds of Panoramas

Listening to the Aural Heritage of Banvard's Mississippi Panoramas—A Speculative Re-enactment

Nicholas Lowe, The School of the Art Institute of Chicago, USA



Nicholas Lowe, (English-born American, b. 1963). Jeffrey Ose Ohuaregbe (Nigerian, b. 1999). Four animation stills, 2023. Composite figure above incorporates images by Henry Lewis, *Das Illustrierte Mississippithal*, Dusseldorf, Germany. 1858, and *Colony & Fairchild's Patent Ribbon Map of the Father of Waters*, John George Bartholomew & Son, St. Louis Missouri, 1866.

Abstract: John Banvard's (American, 1815–1891) “Panorama of The Mississippi River” (circa 1847) is generally understood to have been one of the most influential performative experiences of its time. Banvard's mastery of moving panorama performance as a form is creditworthy and many first-hand accounts confirm his accomplishments. By reputation, Banvard realistically depicted the river and its adjacent landscapes and contemporary reports insist that watching his performances accurately mimicked the

experience of river boat travel itself. The particular merits in the experience, of seeing the performance event and its constructed illusions and theatricality are themselves unavailable for study today. More accurately, it is only now through the remaining paper archival elements that details of the performances remain. Performance, like all lived experiences, ceases to exist beyond the event, visible only through ephemeral remains. Consequently, any sense of what made Banvard's delivery so engaging and his performances so skillful can only ever be pieced together in a speculative manner from its scant remains.

Amongst the range of archival materials there are four piano manuscripts that remain relatively unexplored for their relationship to the visual content and sensory qualities of Banvard's performances. They are, "The Mississippi Waltzes," (published in Boston, 1847), and two versions of "The White Fawn of the Mississippi River" a setting of a poem by John Banvard for piano and soprano voice (a first version was published in Boston, 1847 and second in London, 1848). A study of their content can be taken as a confirmation of specific narrative, dramatic and visual, details, pairing real physical locations on the Mississippi river with narrative and visual content in the Panorama. The idea of a speculative re-enactment is offered here as an approach to re-visit some of the performance elements of Banvard's work from the vantage point of the early twenty-first century. Six pieces of the music were performed by pianist Doreen Lee, and Mezzo-Soprano Élise DesChamps (faculty at the University of Iowa School of Music) to a contemporary audience in Iowa City at the 32nd International Panorama Council conference as part lecture, part recital, part moving image projection. The intention was to re-situate Banvard's panoramic "lost worlds" alongside their sonic counterparts adjacent to the landscapes that inspired them. Given the total absence of Banvard's performance as an observable artifact, if it is not possible to see the panorama for ourselves we might at least be able to listen to part of its residue.

Keywords: Panorama, Mississippi River, Piano Music, Performance, Heritage.

Biography: Nicholas Lowe is an interdisciplinary visual artist, writer, educator and curator whose work is known for its contextual and documentary approaches. Lowe is a Professor at the School of the Art Institute of Chicago and is the John H. Bryan Chair of Historic Preservation. Nicholas has been a member of the International Panorama Council since 2018 and serves currently as the Outreach Coordinator, and is an Executive Editor for the *Panoramic and Immersive Media Studies Yearbook*. nlowe1@saic.edu

Inverting the Panorama: S. P. Dinsmoor's "Garden of Eden"

Lisa Stone, Independent Curator and Preservationist, Neshkoro, Wisconsin, USA



Northwest view, Cabin Home. S.P. Dinsmoor (American, 1843–1942), Lucas, Kansas. Vintage photo postcard, circa 1920, photographer unknown. Image, Friends of S.P. Dinsmoor's *Garden of Eden* Archive, Lucas, Kansas; used with permission.

Abstract: S.P. Dinsmoor's (1843–1932) early experiences included serving in the Civil War and early initiation into the Free Masonic fraternal order. In 1888 Dinsmoor moved his family from Ohio to north central Kansas. To attract settlers the region had been advertised widely (and spuriously) as "a Garden of Eden." Dinsmoor farmed until 1905, when he and his family moved to the town of Lucas, Kansas. At age 64, Dinsmoor spontaneously combusted into a *placemaker extraordinaire*, creating an expanded spatial narrative between 1907 and 1924, in which he expressed his social, political, spiritual, and deeply personal beliefs. Using locally-quarried limestone and concrete, Dinsmoor's *Garden of Eden* is an unexpectedly grand panoramic environment of unparalleled originality in the dusty Great Plains.

After completing his "Cabin Home" in 1907, Dinsmoor animated the property with an elaborate tree-of-life-like structure upon which mythical and historical figures, animals, and symbols were perched in an elevated, wrap-around display, expressing Dinsmoor's complex ideas in dialectical form. Through decades of participation in fraternal rituals, Dinsmoor was intimately familiar with the power of navigating symbolically-organized spaces. It's almost certain he had experienced panoramas depicting Civil War and other scenes, popular in his time. Moving through his sculptural spectacle, from Adam (in the Biblical Eden) in his Masonic Apron, to the Crucifixion of Labor, and

scenes in between, Dinsmoor's *Garden of Eden* is an inversive, immersive, openwork panorama, requiring viewers to traverse an outdoor space, looking up in the air from allegory to allegory. Backlit by ever-changing natural light, enlivened by breezes and the movement of clouds, Dinsmoor's panorama heightens viewer's awareness of one's place on earth, and in the grand arc of history, from one story of creation to the present moment. This presentation explores the pathway from tableau to tableau and comments on Dinsmoor's urgent and then-radical presentation of populist perspectives in panoramic sculptural form in his *Garden of Eden*.

Keywords: Artist-Built Environment, Dinsmoor, Eden, Fraternal Orders, Kansas, Populism

Biography: Lisa Stone is an independent curator and preservationist, and retired (2020) curator of the Roger Brown Study Collection and Senior Lecturer in the Department of Art History, Theory, and Criticism, both at the School of the Art Institute of Chicago (SAIC). Her research, teaching, writing, and curating concern artists who work independently from the academic mainframe. Stone focuses on the preservation and interpretation of artist-built environments and collections. With Don Howlett she has written and implemented preservation plans for artist-built environments since 1986. She co-curated (with Kenneth C. Burkhardt) the exhibition *Chicago Calling: Art Against the Flow*, shown at Intuit: The Center for Intuitive and Outsider Art, Chicago, touring to Paris, Kaufbeuren, Lausanne, and Amsterdam (2018–2021). Stone holds a Master of Science in Historic Preservation from SAIC. She works, seasonally, with soil, plants, and stone in her studio, a garden/ruin in rural Wisconsin. She is currently working on long term curatorial projects with colleague/collaborator and IPC member Nicholas. C. Lowe. lstone@saic.edu and stonelisa54960@gmail.com

Panoramic Inscriptions: Perspectival Typography and Pictorial Lettering in Immersive Ephemera

Molly Briggs, University of Illinois at Urbana-Champaign, Champaign, Illinois, USA

Abstract: Nineteenth-century panoramas were multimedia artifacts whose transporting effects depended on the coordination of painting, architecture, sculpture, stagecraft, and—importantly—printed matter. This presentation examines the exemplary deployment of immersive word/image rhetorics in printed materials associated with panoramas and then traces the appearance of such rhetorics in a wider array of printed geographical media including pictorial maps, tourist guides, bird's-eye views, games and toys, and advertising broadsides. This analysis shows that while immersive rhetorics proliferated during the nineteenth-century, they predate the invention of the panorama and persist in many forms in the present. Attending to the subtle immersive cues embedded in analog media offers tools for interrogating the metaverse that is already here—that is, the complex of representations that fills our field of view over time, in real time to shape our perception at all scales. Electronic media reach wider audiences at a faster pace than their analog predecessors, yet continue to rely for their effects on the deployment of word/image relations in built and social space. This presentation is framed as a primer on attending to immersive rhetorics in word/

image relations for use by historians and practitioners of art, design, cinema, education, geography, urbanism, political science, and other disciplines.

Keywords: Immersion, Perspectival Typography, Pictorial Lettering, Graphic Epistemologies, Social Space.

Biography: Dr. Molly C. Briggs is a landscape historian, design theorist, visual artist, and trained printmaker who studies immersive rhetorics in printed matter in order to discern the mediated shape of built and social space. She teaches core courses in design methods, theory, and research for undergraduates in Graphic Design and graduate students in Design for Responsible Innovation. Professor Briggs holds a PhD in Landscape Architecture History and Theory from the University of Illinois at Urbana-Champaign, an MFA in Printmaking with a minor in Photography from the Department of Art Theory and Practice at Northwestern University, and a BFA in Painting from the School of Art and Design at Illinois. Her dissertation, “The Panoramic Mode: Immersive Media and the Large Parks Movement” (2018), examines the commission, design, and reception of large urban park landscapes in nineteenth-century Europe and the United States in the context of a broader mediated culture of immersive spectacle. Professor Briggs currently serves as President of the International Panorama Council (IPC, Switzerland) and as an Executive Editor of the *Panoramic and Immersive Media Studies Yearbook* (De Gruyter, Germany, in association with IPC). She is a 2023 Map Library Fellow of the MacLean Collection (Illinois) and is the recipient of numerous scholarly, creative, and pedagogical grants, awards, and recognitions. She has been represented by Zg Gallery in Chicago since 2004. mbriggs@illinois.edu

Session III | Lost Voices

Panstereoramas: The Colonial Touch, or the Power to Represent Comprehensively

Blagovesta Momchedjikova, New York University, New York City, New York, USA

Abstract. As *Miniature World* prepares to open doors on Staten Island in New York City, thus becoming one of the most comprehensive miniature (panstereoramic) exhibits in the world, questions about what is but also isn’t represented in comprehensive exhibits such as this, come to mind. Who decides what is worthy of being represented? Who decides how to represent what is worthy of representation? What agency, if any, do the represented environments carry in their own representation? (For instance, it is a well-known fact that at *Miniature World*, the model environment of Brazil is created by an Argentinian team: what does that mean about the exhibit itself?) How is the power of representation handled at such seemingly innocent exhibits? Is the “colonial touch” still present in exhibits such as these? I will look at *Miniatür Wunderland* in Hamburg, the prototype behind New York’s *Miniature World*, as a point of comparison, in an effort to understand if comprehensive panstereoramic representations continuously position themselves as educational, fun environments while darker, perhaps, ideologies lurk behind their carefully put together exteriors.

Keywords: Pansteroramas, Comprehensive Exhibits, Miniatures, Agency, Colonialism, Power, Ideology

Biography: Blagovesta Momchedjikova, PhD, is an urban culture essayist and poet, who publishes on pansteroramas, memory, and the lived city experience. She is the editor of *Captured by the City: Perspectives in Urban Culture Studies* and *Streetnotes: Urban Feel*; and the co-editor of *Sounds and Silence in the Pandemic City*, *The Panorama Handbook: Thoughts and Visions On and Around the Queens Museum's Panorama of the City of New York*, *From Above: The Practice of Verticality*, and *Public Space: Between Spectacle and Resistance*. Dr. Momchedjikova chaired the Urban Culture Area for the Mid-Atlantic Popular and American Culture Association (MAPACA) for 15 years and the inaugural IPC Conference Scientific Committee for 5 years. She is a founding member of the *International Panorama Council Journal* (IPCJ), and sits on the editorial boards of both IPCJ and *Streetnotes*. She teaches writing, art, and the city at New York University. bmm202@nyu.edu

“Shengjing Panorama”: Re-crafting the Urban Ephemera of Colonial Shenyang in Historic Los Angeles

Weiling Deng and Jonathan Banfill, Champlain College, Burlington, Vermont, USA; Ruby Carlson and Sara Velas, The Velaslavasay Panorama, Los Angeles, California, USA

Abstract: One experiences *Shengjing Panorama* (2019), a 360-degree painting depicting the everyday landscape of Shenyang, China circa 1910–1930, after walking into the Velaslavasay Panorama housed in the historic Union Theater (built 1910) in a residential neighborhood on the outskirts of Hollywood. Leaving behind the sun-filled streets of Los Angeles, the visitor moves down a dark passageway to an immersive scene of the past in East Asia. Surrounded by the theatrical effects of painted architecture, streets, and pedestrians, crafted vendor carts, and remixed train horns from LA’s Union Station, the visitor travels a century backward to stand in the political and social cross-currents of Manchuria in the Eurasian continent’s northeast.

Entitled after Shenyang’s obsolescent name from the Qing Dynasty (1644–1911), the *Shengjing Panorama* (SJP) revitalizes the transient world-building of Manchuria’s wartime metropolis, multiply-colonized by the rivaling Russian and Japanese empires vying over railroad control while becoming the “homeland of exile” to the Manchu royals who had ruled the Qing court in Beijing. Through integratedly displaying Shengjing’s natural and cultural landscapes, the SJP unfolds, quite literally in the space of a rotunda, the historical Eurasian contacts, tensions, and uncertainties to depict what we call a “minor cosmopolitanism” from both shores of the Northern Pacific.

The “minor” falls out of linear temporality and historiography stamped with the “major” events and places in political and cultural domains used to teleologically narrate the inevitability of victorious dominance. Minor cosmopolitanism proposes the aesthetics of staying with/in the socio-geographical periphery to observe canceled connections imbricated in larger colonial networks. It is from such empathy with the loss, messiness, and indeterminacy of everyday life that the SJP attends to the irreducible lived experiences beyond the limelight of the Beijing-Shanghai-Guangzhou mod-

ernization axis by re-crafting the stressed absence of Shengjing's memory on the outskirts of Hollywood's geographical and imaginative aura.

Keywords: Ephemera, Manchuria, Empire, Colonial Periphery, Cosmopolitanism

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Ruby Carlson is a Co-Curator at the Velaslavasay Panorama and served as the elected Secretary of the International Panorama Council (2015–2018). She has worked in the field of panoramas since 2008 to elucidate, present and gather funding for panoramas and related mediums. She works as a freelance writer and cinematographer for media and fine art projects. Since 2010 she has participated in PLACE, a critical return to the discovery of Freud and its construction in the topology introduced by J. Lacan. ruby@panoramaonview.org

Sara Velas is the Artistic Director/Co-Curator/Founder of the Velaslavasay Panorama, a nonprofit museum and garden she established in the year 2000 to present experimental immersive experiences and variations of media popular before the invention of cinema. An artist, graphic designer, curator, gardener, and native Los Angeleno, she is active on the Executive Boards of the International Panorama Council and the Center for Land Use Interpretation with significant involvement in architectural preservation throughout Los Angeles. sv@panoramaonview.org

Lost Authority, Found Voices: “New Red Order” and the Panorama of the Monumental Grandeur of the Mississippi Valley, c. 1850

Melissa Wolfe, St. Louis Art Museum, St. Louis, Missouri, USA

Abstract: *Panorama of the Monumental Grandeur of the Mississippi Valley* is a moving panorama commissioned by archaeologist Montroville W. Dickeson to accompany his lectures given to audiences in the eastern United States. Although the panorama was advertised as illustrating views along the Mississippi River, its imagined journey actually focuses on the Ohio and lower Mississippi River valleys. Most of the scenes present mounds, many of which Dickeson excavated, built by the ancient Mississippian culture that flourished in the midwest and southeast United States from 900 to 1600.

This panorama has experienced multiple aspects of loss and, fortunately, recovery. The only known surviving Mississippi River panorama, it had fallen into disrepair until the Museum completed its conservation in 2019. Canvas and paint were restored, and an

aluminum, motorized apparatus was built to replace the original wooden rollers. Many extant written and physical clues indicate that the panorama's visual experience had been enhanced by sensational narration, music, and dramatic sound and light effects. The exact nature of what its 1850s audience would have experienced is lost, however, in part because we no longer have the text or stage cues for its performance. It is also so because today's audiences' expectations of verisimilitude in an age of VR and other immersive, heightened reality media imposes on replicating the immersive or transportive powers of the original panorama experience. Yet, this loss is an opportunity for gain. Without the original narration, but with the remaining images that are highly charged with the disempowering agendas of colonialism that structured early archeological practice in the United States, the panorama offers a possibility to replace the narration and experience with a contemporary narrative that enables the painted scenes to speak in ways that are pertinent, and "real," to issues central to our lived experiences today.

