

A COLLECTION OF ESSAYS  
FOR FACTUM FOUNDATION

*We must expect great innovations to transform the entire technique of the arts, thereby affecting artistic invention itself and perhaps even bringing about an amazing change in our very notion of art.*

Paul Valéry, 'The Conquest of Ubiquity', *Aesthetics*, 1928

Digital technologies are profoundly changing how we relate to art, from the ways in which we access and display objects to how we safeguard, restore, archive and even possess them.

*The Aura in the Age of Digital Materiality* explores themes emerging from the unprecedented potential of the meeting between digital technology and cultural heritage at a time when we are being forced to fundamentally rethink what we value, how and why. It brings together recent projects by Factum and a wonderfully diverse collection of essays, many written especially for this book, by collaborators and friends. Their widely different backgrounds and disciplines only illustrate the importance of this subject and the huge range of its relevance. Contributors include Hartwig Fischer, Director of the British Museum; Mari Lending, the author of *Plaster Monuments: Architecture and the Power of Reproduction*; Nadja Aksamiya, Professor of Italian Renaissance and Baroque art and architecture at Wesleyan University; Egyptologist Nicholas Reeves; Pulitzer Prize-winning author Richard Powers; Shirley Djukurmä Krenak, Indigenous activist from the Upper Xingu; philosophers Bruno Latour, Brian Cantwell Smith and Alva Noë; Simon Schaffer, Professor of the History and Philosophy of Science at the University of Cambridge; architect Charlotte Skene Castling; Jerry Brotton, specialist in cartography and the Renaissance; and Chiara Casarin, Director of the *Musei Civici di Bassano del Grappa*.

Our world is at a crossroads. Not only are people at risk, but our cultural heritage is under threat from lack of resources, natural disasters, climate change, terrorism, mass tourism and war. There has never been a more critical time to use technology for preservation. If these high-resolution methods had been used to record Aleppo before it was flattened, the site of Nimrud or the Bamiyan Buddhas before they were blown up, or Notre Dame before it burned, these examples of human creativity would not have been so completely lost forever. When Dresden was bombed, only photographs and memories remained. In the 21st century, we have the technological means to do so much: we urgently need to act now to record and preserve our cultural heritage for future generations. This book is a thoughtful and provocative call to action.

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THE AURA IN THE AGE  
OF DIGITAL MATERIALITY

RETHINKING PRESERVATION  
IN THE SHADOW OF AN UNCERTAIN FUTURE



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FACTUM  
FOUNDATION  
— DIGITAL TECHNOLOGY  
IN CONSERVATION



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# THE AURA IN THE AGE OF DIGITAL MATERIALITY

RETHINKING PRESERVATION  
IN THE SHADOW  
OF AN UNCERTAIN FUTURE

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*The project is part of the exhibition*

## LA RISCOPERTA DI UN CAPOLAVORO

12 March – 28 June 2020

Palazzo Fava, Palazzo delle Esposizioni, Bologna

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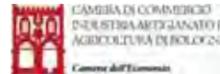


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*A collection of essays assembled by Factum Foundation to accompany the exhibition*

### The Materiality of the Aura: New Technologies for Preservation

Palazzo Fava, Bologna

12 March – 28 June 2020

'Factum Arte' can be translated from the Latin as 'made with skill'. Factum's practice lies in mediating and transforming material. Its approach has emerged from an ability to record and respond to the subtle visual information manifest in the physical world around us. Hundreds of decisions are embedded as material evidence in the process of making an object of any kind. Archaeologists are trained to read this evidence, as are forensic detectives at a crime scene. Patrick Blackett, an experimental physicist, wrote that his work was to 'cultivate an intimacy with the behaviour of the physical world' – this is an equally good description of Factum's aims.

### Credits

This book has been assembled and edited by Adam Lowe, Elizabeth Mitchell, Nicolas Béliard, Giulia Fornaciari, Tess Tomassini, Blanca Nieto and Guendalina Damone.

All projects carried out by the Factum Foundation are collaborative and there are many people to thank. This is not the place to name everyone but some people have done a great deal to make all this work possible including: Charlotte Skene Catling, Otto Lowe, Tarek Waly, Simon Schaffer, Pasquale Gagliardi, Fondazione Giorgio Cini and everyone in ARCHiVe, Bruno Latour, Hartwig Fischer, Jerry Brotton, Roberto Terra, Cat Warsi, John Tchalenko, Manuela Mena, Peter Glidewell, The Griffith Institute, Emma Duncan, Lord Rothschild, Fabia Bromofsky, Ana Botín, Paloma Botín, Lady Helen Hamlyn, Ziyavudin and Olga Magomedov, Rachid Koraïchi, Andrew Edmunds, Colin Franklin, Ed Mags, the Hereford Mappa Mundi Trust, Rosemary Firman, Philip Hewat-Jaboor, Helen Dorey, Peter Glidewell, Purdy Rubin, Fernando Caruncho, Susanne Bickel, Markus Leitner and everyone at the Swiss Embassy in Cairo, Jim Moran, Kathelin Gray, Johnny Allen, Bassam Daghestani, Mohammed Jameel, George Richards, David Coulson and the Trust for African Rock Art, Jeffrey and Veronica Berman, Ben and Donna Rosen, Clark Winter, Mauricio Torres Leclerc, Maria Golia, Anthony Sattin, Nicholas Penny, Mark Leithauser, Carole Patey, Michael Snodin, Silvia Davoli, Bill Sherman, Nico Schwartz, Julian Rothenstein, Ahmed Mater, Larry Keith, Jose Luis Colomer, Richard de Tscherner and the trustees of the Carène Foundation, William Ewing, Paula and Jim Crown, Sir Paul and Jill Ruddock, Jonathan and Jane Ruffer, Lindsay Stainton, Pippa Shirley, Juan Manuel Albendea, Casilda Ybarra, Jorge Coll, Ana Debenedetti, Gabrielle Finaldi, Stephen Clarke, The Gentle Author, Ali AlJuboori, Hansi Escobar, Ramon Blecua, Annette Warren Gibbons, Michael Jones, Rut Ballesteros, Rebecca Foote, Dinah Casson, Fabio Roversi Monaco, Richard Terra, People's Palace Projects, Shobita Punja, Sarah Thomas, Daniel Crouch, Fred Hohler, Sir Charles Saumarez Smith, Michael and Sarah Spencer, Aidan Weston Lewis, Nicholas Kugel, Pilar de la Béraudière, Dario Gamboni, Jorge Otero Pailos, Betsy Bolman, Ken Singer, Chiara Casarin, Matteo Lanfranchi, Mario