The possibility to build on this loss of narrative and narrative context is especially persuasive given the panorama's intended inclusion in an upcoming exhibition on art and illusion in the United States. Seen in the art-historical context of illusion, with its ties to deception and shifting power relationships, the panorama might again be empowered to absorb its audience into a transportive and transformational experience.

Keywords: Moving Panorama, Early New World Archaeology, Montroville W. Dickeson.

Biography: Melissa Wolfe is Curator and head of the American department at the Saint Louis Art Museum. Dr. Wolfe's interests deal predominately with the visual dynamics of social critique. She has curated a wide range of exhibitions, most recently *Art Along the Rivers: A Bicentennial Celebration*, *Simple Pleasures: The Art of Doris Lee*, and *Subversion and Surrealism in the Art of Honoré Sharrer*, which received an Award for Excellence from the Association of Art Museum Curators. She is currently developing an exhibition on American art in the early Cold War era.

Dr. Wolfe has served as a jurist and as a reviewer for numerous journals, publishers, and granting agencies. She has lectured widely, including at the Metropolitan Museum of Art, Yale University, and the D'Arcy McNickle Center for American Indian Studies, Chicago. Melissa.Wolfe@slam.org

Session IV | Panorama Conservation and Saving the *Faux Terrain* —Round Table

The Laysan Island Cyclorama

Liz A. Crooks, Cindy E. Opitz and Jessica M. Smith, University of Iowa Museum, Iowa City, Iowa, USA

The Laysan Island Cyclorama, Iowa City, Iowa

Liz A. Crooks, Director, Pentacrest Museums, University of Iowa, and Bruce Scherting, Director, Project Art, University of Iowa Hospitals and Clinics, Iowa City, Iowa, USA

"The Battle of Atlanta Cyclorama," Atlanta History Center, Atlanta, Georgia

Gordon Jones, Director, The Battle of Atlanta Cyclorama, Atlanta, Georgia, USA

Bourbaki Panorama, Lucerne, Switzerland

Patrick Deicher, President, Bourbaki Panorama Foundation, Lucerne, Switzerland

Jerusalem Panorama, Altötting, Germany

Gabriele Koller, Jerusalem Panorama Foundation, Altötting, Germany, and Ulrich Weilhammer, Weilhammer Conservation, Gangkofen, Germany

Biographies: Liz A. Crooks has served as the director of the University of Iowa Pentacrest Museums since 2018. Liz holds an MA in Museum Studies and a Graduate Certificate in Book Arts. Born & raised in Iowa City, Crooks developed a passion for museums while visiting the museums she now oversees. She serves on numerous campus advisory committees, including the Museum Studies Certificate Program. Her other interests include live music, rowing, and more museums. liz-crooks@uiowa.edu

Cindy Opitz manages zoological and anthropological collections at the University of Iowa Museum of Natural History and teaches collections care in the University of Iowa Museum Studies Certificate Program. She has served as secretary of the Society for the Preservation of Natural History Collections (SPNHC) and serves on the Iowa Conservation and Preservation Consortium board, and the Iowa Museums, Archives, and Libraries Emergency Response Team. cindy-opitz@uiowa.edu

Jessica Smith has served the Communications Department at the University of Iowa Pentacrest Museums since 2018. Her backgrounds in sociology, art, marketing, environmentalism, and non-profit organizing inform and contribute to her work as a museum professional. She teaches students to create access to science and history using creative media, writing, and *joy*. jessica-smith-7@uiowa.edu

Bruce Scherting has extensive exhibition development, planning, design, fabrication, and collection care experience from a variety of cultural institutions—history, natural history, art, and healthcare. He also has 20 years of museum studies teaching experience. As Director of Project Art at University of Iowa Hospitals & Clinics (UIHC), Scherting leads a team that partners with Capital Management to select, place and install artwork for new buildings and renovation projects. Project Art collaborates with leadership teams, multiple departments, advisory committees, architects, and contractors to create engagement opportunities with patients and visitors through the integration of art in public spaces for meaningful social interaction, storytelling, or moments of personal reflection, meditation, and respite. While Director of Exhibits at the University of Kansas Biodiversity Institute & Natural History Museum, Scherting was responsible for all phases of exhibition development and project management. He worked with museum education and communication staff, content experts, researchers, and contractors to build exhibits for diverse audiences. Prior to this Scherting was an exhibit developer-designer for UI Museum of Natural History's renovation of Bird Hall. In Chicago, he worked at the Shedd Aquarium and Field Museum during large-scale expansion projects gaining valuable experience preparing cultural objects for display and developing exhibitions from a visitor-centered approach. bruce-scherting@uiowa.edu

Gordon L. Jones is the Senior Military Historian and Curator at the Atlanta History Center, in Atlanta, Georgia, where he has worked since 1991. He is responsible for one of the largest collections of Civil War artifacts in the United States. From 2014 through 2019, he oversaw the research, conservation, re-interpretation, and

exhibition of the 1886 cyclorama painting, The Battle of Atlanta. Gordon holds a Ph.D. from the Graduate Institute of the Liberal Arts at Emory University, specializing in the Civil War in popular culture. gjones@atlantahistorycenter.com gjones@atlantahistorycenter.com

Patrick Deicher studied History and Business Management and holds an MA in History. Patrick is a former curator of Bourbaki Panorama. Since 2019 he is a member of the Board of Trustees and since 2022 the President of the Bourbaki Panorama Foundation. He is working with BDO Ltd. (Switzerland) since 2009 as a consultant in Public Management and is Head of the sector Not-for-Profit-Organizations & Healthcare. Patrick is an active member of IPC's Advisory Group. From 2003 to 2013 he acted as the Secretary-General and from 2013 to 2017 as the Treasurer to the International Panorama Council. He is the former director of the Bruder Klaus Museum in Sachseln and was a member of the city parliament of Lucerne. From 2011 to 2021, he was also a member of the Board of Trustees of the Panorama Altoetting Foundation, Germany. patrick.deicher@deicher.ch

Gabriele Koller is an art historian and panorama researcher. Her MA thesis was devoted to Gebhard Fugel, the artist responsible for the Panorama of Jerusalem and the Crucifixion of Christ, Altötting, Germany. She has published on various aspects of panorama history. For the International Panorama Council of which she is a member since its foundation in 1992 she edited *The World of Panoramas: Ten Years of International Panorama Conferences* (2003), *The Panorama in the Old World and the New* (2010), and *More Than Meets the Eye: The Magic of the Panorama* (2019). She currently serves as Vice President of the International Panorama Council. She is a member of the Executive Board of the Foundation Panorama Altötting, Germany, and is the Panorama's Curator. gabriele_koller@gmx.de

Ulrich Weilhammer studied History of Arts in Munich/Germany and Conservation of Easel Paintings and Polychrome wooden Objects in Berne/Switzerland. After earning his degree in 2001, he has been working on numerous conservation projects in Europe, Asia and the Americas. From 2004 until 2007, he was Assistant Professor and Head of the Department of Polychrome wooden Sculpture and Easel paintings at the Conservation Center of the Tainan National University of the Arts in Taiwan, R.O.C. and gave lectures at the Shanghai Institute of Visual Arts at Fudan University and the University of Applied Sciences in Berne/Switzerland. Since 2007, he has been running his own studio in Germany. The Cyclorama-projects he was involved include the Murten-Panorama and the Bourbaki Panorama in Switzerland, the Panorama of the Crucifixion of Christ in Altoetting/Germany and the Gettysburg Cyclorama in the US. From 2015 to 2018, Ulrich led the relocation. Conservation and restoration of the Atlanta Cyclorama. contact@weilhammer-conservation.com

Session V | Panoramic Vision

“Mysterious Barren Lands”: The Panoramic Legacy of Arctic Documentary Films

Lora Maslenitsyna, Yale University, New Haven, Connecticut, USA

Abstract: The collective imagination of the polar regions requires new perspectives in order to conceptualize a future for the Arctic during the ongoing climate crisis, as the rapidly defrosting ice exacerbates ecosystems, sea levels, and migration. This conference presentation explores the convergence of imperial and sublime panoramic visions that have constructed the Arctic landscape in paradigmatic documentary films such as Robert Flaherty's *Nanook of the North* (1922) and Walt Disney Productions' *White Wilderness* (1958). I trace the panorama's proliferation of Arctic images in the nineteenth

century that perpetuated an immersed gaze objectifying the Arctic through realist and theatrical elements. I show how this objectifying gaze cultivated the sense of the Arctic as a hostile landscape. Examining the development of photography at the height of Arctic exploration and panorama exhibitions in the nineteenth century, I contend that the influence of panoramic paintings on photographic moving images extended to the particular use of the panning shot in Arctic documentary films. Drawing on the photographic moving image as idealized objective evidence, Arctic documentaries perpetuate the panning shot as a means of dominating the landscape in order to reveal the presupposed truth of its mysterious environment. To counter the narratives of these paradigmatic Arctic films, I examine the subversion of the panning shot's objectivization of the Arctic landscape in Viktor Kossakovsky's 2019 film, *Aquarela*. Through a close reading of Kossakovsky's film, I contend that *Aquarela*'s innovative elaboration of the panning shot disorients the viewer's desire to anthropocentrically objectify the Arctic landscape and encourages the emergence of a subjective, Arctic perspective. This transformation of the panoramic legacy in *Aquarela* provides a novel method for representing and conceptualizing the Northern polar region that exceeds the restrictive mythologies that led to this crucial moment of environmental degradation.

Keywords: Documentary, Arctic, Pan Shot, Landscape, Climate Crisis

Biography: Lora Maslenitsyna is a Ph.D. student in the combined program in Film Media and Studies and Slavic Languages and Literatures at Yale University. Her research focuses on documentary and nonfiction media, the construction of historical identity and historical memory, and the way that relationships between forms of representation influence and construct the perception of daily reality. She received her M.A. in Comparative Literature from University College London and B.A. in Liberal Arts from Soka University of America. lora.maslenitsyna@yale.edu

The Images in Circarama as Evidence of a Historical Moment and Place

Silvia Mascia, University of Udine, Udine, Italy

Abstract: The panoramic device of Circarama, later called Circle Vision 360°, is proposed as a system capable of visually presenting a nation. It is an immersive device that manages to take its viewers on a journey through the places that characterize the nation. It thus works on the common visual imaginary, trying to stimulate other senses as well, and not just the sense of sight. The viewers of the panoramic show are both citizens of the world – in transformation – and visitors to the very Expos in which the immersive films are presented. Their being women and men of the 1960s cannot be forgotten and should instead be emphasized and brought out. It is because the 1960s is a time of global and historical change that inevitably affects the evolution of visual culture as well.

The films made with this system aim to bring on the widescreen the United States, Italy, Switzerland, and Canada. The choice of locations is important but also the manner and technique through which they decide to show them. In fact, through Circar-

ama technology, nations decide to present themselves by offering new viewpoints on the big screen that would otherwise be difficult to achieve. In fact, filming is done using different means of transportation such as cars, trains, gondolas, and airplanes.

The panoramic cinema thus becomes a witness to the nation and its evolutions. Some of the images also depict the expo itself so that the film becomes a testimony to the architectural evolution not only of the nation but also of the expo and its host city.

Keywords: Circarama, Panoramic Cinema, Widescreen, Expo

Biography: After a three-year degree in Economics and Management of Cultural Heritage at the Ca' Foscari University of Venice, Silvia Mascia obtained her master's degree in Film and Audiovisual Studies at the University of Udine. Now she is a PhD candidate in History of Art, Cinema, Audiovisual Media, and Music at the University of Udine. Working on a research project that aims to expand her master's research about Circarama, she is looking on the stages of the dispositive in the Expos of the '60 around the world and focusing on the reconstruction of transnational industrial relations linked to the experimentation and global diffusion of the panoramic device. In addition, she has been in charge of the Sergio Amidei Award (Gorizia) catalog for 7 years and oversees parts of the festival organization. mascia.silvia@spes.uniud.it and masciasilvia3791@gmail.com

Immersive Illustration to Recreate Lost Worlds: 360° VR Documentaries for The World War II Foundation

Chiara Masiero Sgrinzatto, Independent Artist, Venice, Italy

Abstract: I present three examples of recreation of environments through immersive illustrations I made for 360VR documentaries. Each whole spherical panorama is created from a fragment by integrating non-panoramic archival material with immersive illustrations. The archival pictures usually cover a tiny portion of the entire image: the task is to reconstruct the rest of the environment in a useful way for the narration, as close as possible to the historical facts, keeping a pleasant and balanced composition.

The spherical illustrations were made* for a series of 360VR documentaries directed by Uli Futschick for The World War II Foundation. With the voice-overs of veterans and 360° footage from today's environments, combined with archival photos and film clips, these 360VR documentaries allow the viewer to experience the hardship and difficulties the soldiers had to endure to fight the war.

In "Omaha Beach VR" the goal was to give the audience the picture of how many men and crafts were involved in the operation. The 360° filmed backgrounds were already set by the Director, as well as the archival pictures "to be extended" with illustrations in the scene. The drawn parts consist mainly of US landing crafts and soldiers, German beach obstacles and defense barriers, in a style that could complete the environment without distracting the viewers from the story and the historical documents.

In "Hold at all Costs" the illustrations of the training field, the camp and the soldiers loading the trucks to get to the siege, were drawn completely by hand because there was no 360° footage available. The scenes were reconstructed matching the archival

films placed in the spherical canvas by the Director. Although the rest of the documentary is in colour, the illustrations are made in a sketchy b/w style that blends well with the old films.

Keywords: Spherical Drawings, Immersive Illustration, 360° Reconstructions, VR Documentaries, Time-Travel Panoramas.

Biography: Chiara Masiero Sgrinzatto is a visual designer based in Venice, Italy. An architect specialising in Visual Arts, her work is focused on the representation of environments through immersive hand-made drawing. She has been working in the VR industry for over a decade, creating photo, video, illustrated 360° content for many clients and institutions worldwide including the European Union, La Biennale di Venezia, the Italian Ministry of Culture, Venice World Expo Committee, the Guggenheim Collection, Ricoh Japan and USA, The World War II Foundation. She has planned and coordinated the Media Design course at IED Venezia and taught in the same school. She also collaborates with panoramic photography manufacturers on equipment beta-testing and specialised software houses on the design of immersive interfaces. <https://www.chiaramasierosgrinzatto.com>; chiara.kiro@gmail.com

Session VI | Panoramas and Historical Context

125 Years of Agony and Revitalization of a Czech Panorama

Jean-Claude Brunner, Independent Researcher, Vienna, Austria

Abstract: 2023 marks the 125th anniversary of both the unveiling of the *Battle of Lipany 1434* panorama in Prague and the premature death of its main creator, Luděk Marold. The young Czech painter, recently returned from a successful career in Paris, proposed and created the largest painting for the 1898 architecture and engineering exhibition in Prague. All over Austria-Hungary, panoramas sprouted as expressions of the national revival. The Czech panorama featured the final defeat of the Hussite Wars. Marold died while preparing a painting of the second traumatic Czech defeat at White Mountain 1620. The Marold panorama survived the ravages of the twentieth century and is currently in need of restoration.

The presentation will highlight the artistic career of Luděk Marold, discuss the panorama's place in Czech national revival (including infighting between Czech socialists and communists) and present the Výstaviště Praha organization's current plans.

Keywords: Battlefield Panorama, Nineteenth Century, Czech Republic, Hussites, National Revival

Biography: Jean-Claude Brunner is a Swiss business analyst living and working in Vienna, Austria. His research interests are social and technological change in the fifteenth and nineteenth century in Central Europe. He is treasurer of the Weltmuseum Wien Friends association. jc.brunner@gmail.com

Rebuilding a Lost World: *Trompe l'œil*, Panorama and Staging an Exhibition on Illusion in America

Stephanie Heydt, High Museum of Art, Atlanta, Georgia

Abstract: In 1795, two similar but unrelated events—the introduction of illusionistic painting in the form of *trompe l'œil* and panorama—forever changed the experience of Art in America. In Philadelphia that spring, curious crowds marveled at Charles Willson Peale's *The Staircase Group*—an illusionistic painting of his two sons ascending a staircase, and the first *trompe l'œil* deception presented in America. That same season, audiences in New York were treated to a different form of illusion. A massive view of London—displayed and experienced in the round—promised to virtually transport viewers to the distant city.

The parallel introduction of these two forms of illusionistic depiction in the United States is worthy of note. Americans were not only fascinated by these 1795 deceptions, but these origin events became prototypes for a persistent and increasingly present role for illusionistic experiences in American art and culture through to today. Scholars have investigated this late-eighteenth century moment and the decades and centuries to follow, unpacking the relevance of illusionism to better understand how it was deployed within the social and political circumstances particular to nineteenth and twentieth-century America. Some have traced the influence of the illusion within the fine arts, while others have investigated how it fed the particular brand of American spectacle that catered to mass audiences and low brow entertainments. Yet no single project has reviewed the broader scope of illusionistic depiction in America—specifically the intersecting trends of *trompe l'œil* painting and panorama, the developing world of the fine arts and parallel emergence of mass entertainment—starting with this point of origin and carrying forward to today. The ambitious exhibition *Art and Illusion in America, 1795—Present* [Working Title], currently under development at the High Museum of Art in Atlanta, proposes to do exactly that.

This paper aims to present for feedback a summary of this developing project on illusionistic art in America and our attempt to understand (and reconstruct for our audiences when possible) trends of illusionism specific to the American scene. The exhibition aims to recenter these influential arts within the American story, considering not only audience, but their impact on the development of art, culture and entertainment writ large. The enduring fascination Americans have with illusion will be a central axis of the show, which will unfold chronologically from the early 1800s to present times. Because these arts are expressed in many forms—painting and sculpture, but also film and the decorative arts—the project will be multimedia, with moments of connection between past and present at pivotal intersections along the way.

Keywords: American Art, Illusion, Nineteenth Century, Exhibition

Biography: Stephanie Mayer Heydt is the Margaret and Terry Stent Curator of American Art, overseeing a collection program spanning over two hundred years of historic paintings, drawings, prints and sculpture. With her academic specialization in nineteenth century print and popular culture, Stephanie had expanded her area of interest to address the full scope of the High's diverse American collection. Her current projects include further investigations into issues of race, gender and popular culture with a reassessment of post-Civil War representations of women, and the reception and evolution of immersive and illusionistic art in America from the nineteenth century through to the present.

Before coming to the High, Stephanie held positions at the Gulf Coast Museum of Art, Harvard University Art Museums and the Terra Museum of American Art (now the Terra Foundation for American Art), in addition to numerous fellowships. Stephanie's exhibitions at the High Museum include *Rising Up: Hale Woodruff's Murals at Talladega College*; *Go West! Art of the American Frontier from the Buffalo Bill Center of the West*; *Simple Pleasures: Still Life and American Art*; *"Something over Something Else": Romare Bearden's Profile Series*; and *Joseph Stella: Visionary Nature*.

Stephanie has contributed to publications at Crystal Bridges Museum of American Art, the Harvard University Art Museums, the Terra Foundation for American Art, and the Smithsonian American Art Museum. Her work has been supported by the Terra Foundation for American Art, The Henry Luce Foundation, Historical Society of Pennsylvania & Library Company, the Andrew W. Mellon Foundation, and the National Endowment for the Humanities. Stephanie.Heydt@high.org

"Come with Me": Grant Wood's Imagination Isles Panorama

Sean M. Ulmer, Cedar Rapids Museum of Art, Cedar Rapids, Iowa, USA

Abstract: Grant Wood, painter of *American Gothic*, the most famous American painting in the world, was a man of many talents. A metalsmith by training, he largely taught himself the art of painting, but was also adept in sculpture, interior design, printmaking, and murals.

Imagination Isles is a 12-inch by 155-foot-long landscape painting (28 feet of which survives) designed by ninth-grade boys in Grant Wood's art class at McKinley Junior High School in 1924. The scroll was presented to the school as a theatrical performance, much as moving panoramas were in the nineteenth century, with dimmed lights, musical accompaniment, and a spoken narrative. Throughout his teaching career, Wood emphasized such cooperative endeavors as well as independent work; the relationship of community and creativity was central to his belief that art could be achieved by "a group of people painting harmoniously together, each contributing his own images to the forming of an accumulated vision."

Imagination Isles is a fictitious panorama. It was not only inspired by nineteenth-century precedents, but also by more local and contemporary mural painting. It is all the more interesting given Grant Wood's later position as head of the Iowa PWAP in the 1930s. Unpopulated by figures, the viewer's spirit was invited to journey into the panorama, which was installed in the school's cafeteria for all to enjoy after the initial theatrical performance.

Keywords: Grant Wood, Imagination Isles, Landscape, Mural, Cedar Rapids

Biography: Sean Ulmer is the Executive Director of the Cedar Rapids Museum of Art (CRMA), owners and operators of the Grant Wood Studio. Prior to becoming Executive Director in 2014, he served as the Curator of Collections and Exhibitions at the CRMA for nine years. He has more than thirty years of curatorial experience, including organizing over 120 exhibitions and acquiring numerous works of art. He is also responsible for several exhibition catalogues. Prior to his position at CRMA, he was Curator of Modern and Contemporary Art at the University of Michigan Museum of Art from 2001 to 2005. Before that, he was at the Herbert F. Johnson Museum of Art at Cornell University, where he had a broad curatorial portfolio as Assistant Curator of Painting and Sculpture. His five years at Cornell were preceded by his position as Exhibitions Coordinator at The Ohio State University's Wexner Center for the Arts. Ulmer received a B.A. in Art History from the University of Toledo/Toledo Museum of Art and a M.A. in Art History from The Ohio State University. sulmer@crma.org

Session VII | Virtual Reality and Recovering Panoramas

VR Remediation of Invisible Panoramas

Christl Lidl, Guest Artist Laboratoire MINT, Université de Lille, Belgium

Abstract: The relationship between the physical immersive space of panoramas designed in the eighteenth and nineteenth centuries and that offered in Virtual Reality (VR) headsets is very strong. As in immersive headsets, the scenographic space of panoramas causes the viewer to lose his or her spatial reference points and plunges him or her into a fictionalised landscape, the setting of the *faux terrain* accentuating the real effect of the painted subject. The virtual space created for VR headsets offers a very similar type of experience, making it possible to envisage a remediation of panoramas. The history of panoramas reveals that the canvases that constituted them were not always dedicated to a single place of display but could, through the normalisation of their size, “travel” and be exhibited in existing architectures.

Based on the experience of the immersive and interactive remediation project Cinemachina VR created with the IIVIMAT (*Interactive and Immersive Video Making Tool*), the project VR Remediation of Invisible Panoramas aims at creating a scenography in a 3D model of panorama architecture. This will be accompanied by a database and will virtually present panorama canvases, in particular those preserved by institutions but whose exhibition is made impossible by the absence of an architecture for their installation. The virtual space being entirely modular, the scenography will propose a reading of the canvas in multiple layers allowing the superimposition of existing archives such as preparatory drawings and photographs, and will integrate a spatialized sound design. This “nomadic” panorama is conceived as a tool for research on panoramas and, at the same time, a unique museum experience for the public.

Keywords: Virtual Reality Experience, Remediation, VR Scenography, Immersive Research Tool

Biography: Christl Lidl is a multimedia artist. As a professor of video-multimedia at the Ecole Supérieure d'art et de Design de Valenciennes, she set up a research and creation studio on 360° films (2009–2018). In the framework of a tripartite research, art, science and semiology around immersive scenographies, MAVII (2018–2020), she collaborates with Christophe Chaillou, computer scientist (Laboratoire CRISTAL) and Matteo Treleani, semiologist, lecturer in communication at the University of Lille. Together they have developed a VR prototyping tool, IIViMaT (Interactive and Immersive Video Making Tool). With this tool, Christl Lidl is making the *Cine-machina VR* prototype, a project for a virtual museum of cinemas, presented at Laval Virtual (2021). She has published: *ESPACE(S) 360°/VR, une recherche création sur les écritures immersives et leur espace scénique* in Cahiers Louis Lumière n°13.

Christl Lidl is also a doctor in Art and Art Sciences (2021). Her thesis led to the creation of artistic pieces in augmented reality (AR) dedicated to *Life: A User's Manual*, a literary work by Georges Perec. She created the AR application for the exhibition “Cinemas de Bruxelles augmentés,” created for the Heritage Days (2022) and presented in 2022/2023 at the Royal Cinematek in Brussels. lidlchristl@gmail.com; <https://www.linkedin.com/in/christl-lidl/>

Virtual Reality for Cultural Heritage: How 3D Models, VR and Gaming Technology Extend Reality

Karolina Wójtowicz, Independent Visual and Architectural Designer, Wrocław, Poland

Abstract: I would like to tell a story about my vision of transferring cultural heritage to virtual reality not only by creating digital twins but also by showing its spirit, its history, people behind the history and how it is surviving in present times. I will show the Virtual Project of Church of Piece in Świdnica, Poland, Virtual Tours created in a few Stave Churches in Norway, a plan to create a Virtual Museum for Panoramas – those who are on display and those in storage bringing them alive again, 3D model of the altar in Kamieniec Ząbkowicki in Poland and for what reasons it was created. Also, what actions and additional products we can create with modern technology that can help to understand the plan and structure of the buildings, to educate the audience in a more visual way than from books or just help monuments gain income in times like pandemic. I will demonstrate the products like 3D printed models and tactile maps which are helping to include people with disabilities to experience cultural heritage without ability to see or walk. I would like to also show how we can emphasize the work of art conservators who take care of preserving historical buildings and panoramas. At last, but not least I will present the technology behind it—what techniques (3D modelling, photogrammetry etc.), software and equipment were used for these projects and how the technology from the gaming industry can advance and widen the way we experience reality. Those techniques are creating the full image of the beauty of monuments, introducing them to the wider public and also showing us their future.

Keywords: Virtual Reality (VR), 3D Models, Cultural Heritage, Virtual Tours

Biography: I am a Visual and Architectural Designer. I graduated in Architecture and Urban Planning from the University of Technology (Wrocław, Poland). For my diploma I created a new building for the panorama

painting of the Battle of Murten. I gathered experience in architectural studios and international companies developing skills in design, 3D and 2D graphic. After a few years of working as an interior designer (own company) I received a grant in 2017 to create a Virtual Project of the Church of Piece in Świdnica (Poland). The church was given a detailed computer survey, full 3D model and a Virtual Tour for Oculus Quest platform. After the project I worked for almost two years in University of Technology creating 3D printed Tactile Maps for the visually impaired students creating for them safe environment to move and study and also developing unified tactile maps standards for all universities. Then I was granted funding for a trip to Norway to study their biggest cultural heritage—stave churches—and find a way to capture its greatness and transfer to digital world. Currently I am working as a freelance designer on companies branding and creating 3D projects like a model of the altar in Kamieniec Ząbkowicki (Poland). karawojtowicz@gmail.com

The Panorama of Rio de Janeiro by Victor Meirelles and Henri Langerock: Part 6—Exploring the Virtual *Faux Terrain* in a 360° Experience by Game Engines

Thiago Leitão de Souza, Universidade Federal do Rio de Janeiro, Brazil

Abstract: This paper proposal is related to the ongoing research project “The Immersive Experience in 360°: Investigation, Representation and Digital Immersion in the City of Rio de Janeiro in the Nineteenth and Twentieth Centuries,” developed at Programa de Pós-Graduação em Urbanismo in Laboratório de Análise Urbana e Representação Digital in FAU-UFRJ, Rio de Janeiro, Brazil. The present work will investigate a Game Engine Experience in a digital 360° panorama. This proposal belongs to the investigations of “The Panorama of Rio de Janeiro by Victor Meirelles and Henri Langerock: Part 1—A City Memory’s Representation or a City’s Invention?,” “Part 2—To Render or not to Render? Maybe We Need to Surrender!,” “Part 3—“360° Virtual Layers of Atmospheric Perspective,” “Part 4—A Game Engine Experience” and “Part 5—Gamifying the 360° Experience by Game Engines” presented respectively at the 27th, 28th, 29th, 30th and 31st IPC Conferences.

The *faux terrain*—false terrain in French—was one of the main characteristic elements of the 360° immersive experience of panoramas in the nineteenth century. The large surrounding three-dimensional scenario was built just below the viewing platform and composed of real objects related to the painting’s theme. It was a transitional space between the canvas and the platform, where the gaze was accommodated, an idea of connecting the visitor’s real world to the pictorial world of the experience, a continuum space where illusion became immersion. But how could a 360° immersive experience with this space continuum’s sense in the twenty-first century be developed?

The virtual world’s promenade of today is not restricted by a gaze’s simulation anymore. The virtual traveler can easily operate with his body and reach out the six degrees of freedom with up/down, forward/back, left/right, pitch, roll, or yaw movements by either translating linearly, or rotating axially, himself through the whole scenario. In this way, it is possible to state the *faux terrain*’s idea still remains with the gaze’s simulation and also can be improved with the virtual traveler’s body movements in different levels.

This paper will investigate 360° immersive experiences through different virtual *faux terrains* developed in the *Panorama of Rio de Janeiro* by Victor Meirelles and Henri Langerock *Game Engine*. The experiences established in previous essays will be improved. In order to achieve this, several digital and analogical systems of representations will be applied: computer graphics techniques, 3D models, 3D renderings, sketches, virtual reality glasses, and some programming codes will be also investigated.

Keywords: Panorama of Rio de Janeiro, Victor Meirelles, Henri Langerock, game Engines, Virtual Reality

Biography: Thiago Leitão is full Professor of sketching and computer graphics techniques of Faculdade de Arquitetura e Urbanismo of Universidade Federal do Rio de Janeiro, Brazil. He holds an undergraduate degree in Architecture and Urbanism (FAU-UFRJ, 2006), Master of Science in Arts (PROURB-FAU-UFRJ in Rio de Janeiro, co-realized at Sint-Lucas Architectuur, Hogeschool voor Wetenschap & Kunst, Brussels, 2009), and PhD (PROURB-FAU-UFRJ in Rio de Janeiro, 2014). Since graduation, Thiago Leitão's research areas include: panoramas, the history of panoramas, panoramas of Rio de Janeiro, 360° experiences, and how its conversion to digital media can offer contributions, developments, and new experiences, for Architecture and Urbanism's graphic representations and design studios. leitao.thiago@fau.ufrj.br

Unveiling the Secrets of the *Panorama du Congo*

Leen Engelen, LUCA School of Arts (Brussels) / KU Leuven (Leuven), Belgium, and Victor Flores, Lusofona University, Lisbon, Portugal

Abstract: Last year, we presented the first stage of our research on the *Panorama du Congo*, a panorama painting by the Belgian artists Alfred Bastien and Paul Mathieu. The work was commissioned to promote the Belgian Congo at the World Exhibition in Gent, Belgium in 1913. At the upcoming IPC conference, we would like to follow up on the previous presentation and show some of the results of the photography and the Virtual Reality application that is being developed by the team.

Our research and valorization approach to the panorama resonates with the notion of “lost worlds,” central to this year’s CFP in multiple ways. First, as was the case for many panoramas, the *Panorama du Congo* was painted to be exhibited at a World Exhibition. Due to the close connection between the canvas and the temporary purpose-built rotunda, the exhibition of the painting ended when the World Exhibition closed and the building was demolished. It was once more exhibited some twenty years later at the World Exhibition in Brussels in 1935, but after the closing of the exhibition and again the dismantling of the rotunda, it disappeared from public sight. The elements of the *faux terrain* were scattered or destroyed and the painting was rolled up and stored. It remains in storage until today. Along with material constraints (the need for a rotunda, restoration of the canvas, reconstruction of the *faux terrain*), the changing colonialist attitudes – especially after the Congo’s independence in 1960 – prevented the painting from further exhibition. The panorama, as it was conceived and constructed,

is thus lost. The team is currently working on the virtual recreation of the panorama (building, canvas, platform, *faux terrain*) to bring this lost world back to life.

Second, the panorama painting still exists but has been inaccessible to the public for over 80 years. As part of this project, we photographed the canvas, enabling us to create a digital twin. This allowed the team to investigate the painting and the image in detail. Previous research was largely based on small-scale images of very poor quality, such as contemporary postcards and ephemeral documents, such as guidebooks and sketches. Studying the digital images of the actual panorama and relating them to archival research unveiled many new elements and heightened our understanding of the painting and the way the *faux terrain* was initially constructed. While the actual *faux terrain* is (most likely) lost and its paper trail in the archives is scarce, we were able to reconstruct parts of it digitally and in VR.

Lastly, from our current post-colonial perspective and decolonial theoretical framework, the image of the Congo presented in the panorama painting can be debunked as a colonial fiction, an invented and dreamed representation of the Belgian Congo, invested by and representing colonial power relations. It depicts a country that never existed outside of the minds of the colonizers. Our decolonial perspective presents us with many challenges regarding its future public exhibition. The recreation of the panorama in VR is the first step, to be followed by the introduction of multi-layered polyphonous narratives on that imaginary pictorial world. This talk will also allow the conference audience to experience the *Panorama du Congo* with a Virtual Reality headset available during the IPC conference days.

Our presentation will be developed along the axes of the archive, virtual reality and contested heritage.

Keywords: Panorama du Congo, Alfred Bastien, Paul Mathieu, Virtual Reality, Imperial Panorama

Biographies: Leen Engelen is a professor of film and media history at LUCA School of Arts/KU Leuven in Belgium. She published widely on film, media and visual culture in the nineteenth and twentieth century, including immersive media such as panoramas and the Kaiserpanorama. An overview of her publications can be found here: <https://www.kuleuven.be/wieiswie/en/person/LeenEngelen>. She is currently Principal Investigator (with Victor Flores) of the research project “CongoVR. Decolonising the Panorama of Congo: A Virtual Heritage Artistic Research” (H2020). Leen is an honorary academic at the School of History (University of Kent) and is currently the president of the International Association for Media and History (www.iamhist.net). Leen.engelen@luca-arts.be

Victor Flores is an Associate Professor and Head of the PhD Program in Media Arts and Communication at Lusófona University, in Lisbon. As Principal Investigator in CICANT—Early Visual Media Lab (<https://earlymedialab.lusofona.pt>), he coordinates the research projects “Curiositas: Peeping Before Virtual Reality. A Media Archaeology of Immersion Through VR and the Iberian Cosmorama” and “Congo VR. Decolonising the Panorama of Congo: A Virtual Heritage Artistic Research (H2020).” He is the editor of the *International Journal on Stereo & Immersive Media* since 2017. His publications include books and articles on historical photography, stereoscopy and immersive media. In 2021 he organised and curated the *Catalogue Raisonné of Carlos Relvas's Stereoscopic Photography* (<https://carlosrelvascatalogue.pt>). Victor.flores@lusofona.pt

6 Reviews

This section invites reviews of recent books, exhibitions, events, performances, archives, and products of a panoramic and/or immersive nature.

Section Editors

Ruby Carlson

Curator, Velaslavasay Panorama, Los Angeles, California, USA

Suzanne Wray

Independent Scholar & Researcher

New York City, New York, USA

Lisa Stone

Panorama Histories: Insights From Scholars in the Field

Reviewed:

Grand Views: The Immersive World of Panoramas. Erkki Huhtamo, James Fishburne, and Ruby Carlson, eds. Los Angeles: Velaslavasay Panorama with the support of Forest Lawn Museum, © 2023

This book is a gift. The package—cover and book—is wrapped with a two-inch paper sleeve. Slipping off the sleeve, you find the somber, stunning cover, a wraparound reproduction of Jan Styka's *Crucifixion*, an oil-on-Belgian linen panorama painting that lives in the Hall of Crucifixion-Resurrection (HOCR) at Forest Lawn, the renowned, sprawling necropolis in Glendale, California. The *Crucifixion* panorama is 45 feet tall and stretches 195 feet long. (I wonder, how large were the looms on which the acreage of Belgian Linen was woven?) In the international conceptual/intellectual community of panorama enthusiasts, dimensions matter. As it happens, *Grand Views* scale down nicely. The gift (unopened) is 5½ inches tall by 8 13/16 inches wide—a perfect size for a handheld object. The cover slips off and opens to reveal the entire *Crucifixion* panorama, at 27 11/16 inches wide, beautifully reproduced on hefty 120.0-pound Superfine Eggshell Ultrawhite stock (Fig. 1).

Only then does the lucky owner discover, on the inside of the cover, a stamp that combines the façade of Forest Lawn Museum with the signature orange ball atop the Union Theatre, home of the Velaslavasay Panorama, and the handwritten edition number within the stamp. Mine, which I received as a gift, is number 328 of a *very limited* 750 copies. Only then do you realize what a precious gift this is. These can be acquired—if you're lucky—for a mere \$18.00 at the Velaslavasay Panorama online gift shop. If you're reading this you're obviously interested in panoramas, so *do not* hesitate to order your copy. It's also available at Forest Lawn Museum giftshop (in person). This book was created to commemorate the collaboration of Forest Lawn Museum and the Velaslavasay Panorama on the exhibition *Grand Views: The Immersive World of Panoramas*, 13 May to 10 September 2023.

Once inside the 80-page booklet, you first think something is wrong. The printers didn't trim the pages correctly. Stray text and the occasional clipped image appear on the outside vertical edges of each page. How could this be? Then you realize that something is really right! The clever designers wove the continuous horizontal nature of the panorama into the design and structure of the book. The little fragments lead the eye and the mind to the next page, thus adding a new dimension to the possibilities of the layout of text and images on a page. Text on each page is organized, old-

Lisa Stone, Independent Curator and Preservationist, Spring Lake, Wisconsin USA



Fig. 1: Image of *Grand Views: The Immersive World of Panoramas* publication in the Forest Lawn Museum gift shop taken during the exhibit closing celebration, Los Angeles. Image, Larry Underhill, September 9, 2023; used with permission.

fashioned newspaper style, into three columns, making reading easy on the eye, while referencing historical panorama marketing designs. Fans and followers of the Velasquez Panorama know that every panorama production has its own souvenir, exquisitely designed, printed, and constructed, nodding to the vintage visual vocabulary and layouts of panorama marketing in pre-digital times. More on this shortly.

In Chapter 1, “Panoramas of Jerusalem and the Crucifixion,” Gabriele Koller presents the meticulously researched history of one of the popular genres of panoramas—Jerusalem and the Crucifixion—from the 1830s into the early years of the twentieth century. Since relatively few panoramas from this genre survive to this day, most of their histories are preserved in archival materials, and a range of examples are illustrated in this chapter.

Koller relates the cultural and historical contexts for the popularity of this genre and chronicles a curious dimension of the history of panoramas: the peripatetic paths of these monumental works. In many instances, rather than requiring people to travel to see them where they were created, often in elaborate, purpose-built buildings, monumental panoramas hit the road, making their own 180- to 360-degree journeys around the globe. The travels of several Jerusalem and Crucifixion panoramas are countered by (I believe) a phenomenon specific to this genre: panoramas created at or near sites of religious pilgrimage. Koller documents extant pilgrimage sites in Eu-

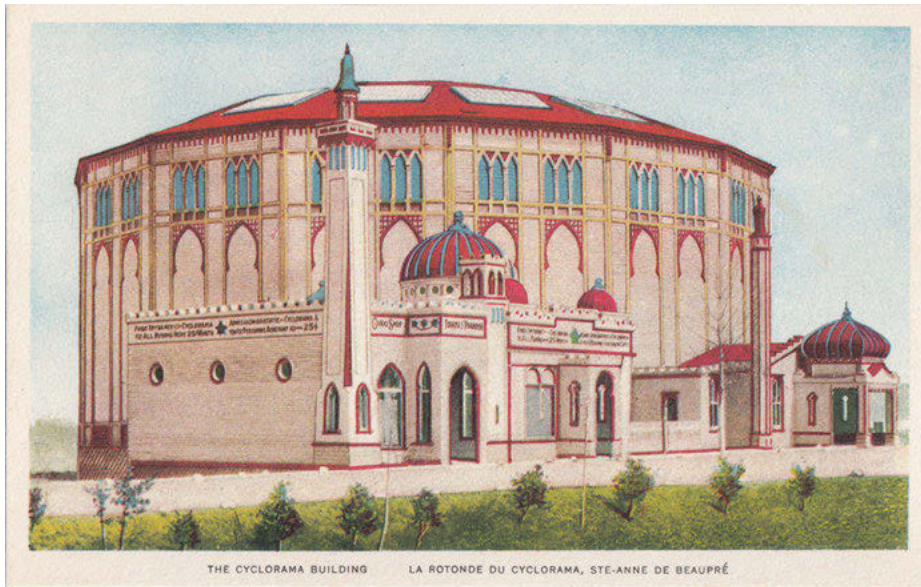


Fig. 2: Federated Press, Montreal, Cyclorama Building, Sainte-Anne-de-Beaupré, c.1920. The Cyclorama Building houses *Jerusalem and the Crucifixion* panorama painted by Paul Philippoteaux's studio in New York, 1889. Lithograph, 20 in × 18 in. Image, Forest Lawn Museum, Los Angeles; used with permission.

rope and Canada, where the faithful could (and can) encounter larger-than-life visual/immersive experiences, augmenting the miraculous healing powers of the sites themselves (Fig. 2).

These are precursors to the genre of artist-built environments as expressions of faith, and the craze of sensationalized theological theme parks. Koller relates the cultural and historical contexts for the popularity of this genre and presents the Christian-themed panoramas as sites of pious experiences.

Koller's essay lays the groundwork for Chapter 2, in which James Fishburne takes us on a tour of "Jan Styka's *Crucifixion*: A Virtual Pilgrimage in Southern California." We learn that Styka's panorama was painted in, and then traveled through, Eastern Europe before being shipped to St. Louis in 1904, to be shown at the Louisiana Purchase Exposition. In the time when world's fairs were larger-than-life affairs, for which grand buildings were constructed and no expense was spared, there was not a single building large enough to house and present *Crucifixion* at the Exposition. After the Expo, it was stored in various locations and later found (wrapped around a telephone pole) in Chicago. After World War II it was purchased by Forest Lawn and shipped to Glendale.

Situated within view of downtown Los Angeles, Forest Lawn-Glendale is known to many through the book (1948), or the film (1965), *The Loved One* by British author Eve-

lyn Waugh. In this harsh, hysterical response to time spent in Los Angeles, Waugh threw barbs at its funeral and film cultures and industries, particularly Forest Lawn and Hollywood. Fishburne's insight-filled essay, and the Velaslavasay Panorama's project with Forest Lawn-Glendale, present a deeply respectful counterpart to Waugh's biting satire.

Fishburne describes in detail the purpose-built, cathedral-like building, the Hall of Crucifixion-Resurrection (HOCR), created as the dramatic setting and permanent home for the panorama. The elaborate progression leads from the sun-drenched Southern California memorial garden, into the darkened, lofty, semi-secular spaces with light modulated by grand stained-glass windows, down corridors, past a rood-like screen—suggesting the entry into a sacred space—and into the grand theatre. Styka's panorama was originally presented as a curved painting, in hemicycle form, so viewers would have the sense of being “wrapped” within the painting and feel like participants. At the HOCR Styka's painting was restored as a flat painting. However, the auditorium seating is hemi-circular, flipping the relationship of audience to subject in this grand setting.

As if the monumental *Crucifixion* painting was not enough, there is an astonishing addition to the spatial and painted spectacle. Artist Robert Clark was commissioned to create the painting *Resurrection*, so the full Easter narrative, from the crucifixion to the resurrection, could be presented in the HOCR. At 70 feet wide and 51 feet tall, it can hold its own, in scale and content, when layered over the *Crucifixion*. Yes, layered. The painting is mounted on a track, and in the multi-media presentation, the *Resurrection* is rolled out and positioned *in front of* the *Crucifixion*. The physical drama of moving the monumental painting and layering it in front of the fixed monumental painting—only obscuring the center of the *Crucifixion*—is, to my knowledge, without precedent in the history of art, at any scale (Fig. 3).

In Chapter 3, “Promoting the Panorama,” Erkki Huhtamo expounds on the comingled relationships between panoramas and printed materials. Artist Joseph Grigely defines all materials created to augment an exhibition, that support the ultimately ephemeral phenomena of a temporary show, as “exhibition prostheses.” These intriguing leftovers in panorama history include an array of printed materials, broadsides, handbills, program booklets, and tickets; they document and provide much of the historical knowledge about panoramas (Fig. 4).

Huhtamo chronicles developments in the especially rich era of nineteenth-century printing technologies, from monochrome letterpress and copper and steel engravings to lithography, and the eye-dazzling introduction of color chromolithography. Huhtamo reveals much about the intertwining and mirroring effects between high-concept graphic design and high-concept media of the nineteenth and the dawn of the twentieth centuries: moving panoramas, circular panoramas, the architecture of the rotunda, magic lantern shows, and other entertainments. His in-depth analysis distills to a crux: the nineteenth-century panoramas existed in a complex and contested social, political, and cultural era that, by 1900, was running its course. He concludes, “The era of the



Fig. 3: Image of *Resurrection* (by Robert Clark, 70 ft × 51 ft, 1965) rolling away from its position in front of *Crucifixion* (by Jan Styka, 195 ft × 45 ft, 1896), during the opening reception of Grand Views exhibit. Image, Larry Underhill, May 13, 2023; used with permission.

panorama was fading; the era of post-colonialist struggles for liberation was dawning.” Huhtamo, the other authors, and International Panorama Council scholars and conference presenters are and have been exploring possibilities for activating panoramas in fluid time frames—past, present, and future—and pioneering contemporary interpretations that seek to contextualize the general subjects of historical panoramas: colonial, racist, imperialist, religious, and war narratives, and extractive technologies, i.e., the California gold rush.

Which brings us to Chapter 4, “Panoramas and California,” in which Suzanne Wray explores the evolution of the panorama format, particularly moving panoramas—painted canvases on rollers—which were presciently (or quaintly) called “moving pictures” and “movies” (also affectionately referred to as “crankies”) before the invention of cinema. In the florid language of the time, moving panoramas were touted as ideal substitutes for “painting pictures by the acre,” which may not have been a stretch, given the amount of canvas in fixed panoramas in the round, described, generally, as “50 feet high and 400 feet in circumference.” Some 360-degree panoramas were still being produced and Wray introduces the phenomena of panoramas being shown in tents—small, medium, and large—increasing their flexibility and mobility, and contrasting with the fixed monumentality of purpose-built rotundas.

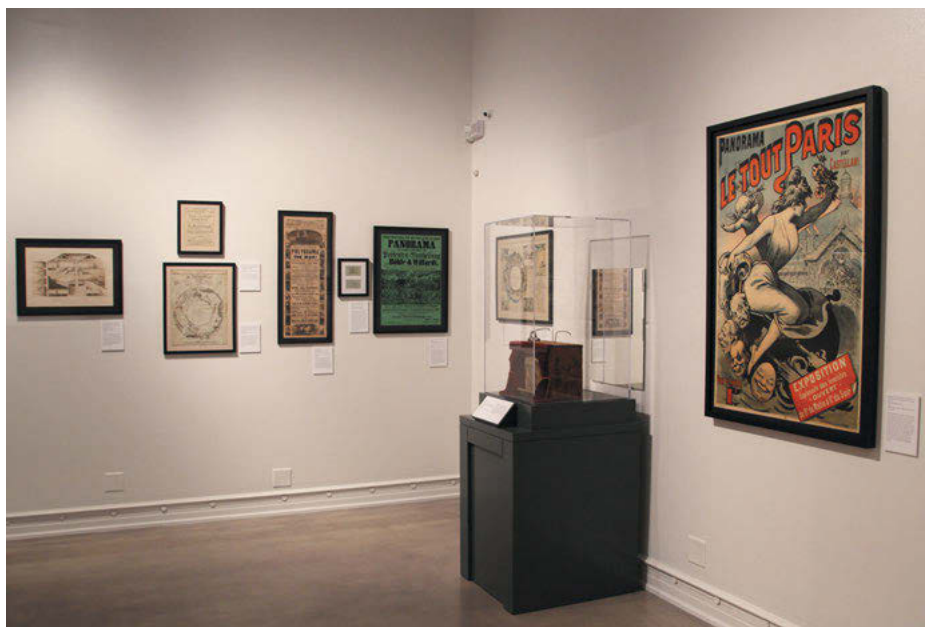


Fig. 4: Image of items on display in *Grand Views* exhibit, 2023. Image, courtesy of Forest Lawn Museum, Los Angeles.

The discovery of gold, fueling the gold rush, gave California its own proprietary subject for panoramas (Fig. 5).

The intrepid journeys from the East Coast by boat, around Cape Horn, and through the Panamanian isthmus were illustrated in more than one “moving mirror,” a poetic turn of phrase used to describe several moving panoramas. Getting to California from the East, in the past, whether by sea or land was not for the faint of heart. The cross-country journey was documented in drawings and watercolors (which survived) and a panorama (which did not) by James F. Wilkins in his *Moving Mirror of the Overland Trail*.

Wray documents the popularity of battle scene panoramas, particularly the many panoramas of the Battle of Gettysburg shown in California and around the country. One might shrug this off as an obsession with scenes of carnage from the Civil War in a war-crazed era long ago, but keep in mind, the phenomena of reenacting Civil War battles is alive and kicking today.

We learn about the trend of panoramas up and down the coast of California from the middle to the end of the nineteenth century. A number of cultural and technological factors contributed to the passing of the panorama as an entertainment format in the first years of the twentieth century, and many panoramas were destroyed in building fires. In San Francisco, it was nature that caused the dramatic *denouement*, as several panoramas were destroyed in the 1906 earthquake.

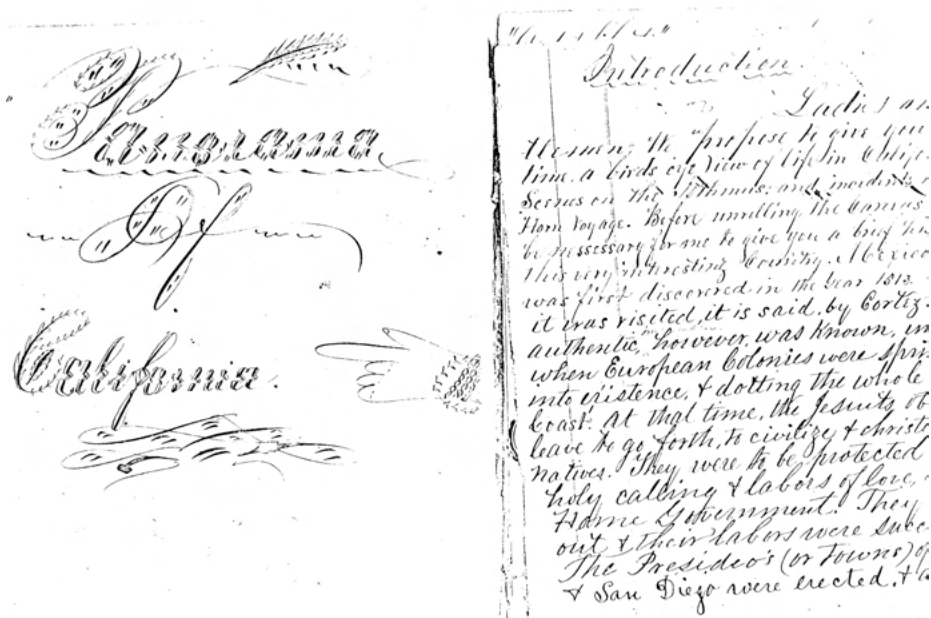


Fig. 5: L. Eaton Emerson, *Grand Moving Mirror of California*, 1853. Photocopy of the hand-written script sent to the Velaslavasay Panorama by Peter Morelli, trustee of the Saco Museum, Maine. Image, Velaslavasay Panorama, Los Angeles; used with permission.

Chapter 5, “The Velaslavasay Panorama: An Overview of its Paintings since the Year 2000” by Velaslavasay Panorama co-curators Ruby Carlson and Sara Velas, brings us the extraordinary history of panorama imagining, making, and promoting by Velas, Carlson, and their coterie of creative collaborators. The chapter unfurls the iterations of and, at the Velaslavasay Panorama for the last 20 years in Los Angeles, and how they came into being. The authors conclude in the first paragraph, regarding the closed loop of the 360-degree panorama, “Things are the same but different, and somehow we always end up back at the beginning.” This is a leitmotif of the Velaslavasay Panorama’s rich history, the inherent magic of a closed circle, a circular enclosure, on the macrocosmic and microcosmic levels.

This chapter chronicles the ambitious panorama creations, first by Velas in her *Panorama of the Valley of the Smokes*, which opened in 2000 in the Tswuun-Tswuun rotunda, a round building that had been home to several entities (including a Chinese restaurant) on Hollywood Boulevard. It’s the first instance of the collapse of timeframes and histories into each other that Velas deftly manages: the painting depicts the Los Angeles Valley in 1800, before the leviathan city we know today was born and exploded onto the landscape. I know from stepping into Velas’s first panorama years ago, how this modestly scaled 360-degree painting in a wonderful vernacular building, transported me 200 years into the past, through a landscape hazy with smoke from little

fires from inhabitants long ago. (It's not referenced in Velas's descriptions but one wonders if the painting contains encounters with Spanish colonists and Indigenous peoples?) It was an imagined haven and a deep breathing space. Due to a Los Angeles real estate transaction, the Velaslavasay Panorama was forced to relocate to the Union Theatre—another Los Angeles building with a rich history—and the second panorama in California in 100 years, *Effulgence of the North*, opened there in 2007 (Fig. 6).



Fig. 6: Sara Velas, *Effulgence of the North*, 2005–2007. *Faux terrain* by Asami Morita and Sara Velas, light cycle by Paula Peng and Sara Velas featuring an aurora borealis effect with phosphorescent pigment, 35-minute sound cycle by Moritz Fehr. Oil on canvas and painted papier-mâché, originally displayed in the round with a 90 ft. circumference. Image, photograph by Larry Underhill showing a section of the installation, Velaslavasay Panorama, Los Angeles.

Velas works with enormously talented creative people who bring her and their collective dreams to life, in ever more technically complex panoramic experiences. *Effulgence* imagined an Arctic landscape at night. Brought to eerie life with a light and sound cycle and a *faux terrain*, one was transported from an unlikely Los Angeles space (above the theatre, behind the screening booth) to the top of the planet—if the planet has a top, the positioning of the globe being a holdover of Euro-colonial thinking. A crystalline (recorded) *drip, drip, drip* sound made one hyper-aware of glacial melting—possibly not intentionally for this presentation of “the Arctic of the mind” but effective nonetheless.

Chapter 5 chronicles the next two ambitious Velaslavasay panoramas, the marvelous cabinet “crankie,” *The Grand Moving Mirror of California* which brought to life an 1853 script for a long-lost panorama of the same title. Presented first in 2010, the twenty-first century recreation of a nineteenth-century narrative, subtly and without bombast, illustrates earlier assumptions about the rightness of colonial conquest, with an ending one today could only experience as tragic, and most likely, in the past, would have been perceived as triumph.

The Velaslavasay Panorama's most recent tour de force, *Shengjing Panorama*, is just that, and much more. Inspired by attending the International Panorama Council conference in Shenyang in 2005, this evolved over many years' collaboration with Chinese artists at the Luxun Academy of Art. *Shengjing Panorama* is “the first panorama made jointly between China and the USA since the medium began, and is the most collaborative work, to date.” Brava, Bravo!

Not mentioned in the book, but marvelous, essential dimensions of the Velaslavasay Panorama, on Hollywood Boulevard and at the Union Theatre, were/are the lush gardens cultivated at each location, for intimate reflections after experiencing the panoramas, or enlivened at the many public events.

In addition to the aforementioned souvenirs created by the Velaslavasay Panorama, the centrality of printed ephemera to historical panoramas is maintained robustly with the continual production of printed materials, expertly designed in-the-manner-of historical panorama ephemera, and generously distributed to members. (The production must far exceed the income from membership.)

Grand Views features a selected bibliography including the International Panorama Council's *More Than Meets the Eye: The Magic of the Panorama* (2019). Edited by Gabriele Koller, essays by 29 authors take readers around the globe through contemporary scholarship on panorama phenomena. After flipping through *More than Meets the Eye*, and reading *Grand Views*, what I really want is the whole thing in a giant nutshell: a real-world cyclorama which visually, graphically, and conceptually situates every known panorama on an exploded 360-degree timeline, in the location, or the many locations on the globe, where all were shown, illustrated with reproductions of all known graphic marketing ephemera. Is that too much to ask?

In closing, one could argue that the urge to communicate visually in panoramic format originated in the ancient cave paintings of Africa and Western Europe. The struggle to conjoin ideas and representation and convert them into a new visual language has been a primary concern of visual artists throughout the history of art. The painted panorama, and panoramic expressions in other media, from ancient times to the cutting edge of contemporary technology, occupy a critical place in this elastic history. *Grand Views* is an essential primer in panorama. In closing I'll mention that all contributors to *Grand Views* are panorama scholars of the highest order.

Author Biography

Lisa Stone is an independent curator and preservationist, and retired (2020) curator of the Roger Brown Study Collection and Senior Lecturer in the Department of Art History, Theory, and Criticism, both at the School of the Art Institute of Chicago (SAIC). Her research, teaching, writing, and curating concern artists who work independently from the academic mainframe. Stone focuses on the preservation and interpretation of artist-built environments and collections. With Don Howlett she has written and implemented many preservation plans for artist-built environments through Preservation Services, Inc. She co-curated (with Kenneth C. Burkhardt) the exhibition *Chicago Calling: Art Against The Flow*, shown at Intuit: The Center for Intuitive and Outsider Art, Chicago, touring to Paris, Kaufbeuren, Lausanne, and Amsterdam (2018–2021). Stone has a Master of Science in Historic Preservation from SAIC. She works, seasonally, with soil, plants, and stone in her studio, a garden in rural Spring Lake, Wisconsin, in the United States

Daniela Chico

Beyond the Real: Alchemy, Illusions, and the City of Angels

Embarking on a visual journey through the vibrant cultural tapestry of Los Angeles, we delve into a unique realm that serves as a testament to the city's unparalleled bearer of diverse and immersive entertainment experiences. From the captivating brushstrokes of Emma Webster's *Intermission* at the Jeffrey Deitch Art Gallery to the expansive panoramas and dioramas held at the Velaslavasay Panorama and the Natural History Museum and the Hollywood Wax Museum, Los Angeles sets forth a dynamic canvas where art seamlessly converges with immersive storytelling. Los Angeles stands as a beacon for those seeking more than just visual engagement. Within its boundaries, viewers are not merely spectators; they become active participants in a multi-dimensional exploration of creativity and entertainment that repeats the defining question at the heart and soul of Los Angeles: what is real?

Emma Webster's *Intermission* unfolded at the Jeffrey Deitch Art Gallery in Los Angeles from 8 September to 4 November, 2023. Upon entering the gallery, spectators are immediately enveloped in Webster's meticulously crafted mise-en-scène, a veritable theatrical experience capturing both the essence of a stage and its concealed backstage realm. With her impeccable brushwork techniques, Webster's diverse range of multi-media paintings, arranged from left to right, constructs the scenic backdrop of the "play," seamlessly transporting viewers to a fantastical, forest-like setting. The alluring forest setting positioned as elements of the stage presents a mystical representation in various shades of green that stand out in contrast with the black gallery walls and backdrops surrounding them (Fig. 1).

Webster extends a warm invitation to the audience, encouraging exploration into the captivating realm of theatrical arts. Moving beyond the stage, the backstage area of the exhibition inundates viewers with a myriad of messages and objects, authentically mirroring the backstage experience. From evocative posters and mood boards to the imperative "Quiet Please!" sign and meticulously highlighted scripts steeped in historical art theories, the backstage enclave affords a revelatory peek into the intricacies of theatrical production (Figs. 2 & 3).

The backstage setting, complete with costumes neatly arranged on clothing racks and lingering food and coffee for the presumed actors, convincingly mirrors the ephemeral chaos of an actual backstage, despite its seemingly orderly appearance. Noteworthy details that immediately seized my attention included art theories adorning the walls, paintings discreetly positioned backstage, the flawlessly executed brush-

Daniela Chico, University of Southern California Los Angeles, California, USA



Fig. 1: Images, Daniela Chico, 2023.

work depicting the sets “on stage,” and a clock positioned atop lockers, displaying the current time (Figs. 4 & 5).

The inclusion of the clock’s precise alignment with real-time imparts a palpable sense of presence to the audience, blurring the lines between the constructed exhibition and the authenticity of a real-life stage. In the absence of actors and the presence of real-time, the spectator can, in a way, step into the roles of the seemingly missing actors. This heightens the immersive experience, as the presumed actor introduces a poignant emptiness to the environment while the spectator physically inhabits this temporal and spatial context.

Amidst the inspiration boards, stage directions, casting calls, and depictions of otherworldly trees, was the striking presence of art theory affixed to the walls. A single sheet of lined paper encompasses a set of notes bearing the heading “Jonathan Crary” and the subheading “Reality Effects.” Within these notes, Webster explores concepts traceable to Theodor Adorno, delving into aspects of virtual reality and capitalism from a Marxist perspective. The ideas revolve around “any process or form under capitalism that concealed or mystified its actual production or operation” (Webster), drawing parallels to how virtual reality introduces novel elements while concealing its technological origins deeply rooted in capitalism. Beneath these discussions, Webster writes definitions for “deja-vu” and “panorama,” scrutinizing the contention between the “real” and the constructed, suggesting how these constructed realities, lurking beneath the surface, can be interpreted as part of a capitalistic agenda. These insights contribute significant depth to the exhibit’s intentions, offering a nuanced interpretation of its details and demonstrating a complex self-awareness that the space we occupy is constructed, distinct from an authentic conception of “the real” (Figs. 6 & 7).



Figs. 2 & 3: Images, Daniela Chico, 2023.

Los Angeles happens to be the only site of a traditional-style 360-degree panorama on the West Coast, offering a unique spectacle reminiscent of a prominent nineteenth-century art and entertainment form, adding a one-of-a-kind charm to the city's notorious realm of entertainment. Transitioning from the exploration of Emma Webster's *Intermission* to the *Shengjing Panorama* at the Velaslavasay Panorama, the form of the exhibition takes on a different dimension. Unlike the introspective analysis of constructed realities and capitalism, the *Shengjing Panorama* transports its viewers to the city of Shenyang, China, 100 years ago. This 360-degree painting meticulously captures the city's essence, utilizing historical research and images to depict a convincing and detailed landscape.

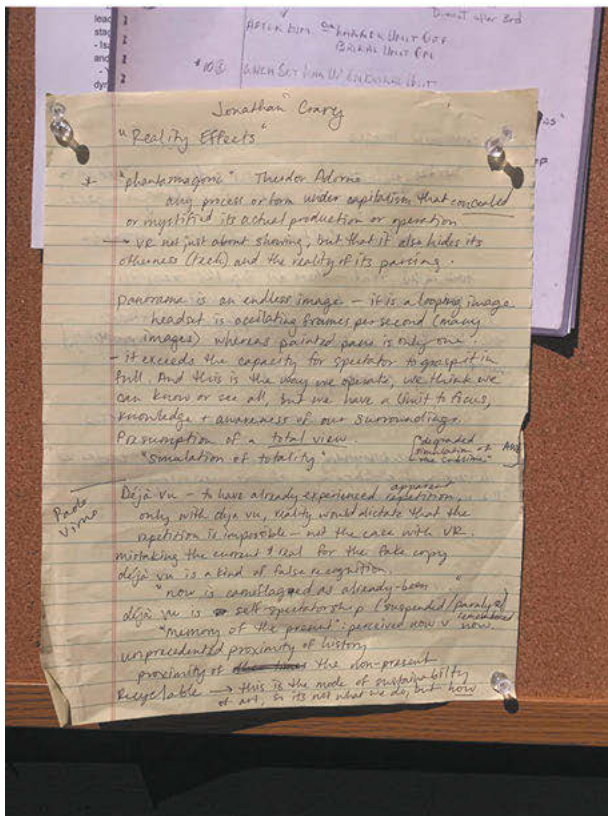


Figs. 4 & 5: Images, Daniela Chico, 2023.

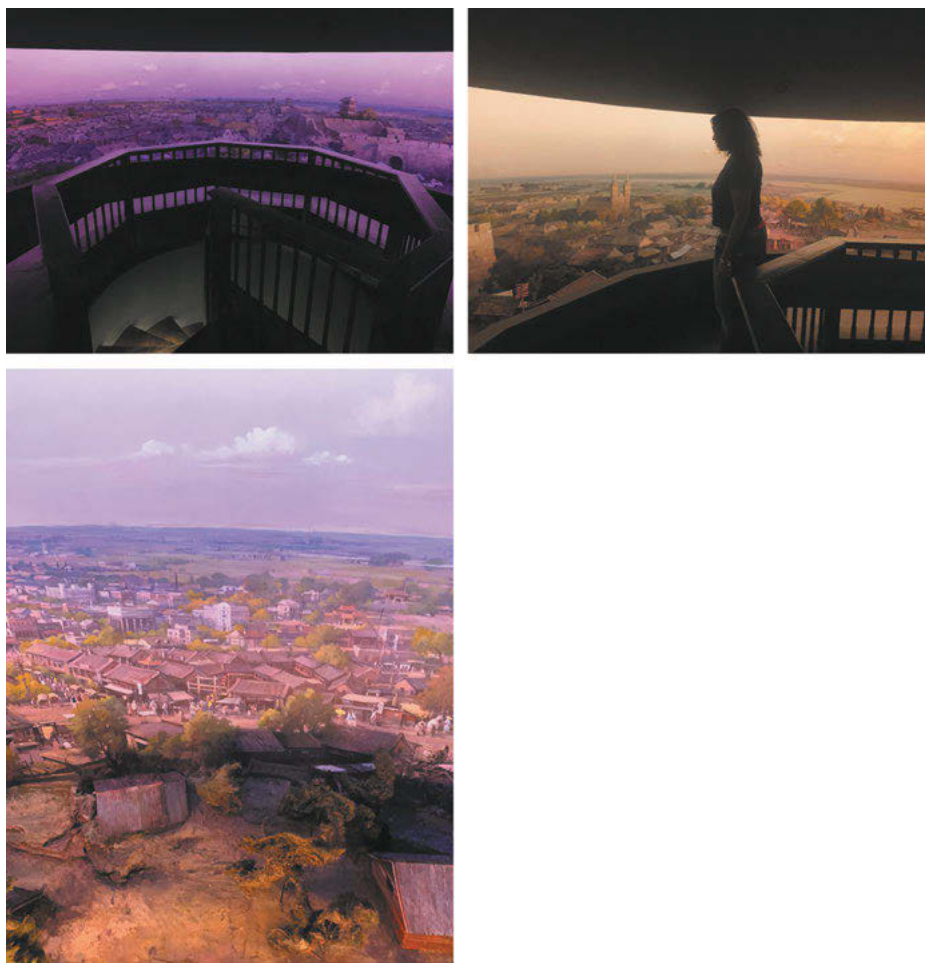
The use of linear perspective creates an illusion of a 3-dimensional environment, offering viewers perspectives ranging from a birds-eye view to an eye-level vantage point. In front of the flawless work seen in the painting lies a *faux terrain* with trees, rocks, mountains, and houses blending in with the painting as its background. Alongside the painting and diorama is a 40-minute light and sound cycle that conveys an experience of the city. As the light cycle shows the city's sunrise, daylight, sunset, and nighttime, it engages the viewer's sense of time in the space, reminiscent of the passage of time as referenced by the ticking clock in Webster's exhibition, bridging the gap between experiencing real-time and imagined time. As the colors of the painted sky change, it references the familiar view of the sky changing when I look outside my window during sunset, creating an illusion of reality at a smaller scale as my eyes scan the space. Because the space surrounds my entire field of vision, I am a prisoner of its intended gaze.

Despite its grandeur, the panorama's restricted scale holds the viewer in a unique manner, offering a modified version of the location curated by the artist. This zoomed-in focus on specific details, while presenting a convincing rendition of certain aspects like changing light, painted imagery, and immersive audio, inherently hinders a comprehensive portrayal of the authentic city experience (Figs. 8–10).

It's important to recognize the value of this intentional focus. By concentrating on selected details, the panorama provides a focused and curated perspective, guiding the viewer toward the artist's intended narrative. While it may not replicate the entirety of the city's look and feel, this deliberate restriction allows for a more directed and possibly heightened appreciation of the chosen elements. Compared to the limitless exploration of reality itself, the deliberate constraints of the panorama evoke a sense of intentionality and artistic direction, emphasizing a specific vision of the city. This approach aligns with other immersive exhibits, such as the dioramas at the Natu-



Figs. 6 & 7: Images, Daniela Chico, 2023.



Figs. 8–10: Images, Daniela Chico, 2023.

ral History Museum of Los Angeles County, which similarly employ distinct strategies and narratives to draw the viewer into representations of reality, albeit through different means.

Upon entering the African and North American Halls at the Natural History Museum, visitors come face-to-face with scenes of the lives of animals in various habitats. The dioramas at the NHMLAC, built circa 1930, offer a different approach to creating a representation of reality for the viewer than *Shengjing Panorama*. As mentioned in Vanessa Schwartz's work *Spectacular Realities*, the word panorama comes from "two Greek words—*pan*, which means all, and *horama* which means view—panorama signifies a total view." (Schwartz 1998, 150) While both art forms were in conversation

and especially prevalent during the nineteenth century, *Shengjing Panorama* offers a “total view,” with a sense of inescapability for your eyes and body.

The Natural History Museum, on the other hand, does a fantastic job of simulating a scene from reality as closely as it can using a diorama, creating an experience occurring only central to one’s peripheral vision. Especially in the scene with elephants and giraffes, this diorama uses its figures and large scale to give the illusion of real animals: the rough texture of their skin, the precise markings of wrinkles on the elephant’s trunk and ears, and the wide range of colors used greatly and realistically depict what these animals look like.



Fig. 11: Images, Daniela Chico, 2023.

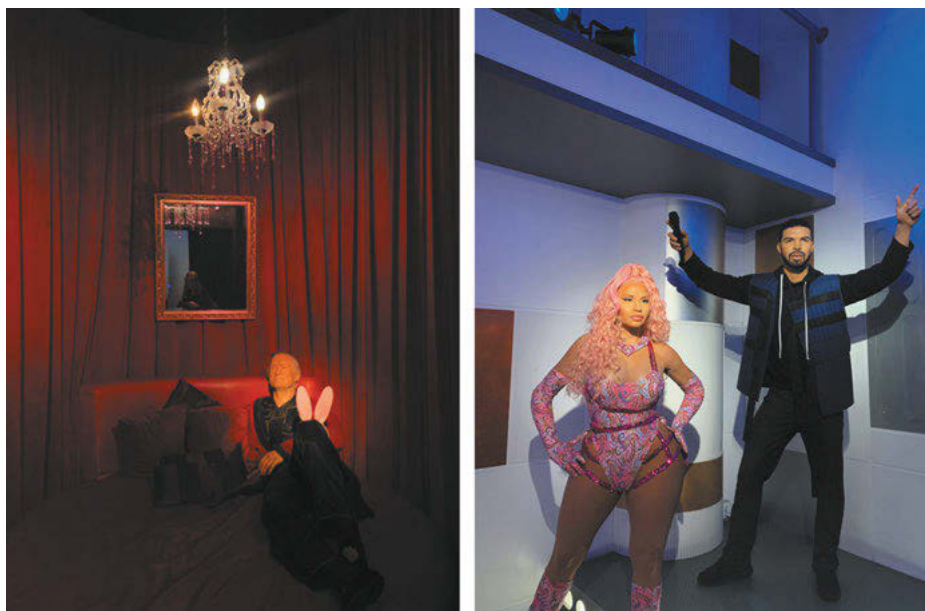
The dioramas not only impress visually but also excel in creating a scene that feels authentic, distinguishing itself from portrayals in children’s novels. Examining the intricate details, such as the giraffe bending over, suggests a realistic behavior of foraging for food on the ground. The depiction of the baby elephant looking up at the larger elephant implies a familial connection, mirroring natural dynamics in the animal kingdom.

Some animals (Fig. 11) are portrayed looking directly at the viewer, introducing a distinct element absent in the *Shengjing Panorama* at the Velaslavasay Panorama.

This attention to the audience adds a personal and somewhat provocative layer to the space, creating a perceived barrier between the scene and the viewers. The guard-like positions of some animals detract from the overall sense of reality found in the diorama. While visiting, it felt that beyond the gaze of the animals, the diorama seemed poised to come to life, inviting exploration into a deeper, unseen world.

Although the seamless blending of the background and foreground creates a convincing environment, the gaze of the animals raises questions about whether the viewer's welcome into this space—their gaze is guarded. In comparison, the Hollywood Wax Museum figures present another approach to realism.

Like the Velaslavasay Panorama and the Natural History Museum dioramas, the Hollywood Wax Museum is an immersive space using 3-dimensional figures and objects placed within settings as they would be in real life. The Hollywood Wax Museum uses wax figures to represent celebrities in their familiar contexts. As one walks around the huge museum full of twists and turns, they can find *Playboy* magazine founder Hugh Hefner laying on a bed with bunny ears on and turn to the left to find Nikki Minaj and Drake holding microphones and posing on a stage (Figs. 12 & 13).



Figs. 12 & 13: Images, Daniela Chico, 2022.

As my friend and I walked into the space, we were crowded by a room full of wax figures in a seemingly award ceremony-like room, at first overwhelmed by the num-

ber of people around us. However, these weren't actual people, they were wax figures. At first glance, these figures perfectly resemble human celebrities: they fit to scale, they were wearing clothes recognizable from their representations online or in movies, and they wore wigs that resembled human hair. Even their facial expressions were recognizable—their makeup, birthmarks, wrinkles, creases on their foreheads and around their mouths, even their facial hair looked real, as though it was carefully constructed with the use of singular hairs. The very fact that it felt crowded, as though there were a group of people in the room, was frightening enough to believe that they were real people. We were allowed the freedom to walk around and explore the different rooms and their separate celebrity worlds, and it truly felt like we were taking photos with frozen versions of those celebrities. The fact that the viewer is allowed to approach the figures so closely is what gives the greatest illusion of "the real" because it feels as though we are in their world and in the space that was constructed to suit them—we are in their version of reality.

In Jean Baudrillard's essay "The Hyper-realism of Simulation," he defines the idea of "the real" as "that for which it is possible to provide an equivalent representation." (Baudrillard 2001, 144) Throughout the excerpt, Baudrillard argues that representations of reality have been produced in relation to the truth, however, the truth is something that is completely constructed, so it is, therefore, impossible to distinguish reality from a simulation of reality.

Compared to the Velaslavasay Panorama and the Natural History Museums, the Hollywood Wax Museum sometimes created an environment where the wax figures closely resembled celebrities and their media portrayals, blurring the distinction between the wax representations and our perception of real celebrities. Because celebrities are socially constructed and already at a distance from everyday citizens, a representation of them as wax figures that we can take pictures with seems equivocal to seeing them in real life, further supporting Baudrillard's idea of an "equivalent representation," which is what defines "the real."

From the meticulous *mise-en-scène* of Webster's exhibition, which beckoned viewers into the realms of stage and backstage, to the expansive panoramas at the Velaslavasay Panorama and the naturalistic dioramas of the Natural History Museum, viewers are faced with more than just an art canvas or everyday form of entertainment; these spaces play active roles in the creation of immersive narratives. The city's exclusive possession of a traditional 360-degree panorama adds a layer of uniqueness to its already colorful cultural scene, inviting viewers to be enveloped in a one-of-a-kind spectacle of nineteenth-century art and entertainment. In essence, Los Angeles emerges as a living canvas, where the boundaries between reality and artistry blur, and viewers are not just observers but active participants. The journey through the city's immersive landscapes emphasizes the role of Los Angeles' as a cultural epicenter, inviting audiences to step beyond the traditional gallery confines and become part of the ever-evolving narrative that defines this dynamic and enchanting metropolis.

Author Biography

Daniela Chico was born on November 30th, 2003, in San Francisco, California. She is currently a student at the University of Southern California's Cinematic Arts Division of Cinema and Media Studies in Los Angeles. Having grown up in San Francisco, she has always demonstrated a keen appreciation for the arts, engaging in activities such as drawing and photography, leading her to the realms of film and television. Her mission is centered on amplifying the voices of historically underrepresented communities. Specializing in the intersections of gender, realism, femininity, race, class, and music within media, she feels called to bring a fresh perspective to cinematic storytelling. Her passion for these creative mediums has cultivated a strong foundation, and she envisions bringing meaningful contributions to the film industry upon her anticipated graduation in 2026.

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7 Call for the 2024 Conference

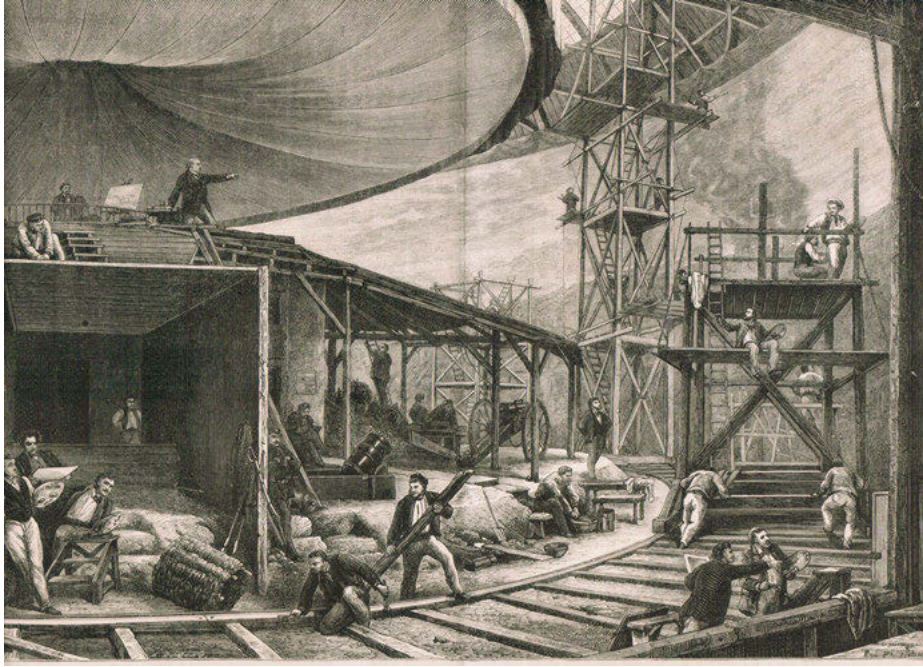


Fig. 1: *Panorama Défense de Paris, Champs-Élysées, Paris*, during its execution. *Le Monde Illustré*, Nov. 2, 1872, 276. Image, Gabriele Koller.

Panoramas as Memory of the World: The 33rd International Panorama Council Conference

Hosted by the Laboratory for Experimental Museology, Swiss Federal Institute of Technology (EPFL)

Lausanne, Switzerland | October 02–06, 2024

The International Panorama Council and the EPFL Laboratory for Experimental Museology formally invites scholars, artists, panorama/diorama enthusiasts and panorama/diorama practitioners to submit proposals for presentations that explore the theme of “Panoramas as Memory of the World” (Fig. 1). Panoramas, in their various forms, seek to create an immersive experience by transporting visitors into another space. They commemorate events or celebrate memorable landscapes. Through their installations in staged ecosystems and their tailored mechanisms of illusion, they also create memories. The pioneering role of panoramas as the first immersive media in the nineteenth century can be assessed in the light of technological developments, from mechanical analog back then to computer-assisted digital today. By exploring painted panoramas

from a media archaeology perspective, we gain a richer understanding of the historical trajectories of media technologies, aesthetics, and cultural practices, many of which continue to influence our media landscape today. We are also able to establish the basis for UNESCO Memory of the World listing by examining these pertinent issues.

We welcome proposals for field reports, creative presentations, media presentations, and scholarly papers of up to 20 minutes in length that focus on the memorial aspect of the panorama's media form, including the socio-cultural and political roles of panoramic memories; the mechanics of illusion from analog to digital; the digitization and conservation of panoramas and their archives; the Memory of the World UNESCO program and panoramas; and other topics related to the conference theme. A detailed thematic conference outline from EPFL is available at <https://www.epfl.ch/labs/emplus/wp-content/uploads/2023/12/Conference-Themes.pdf>.

The IPC conference will present a diverse range of session topics based on the proposals, as well as workshops and roundtables. It will be of interest to academics, professionals, students, and enthusiasts of art, architecture, art history, conservation and preservation, cultural heritage, design, history, media, museum practice, panorama management, restoration, virtual reality, and visual culture, as well as to thinkers and makers from other disciplines or whose work is transdisciplinary with an interest in immersive media, mediated sensation, or any other related field of research.

The conference will take place October 02–04, 2024, with an optional post-conference excursion on October 5–6, 2024.

Please direct queries related to conference attendance to the IPC Secretariat—secretariat@panoramacouncil.org. For more information about the International Panorama Council and the Conference, please visit <http://panoramacouncil.org/>.

PANORAMA

International Panorama Council

IPC Mission

The International Panorama Council (IPC) is the international organization of panorama specialists committed to supporting the heritage and conservation of the few existing panoramas dating from the nineteenth and early twentieth centuries, and promotes knowledge and awareness of the panorama, including its current relevance and development. IPC's main goal is to promote professional trusteeship and stimulate worldwide research and communication on panoramas, both historic and modern. IPC's interests include the panorama phenomenon in a wider context including nineteenth-century derivatives of the panorama such as the moving panorama and the diorama as well as modern art forms that are closely related to the panorama, such as photography, film and video. IPC is active in the fields of restoration, research, financing, exhibiting and marketing of panoramas.

The International Panorama Council is a non-government and not-for-profit association subject to Swiss law.

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Index

3D MAX [software] *see* software

Academia Imperial de Belas Artes, Rio de Janeiro, Brasil 6, 7

Accessibility 164, 165, 295

Adlard, James 230, 235, 236

Adobe Fresco [software] *see* software

Adobe Photoshop [software] *see* software

Albatross (steamboat) 215

Altötting, Germany 137, 161, 164, 166, 168, 169, 237, 308, 309, 311, 313, 314, 324, 325

American Federation of Labor (AFL) 290

American Panorama Company, Milwaukee, Wisconsin, USA 139, 141

Andrew W. Mellon Foundation 52, 102, 322, 330

Andrews, E. T. 290

Andy Warhol Foundation for the Visual Arts 35

Apple Maps 189

Archéovision Group 14

Arquivos da Escola de Belas Artes da UFRJ, Rio de Janeiro, Brasil 12

Atlanta History Center, Atlanta, Georgia, USA 137, 139, 141–160, 309, 324

Austen, Edward J. 246

Autry Museum of the American West, Los Angeles, California, USA 46

Azimuthal projection 276–282, 285–287, 290;
see also mapping

Babylon 3D Group 13

Baker, Bob 46, 48

Banvard, John (American, 1815–1891) 77, 78, 80–87, 89, 90, 93, 95–102, 289, 291, 308, 316, 317

Barker, Henry Aston 228, 229, 230

Barker, Robert 117, 123, 125–134, 225, 227–229, 231, 235, 236, 253, 262, 274, 275, 278, 313

Barton, William 234, 274, 276–278

Bastien, Alfred 334, 335

Battle of Atlanta *see* panoramas, round
and cycloramas

Battle of Gettysburg *see* panoramas, round
and cycloramas

Battle of Murten *see* panoramas, round
and cycloramas

Battle of Paris *see* panoramas, round
and cycloramas; *see also* panorama keys

Baudelaire, Charles 46, 48

Baudry, Jean-Louis 72

Baum, L. Frank 177

Bautista, Sara 48

Bavarian State Office for Monument Protection,
Munich, Germany 161

Bazin, André 55, 57–62, 63, 69, 71, 74, 75

Becerra, Aurora 46

Beckett, Samuel 72

Behaim, Martin 280

Bell, John 96

Berger, Gustav A. 147, 149, 150

Bernard, Jean-François 14

Bicycle Thieves [film] *see* film titles

Bierstadt, Albert 245

Billings, William 287, 290

Blarel, Julien 14

Bly, Nelly 286–289

Bolter, Jay David 251

Bonaparte, Napoleon I. (Emperor) 229, 234

Boston Riding School 229

Bottom's Dream *see* Zettel's Traum

Breath of the Wild [film] *see* video game titles

Bradford, Oberon 13

Brathwaite, Kamau 44

Braun, Louis 295, 297, 301

Breysig, Johann Adam 118

Bricher, Thomas 90, 91, 93, 94, 289, 291

Building Four Fabrication (Atlanta) 155

Burford, Robert 228, 232, 236

Burridge, Walter 239, 241–242

Catherwood, Frederick 231, 232

Cao, Andy 48

Capturing of Jinzhou *see* panoramas, round and
cycloramas

Carlson, Ruby 48, 347

Chaillou, Christophe 251, 252, 255, 256, 264, 265

Chang, Chu-Hsuan 44

Chang, Sue 49

Charles the Bold 301, 302

Chase, Charles A. 246

Chateaubriand, François-Auguste-René de 117, 118

Cheah, Pheng 39

Chinatown Archive, Los Angeles, California, USA 49

Chinese Kwun Opera Association 49

Chinese People's Revolutionary Military Museum,
Beijing, China 36

- Church, Frederic Edwin 57
Citizen Kane [film] *see* film titles
 Clark, Robert 344, 345
 Clemens, Samuel Langhorne *see* Twain, Mark
 Cochran, Elizabeth Jane 286, 287
 Codrington County Heritage Museum, Watertown,
 South Dakota, USA 85, 102
 Conservation 46, 87, 139, 140, 147, 149, 161, 163,
 164, 192, 199, 201, 206, 209, 214, 222, 264, 295,
 296, 300, 303, 308, 309, 322, 323, 364, 365
 Cordier, Baude 287
 Copp, Ellen Rankin 240
 Corwin, Charles A. 204, 206, 214, 217, 221
 Crooks, Liz 101, 199, 203, 214, 220–223
 Compton, Robert 83
 Cycloramas *see* panoramas, round and cycloramas
- Daguerre, Louis 110
 David, Jacques-Louis 118
 David Rumsey Map Collection, Stanford Libraries,
 Stanford, California, USA 281, 282, 287–289
 Davis, Bette 177
 Davis, Theodore 139
 Decismus, Steve 13
 Deleuze, Gilles 69
 DeLyser, Cydia 44
 Denison, Edward 33
 DesChamps, Élise 79, 101, 317
The Deserted [film] *see* film titles
 Detaille, Édouard 264, 265
 Dickens, Charles 111
 Dickeson, Montroville W. 322
 Digital media
 – digital graphics 6, 12–14, 17
 – digitization 295, 298, 303, 364
 – digital twin 13, 295, 296, 298–301, 303,
 332, 335
 Dill, Homer 204–206, 214, 216–218, 221, 222
 Dinsmoor, S. P. 308, 318, 319
 Disney, Lillian 177
 Disney, Walt 177, 325
 Ditson, Oliver 291
 Drawing *see* spherical drawing
 Duclère, Teodoro 192, 193
 Duke of Burgundy 296
 Duke of Cumberland 283
 Duke of Orleans *see* Phillippe, Louis
 Dunn-Morton, Julie 102
- Eaton, Hubert 177
 Edinburgh University Library, Edinburgh,
 Scotland 126, 130–132
 Edison, Thomas 246, 247
 Emerson, L. Eaton 347
 Electrical effects 243, 246, 247
Effulgence of the North *see* panoramas, round
 and cycloramas
 Eidophusikon 85
 Evans, Alex 49
 Experience *see also* Chateaubriand,
 François-Auguste-René de; Grand Tour;
 optical unconscious; Poe, Edgar Allan
 – embodied 4, 185, 253, 259
 – emotional 21, 29, 36, 90
 – game and gaming 56, 58, 61–63, 68
 – imaginary 79
 – immersive 3, 4, 5, 11–20, 22, 38, 57, 58, 84–86,
 107, 110, 112, 201, 203, 214, 253, 280, 343, 352
 – memory 88
 – performative 78, 80, 316
 – viewing 80, 84, 90
 – virtual 57, 75, 253, 259, 274, 315, 331, 332, 333
- Farge, Arlette 88
faux terrain 3, 5, 11, 16–21, 31, 38, 137, 139, 140–153,
 155–161, 163–168, 242, 251, 309, 311, 323, 331,
 333–335, 348, 354
 Fergola, Salvatore 191–193
 Ferrone, Harrison 15
 Field Museum, Chicago, Illinois, USA 217, 324
Film [film] *see* film titles
 Film studies 55
 Film titles
 – Aquarela (dir. Viktor Kossakowsky 2019) 326
 – *Bicycle Thieves* (dir. Vittorio De Sica, 1948) 60
 – *Citizen Kane* (dir. Orson Wells, 1941) 61
 – *The Deserted* (dir. Tsai Ming-Liang, 2017) 58, 71
 – *Film* (dir. Alan Schneider, 1965) 72
 – *Germany, Year Zero* (dir. Roberto Rossellini,
 1948) 60
 – *Gone With The Wind* (Victor Flemming 1939)
 140, 158
 – *Journey to Italy* (dir. Roberto Rossellini, 1954) 69
 – *Open City* (dir. Roberto Rossellini, 1945) 60
 – *Russian Ark* (dir. Alexander Sokurov, 2002) 62
 – *Rear Window* (dir. Alfred Hitchcock, 1954) 71, 72
 Final Fantasy VII [video game] *see* video game titles

- Final Fantasy XI* [video game] *see* video game titles
- Fire
- effects visual 244, 247, 314
 - depiction of in panoramas 231, 240–242
 - destruction of panorama assets 183, 225, 227–229, 231, 232, 346
 - safety measures 159, 160
- Fishburne, James 343
- Flaherty, Robert 325
- Forest Lawn Memorial Park, Los Angeles, California, USA 46, 175–177
- Foster, S. C. 287
- Friedrich, Casper David 66, 67
- Fundação Biblioteca Nacional, Rio de Janeiro, Brasil 9, 10, 12
- Futschick, Uli 185–187, 327
- Fuxian, Zhou 28, 34, 37, 39, 41
- Ganon, Calamity 63, 64
- Gable, Clark 140, 158, 177
- Games
- game industry 13, 269
 - parlor games and toys 273, 286, 319
 - video games 4, 15, 55–59, 61–63, 66, 68, 69, 71–75; *see also* video game titles
 - game engines 12–15, 20, 22, 72, 252, 261, 262, 269, 311, 333, 334
- Gardens 116, 114
- Eden 308, 318, 319
 - Memorial 344
 - Velaslavasay 46, 349
 - Versailles 225; *see also* panoramas, round and cycloramas
- Germany, Year Zero* [film] *see* film titles
- Gervex, Henri 236
- Gettysburg Cyclorama *see* panoramas, round and cycloramas
- Glaum, Louise 25
- Goldberg, Lisa 207
- God of War* [video game] *see* video game titles
- Gone With The Wind* [film] *see* film titles
- Gonzalez, Oswaldo 41
- Google Maps 58, 189
- Grand Moving Mirror of California *see* panoramas, moving
- Grand Tour 66–69, 71, 192; *see also* traveling theory
- Grant Park *see* panoramas, round and cycloramas—Battle of Atlanta
- Gray, Tim 185
- Greenstein, Paul 44, 49
- Grigely, Joseph 344
- Gropius, Carl Wilhelm 110
- Grover, Oliver Dennett 242
- Grusin, Richard 251
- Guangdong Movie Park, Shenyang, China 38
- Guildhall Library, London, UK *see* London Metropolitan Archives
- Guochuang Global 360 Logistic 41
- Hartsfield, William 158
- Harvey, Ron 207, 208
- Hegi, Franz 284
- Heilbron, Bertha 78, 90
- Heine, Friedrich W. 139, 141
- Henderson, Charles K. 157
- Hermann, Emilio 7
- Hirsch, Jeff 207
- History in 3D Group 14
- History Museum of Bern 299
- Hitchcock, Alfred 62, 71
- Hittorf, Jacques Ignace 253–257, 260, 261
- Hollywood Wax Museum (Los Angeles) 351, 358, 359
- Hornaday, William T. 204, 205
- HTC Vive 56, 58
- Hubmayer, Joseph 16, 17, 21
- Huhtamo, Erkki 245, 341–349
- IIViMaT* [software] 261, 262, 269, 270, 331, 332
- Illustrirte Mississippithal, Das* (Lewis, Henry, 1854) 100, 316
- Immersion 3, 5, 14, 15, 28, 38, 47, 55–75, 262, 282, 320, 333
- Immersive rhetorics 273, 319, 320
- Immersive experience *see* experience
- Incorporation *see* experience, embodied
- Industrial Workers of the World 290, 292
- Instituto Federal de Ouro Preto 16
- Jackson, Michael 177
- Jacob, Kais 14
- James Arsenault & Company 92, 102
- Janscha, Laurenz 274
- Jaresch, Johann 234
- Jaunt ONE 58
- Jeffrey Deitch Art Gallery 351

- Jinan Campaign Storming of Heavily Fortified Positions in the City *see* panoramas, round and cycloramas
- Jesus 181
- Jones, Gordon L. 244
- Joseph Hurt Studio 147
- Journey to Italy [film] *see* film titles
- Juul, Jesper 63
- Keaton, Buster 72
- Kilauea Cyclorama *see* panoramas, round and cycloramas
- Kilauea Volcano House Company 241, 242
- King George III of Great Britain and Ireland 126
- Koester, Megan 48
- Koller, Gabriele 342
- Kossakovsky, Viktor 326
- Koster and Bial's Music Hall (New York) 247
- Kraus, Rosalind 69
- Kunimune, Justin 282
- Kurtz, Wilbur G. 139, 143–145, 147, 150, 155
- La Grande Station, Los Angeles, California, USA 27
- Labor unions
- American Federation of Labor (AFL) 290
 - Industrial Workers of the World 290, 292
- Laboratory for Experimental Museology, Federal Institute of Technology, Lausanne, Switzerland 295, 296, 298, 299, 363
- Langlois, Charles 235
- Langerock, Henri Charles 5, 6, 7, 12–21, 311, 333, 334
- Laysan Island 199, 201, 203, 204, 213–216, 218–220
- Laysan Island Cyclorama *see* panoramas, round and cycloramas
- Lazzari, Joseph 154
- Lee, Doreen 79, 101, 317
- Legend of Zelda* [video game] *see* video game titles
- Lescop, Lauren 253, 255–257, 260, 269
- Letters patent 125, 126, 130, 131, 132
- Lewis, Henry 90, 100, 316
- Lickei, Christy 102
- Lincoln, Abraham 287
- Lima, Peru 6, 232
- Llorens, Victor 139, 144, 147, 150, 155
- Lloyd and Mary Ann Whitaker Cyclorama Building, Atlanta, Georgia, USA 140, 155
- Loginov, Danila 14
- Lohr, August 139
- London Metropolitan Archives, London, United Kingdom 231
- Longfellow, Henry Wadsworth 100, 101
- Loutherbourg, Philippe James, de 85
- Lu Xun Academy of Art, Shenyang, China 28, 35, 36
- Lumion* [software] *see* software
- Lusieri, Giovan Battista 192
- Lyman, Theodore 228
- Maceroni, Francis 236
- Maclean Collection, Lake Bluff, Illinois, USA 102, 293, 320
- Madison Square Garden, New York, USA 246
- Mäcklin, Harri 38
- Magic lantern 64, 85, 111, 246, 247, 344
- Manchuria, China 25–27, 30–33, 35, 36, 309, 321, 322
- Mans, Leo 252
- Mapping
- lettering 273, 278, 280, 285–288, 290, 308, 319, 320
 - pocket map 284, 285
 - projection *see also* azimuthal projection; spherical projection
- The Marco Polo Bridge Event *see* panoramas, round and cycloramas
- Marian pilgrimage 137
- Marold, Luděk 328
- Marrin, Bridget 48
- Mathieu, Paul 334, 335
- Martini, Martin 301, 302
- Matsushita, Tetsuya 66–69
- Maze* [video game] *see* video game titles
- McConnell, E. W. 243, 244
- McDermott, John Francis 78, 90
- McMillen, Michael 48
- Médiations AudioVisuelles Immersives et Interactives (MAVII) 261
- Medina, Jonathan Biz 253
- Meirelles & Langerock Panoramas Company 7
- Meirelles de Lima, Victor 5–21, 311, 333, 334
- Melbourne Museum 13
- Meldeman, Nikolaus 278, 279, 280
- Mellace, Marco 14
- Menoh, Lun*na 46
- Metropolitan Museum of Art, New York, USA 226
- Michalowski, Hermann 141
- Minecraft* [video game] *see* video game titles

- Ming-Liang, Tsai 58, 71
 Miniatur Wunderland, Hamburg, Germany 320
 Miniature World, Staten Island, New York, USA 320
 Minnesota History Center, St. Paul, Minnesota 78, 83, 86, 90, 93, 102
 Mississippi River
 – Mississippi Waltzes, the 79, 90, 93, 289, 291, 301, 317
 Modeling
 – 3D geometric models 6, 332
 Mont Rigi-Kulm 284–287
 Mulholland, William 177
 Museu Histórico Nacional, Rio de Janeiro, Brasil 11, 12
 Museu Nacional de Belas Artes, Rio de Janeiro, Brasil 12
 Museu Nacional da Quinta da Boa Vista, Rio de Janeiro, Brasil 11
 Music *see also* theater
 – accompaniment to panoramas 3, 44, 49, 79, 80, 83, 90, 101, 239, 246
 – performance 61, 77, 95, 99, 301, 302, 308, 314, 317, 323, 330
 – sheet music 77, 91, 92, 91, 93, 273, 287, 288, 290
 Muybridge, Edward 247
- Napoli Capodichino, Italy 185, 186, 191, 192, 193
 Natural History Museum, Los Angeles, USA 351
 La Nature à Coup d'Œil 125–134
 Neuville, Alphonse de 264–266
 New Harmony, Indiana, USA 86
 Niagara *see* panoramas, round and cycloramas
 Nintendo 56
 Nintendo Switch 56, 62, 64
 Nutting, Charles 203, 204, 214–217, 219, 221–223
- Observatório da Escola Politécnica, Rio de Janeiro, Brasil 17–21
 Oculus Quest 259, 262, 269, 333
 Oculus Rift 56
 Ohio River 77, 80, 81, 86, 95, 322
 Ohuaregbe, Jeffrey Ose 79, 102, 316
 Olivier, Laurent 88
Open City [film] *see* film titles
 Optical unconscious 4, 105, 106, 111, 119
- Pan-American Exposition, Buffalo, New York 244, 246, 247
 Panorama+ 299, 300
 Panorama keys 275, 278
 – A Description of a View of Thebes 233
 – Panorama of London 275
 – Panorama of the Battle of Paris 230
 – Topographical Explanation of the Panorama of Vienna 276
 – View of London 274
 – View of Paris 235
 Panoramas
 – round and cycloramas
 – Athens 228, 229
 – Battle of Atlanta 137–160, 245
 – Grant Park 139–143, 147, 149, 150, 153, 159
 – Capturing of Jinzhou, Beijing 36
 – Chicago Fire 242, 245, 246
 – Edinburgh 231
 – Effulgence of the North (Velaslavasay Panorama) 26, 43
 – View of the Falls of Niagara 232, 236
 – Battle of Gettysburg 243, 244, 245, 246, 346
 – Battle of Manila Bay 247
 – Battle of Tell-El-Kébir 7
 – Congo 311, 334, 335
 – Jerusalem and the Crucifixion of Christ (Altötting) 137, 161–169
 – Jinan Campaign Storming of Heavily Fortified Positions in the City 37
 – Kilauea Cyclorama 239–247, 308, 314
 – Laysan Island Cyclorama 199, 201, 202, 203, 205, 207, 209, 210, 213–216, 221, 222, 307, 309, 323, 324
 – London 227
 – The Marco Polo Bridge Event, Beijing China 36
 – Mount Etna 118; *see also* Poe, Edgar Allan
 – Battle of Murten 295–303
 – Battle of Paris (Attack of the Allied Forces on Paris) 229, 230, 231
 – Panorama au Prater, Vienna 234, 288
 – Rio de Janeiro 5–22
 – Shengjing (Velaslavasay Panorama) 26
 – Taejon Liberation Operation, Pyongyang 35
 – Thun 226, 228

- Valley of the Smokes (Velaslavasay Panorama) 26, 43, 347
- Palace and Gardens of Versailles 225
- moving 3, 26, 48, 77–80, 84, 85, 87, 88, 90, 96, 247, 289, 308, 309, 316, 322, 323, 344, 345, 346
- Grand Moving Mirror of California (Velaslavasay Panorama) 26, 38, 347, 348
- A Grand Panorama of a Whaling Voyage Round the World 87
- Panorama of the Mississippi River 77–80, 83, 84, 289, 316
- Panorama of the Monumental Grandeur of the Mississippi Valley 87, 95, 309, 322
- Scenes from the Life of Christ 87
- Sioux War Panorama 96, 97
- Velaslavasay Panorama 25–52, 182, 309–310, 321–322, 341–349, 351–359
- rotundas 7–9, 11, 27, 37, 43, 126, 137, 143, 148, 149, 153, 161, 162, 164, 226, 228, 229, 231, 232, 234, 235, 237, 239, 240, 243, 246, 251, 253, 255, 259, 260, 262, 274, 321, 334, 344, 345, 347
- landscapes
 - Hagenbeck Panorama 114
- Peale, Charles Willson 329
- Pegg, Richard 102, 273
- Pentacrest Museums *see* University of Iowa Museum of Natural History
- Peytona (Steamboat) 94, 95
- Phillippe, Louis (Duke of Orleans) 81
- Philippoteaux, Paul 243, 244, 343
- Plato 71
- PlayStation 56, 59
- Poe, Edgar Allan 105–107, 109–111, 113, 114, 116–118
- Postl, Karl 274
- Prévost, Pierre 227, 228
- Printed matter and print media 273, 319; *see also* panorama keys; sheet music; tourist brochures and guide books; mapping, pocket map
- ephemera 86, 87, 344, 349
- Proust, Marcel 118
- Prown, Jules David 88
- PTGui* [software] *see* software
- Realism 57, 60, 61, 63, 64, 77, 84, 110, 241, 358, 359
 - film and cinematic realism 60, 61, 57, 69, 74, 77, 84
 - hyper-realism 359
 - New Realism (Neorealismo) 55, 60, 61, 74
- Reading, Andrew J. 102
- Rear Window* [film] *see* film titles.
- Rembrandt *see* Rijn, Rembrandt Harmenszoon van
- Ren, Guangyu 33
- Restoration 137, 139, 140, 143, 147, 148, 154, 157, 159, 161, 163, 166, 201, 206, 207, 209, 221, 328, 334, 364, 365; *see also* conservation
- digital 300
- Richmond, Susan M. 93
- Rijksmuseum (Amsterdam) 299
- Rijn, Rembrandt Harmenszoon van 299
- Rio de Janeiro *see* panoramas, round and cycloramas
- Ritter, C. H. 239, 242, 314
- River Cement Company 97
- Robinson, C. D. 245
- Rong, Guan 38, 40, 48
- Roosevelt, Theodore 204, 218
- Rossellini, Roberto 60, 69
- Roth-Wells, Nina 207, 208
- Russian Ark* [film] *see* film titles
- Said, Edward 29
- Saint Louis Art Museum, Saint Louis, Missouri, USA 87, 100, 102
- Salzman, Ava 48
- Sattler, Johann Michael 225, 227
- Scenic Theater *see* theater and music
- Schmid, David Alois 284
- Schmid, Franz 284
- Schmidt, Arno 105–119
- The School of the Art Institute of Chicago, Chicago, Illinois, USA 79, 102
- Schoolcraft, Henry Rowe 100
- Schoon, Theodor 285
- Schultz, George Augustus 283
- Schwieso, Harriet 90, 93, 96
- Selma, Missouri, USA 97, 99
- Semana de Integração Acadêmica UFJR (SIAC), Rio de Janeiro, Brasil 17
- Sesser, William F. 243
- Shallcross, John 95
- Sheet music 90–92, 102, 287–290
- Shengjing *see* panoramas, round and cycloramas
- Shenyang 25–54, 321, 348, 353
- Shenyang Station 27
- Shenyang Visual Archive (SVA), Shenyang, China 49, 50

- Shigeru, Miyamoto 56
 Shushen, Xia 35, 36, 41
 Sica, Vittorio De 60
SketchUp [software] *see* software
 Smith, James 83
 Smith, Jessica 221, 223
 Smith, T. P. 83, 89
 Smithson, Robert 69, 70
 Snell, Weis C. 139, 144, 146, 147, 150, 152, 155, 157, 158
 Sociedade Iberoamericana de Gráfica Digital (SIGRADI) 17
 Software
 – 3D MAX 13
 – *Adobe Fresco* 195
 – *Adobe Photoshop* 195
 – *IIViMaT* 261, 262, 269, 270, 331, 332
 – *Lumion* 16
 – *PTGui* 195, 298, 299
 – *SketchUp* 13
 – *Unity* 13–15, 18–22, 252, 258, 261, 262, 267, 269
 – *Unreal* 13, 14
 Sokurov, Alexander 61, 62
Spasim [video game] *see* video game titles
 Sphere, Las Vegas, Nevada, USA 175
 Spherical projection *see also* azimuthal projection; mapping
 – drawing 185, 187, 188, 194, 195, 310, 327, 328
 Spiral Jetty 69, 70, 71, 75; *see also* Smithson, Robert
 Spring Thunder Music Association 49
 Soundscape *see* music, accompaniment to panoramas; music, performance
 Steinway 101
 Stewart, Susan 68
 Stevens, Alfred 236
 Stevens, John 96
 Storm, Theodor 118
 Student engagement 201
 – informal learning 201, 211
 Styka, Jan 46, 173, 175, 179, 180–183, 341, 343–345
 Sublime, the 55, 66–69, 71, 75, 325
 Tableaux vivant 85
 Tanner, Anna 48
 Tavernier, Jules 242
 Taylor, Elizabeth 177
Tears of Kingdom [video game] *see* video game titles
 Technological Educational Institute of Athens, Athens, Greece 14
 Theater
 – electric scenic *see* Edison, Thomas; electrical effects
 – photorama 315
 – theaters and companies *see also* Eidophusikon
 – Bob Baker Marionette Theatre 46, 48
 – Chase's Electric Cyclorama 246
 – Royal Court Theater 275
 – Vitascope at Koster and Bial's Music Hall 247
 – scenic mechanism and construction 85, 239, 246, 247, 314; *see also* electrical effects
 – theatricality 38, 46, 48, 49, 77, 85, 87, 321, 326, 330, 351
 Thomas, I. 290
 Thurston, Lorin A. 241–243, 248
 Tiexi School for the Deaf (Shenyang) 29, 41, 42
 Time travel 64, 185, 310, 321, 328
 Tintern Abbey *see* Turner, Joseph Mallord William
 Torbert, Amy 102
 Tourism 140, 239, 241, 244, 314
 Tourist brochures and guide books 33, 192, 242, 273, 319
 Tourists 181, 241, 242; *see also* travel
 Toy theatre 85
 Transcontinental railroad 244–245
 Travel 118, 244, 245, 255, 317, 321
 – air travel 218, 219
 – riverboat travel 77–102, 317
 – travelog 80, 90; *see also* Grand Tour; *see also* time travel; *see also* virtual travel
 Traveling theory 25, 28–30, 39–43, 51
 Trine, Bill 56
 Truffaut, François 71
 Tsalkanis, Dimitris 14
 Turner, Joseph Mallord William 68
 Tuskegee Airmen 173, 185–190, 194
 Twain, Mark 89, 90, 97, 99, 100
 Typography 47, 109, 273, 278, 285–288, 290, 308, 319–320; *see also* mapping
 Unconscious 4, 105–119; *see also* optical unconscious
 Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brasil 5
 University of Iowa Museum of Natural History 79, 101, 199, 201–223, 307–310

- Union Theatre, Los Angeles, California, USA 25, 26, 37, 41, 43, 49–51, 341, 348, 349
- Universal Studios 38, 46
- University of Bordeaux, Bordeaux, France 14
- University of Iowa School of Music, Iowa City, Iowa, USA 79, 101, 317
- University of Iowa Pentacrest Museums, Iowa City, Iowa, USA 101, 199, 201, 214
- University of Reading, Reading, UK 16
- University of Southern California, Los Angeles, California, USA 25, 41
- University Park Action Coalition 46
- Unity* [software] *see* software
- Unreal* [software] *see* software
- Urbano, Monte (Monti) 280–282
- Valorization 295, 303, 334
- Vanderlyn, John 225–226, 229, 231
- Velas, Sara 26, 34, 35, 36, 40, 41, 43, 47–49, 182, 273, 347, 348
- Velaslavasay Panorama *see* panoramas, round and cycloramas
- Verne, Jules 105, 106, 112, 113, 118, 286
- Versailles, France *see* gardens; panoramas, round and cycloramas
- Video game titles
- *Breath of the Wild* (*Legend of Zelda*, Nintendo, 2017) 55–75
 - *Final Fantasy VII* (Playstation, 1997) 59, 72
 - *Final Fantasy XI* (Playstation, 2002) 72
 - *God of War* (2018) 73
 - *Maze* (1973) 59
 - *Minecraft* (2011) 59, 68, 73
 - *Spasim* (1974) 59
 - *Tears of Kingdom* (*Legend of Zelda*, Nintendo, 2023) 55–75
 - *Virtua Fighter* (1993) 59
- Vienna, Austria 234, 239, 274–281, 293, 328
- View of London 274–275, 329; *see also* panorama keys
- Virtua Fighter* [video game] *see* video game titles
- Virtual reality 5–22, 43, 55–76, 185–196, 201, 216, 248, 251–270, 308, 310, 311, 315, 323, 327, 328, 331–335, 352, 364
- Virtual travel 3, 5, 27, 30–33, 43, 77–102, 244, 333; *see also* travel
- Virtual remediation (of panoramas) 251–271, 311, 331, 332
- Vitascope 247
- Wallace, William 83, 84
- Wanderer Above the Sea of Fog* 66, 67; *see also* Friedrich, Casper David
- Waugh, Evelyn 343, 344
- Webster, Clarence A. 242
- Webster, Emma 351–353
- Wehner, William 245, 247
- Wei, Wu 44
- Weilhammer, Ulrich 163, 309
- Weilhammer & Schoeller 139, 159, 163
- Welles, Orson 55, 61, 62, 74
- West Adams Heritage Association 46
- White Fawn of the Mississippi River, The 79, 80, 90–99, 102, 103, 308, 316, 317
- Whittle, Roger 102
- Wocher, Marquard 226, 228
- Wolfe, Melissa 102
- Wood, Alton 48
- Wood, Grant 330
- World's Columbian Exposition, Chicago, Illinois 239–242, 247, 314
- World War II Foundation, The 185, 327
- Wray, Suzanne 345
- Wu, Li 28, 37, 39, 41
- Wyher, Franz Ludwig Pfyffer von 284
- Yang, Yan 28, 34, 37, 39
- Zero One Animation Group 13
- Zettel's Traum 105–119; *see also* Schmidt, Arno
- Zuolin, Zhang 26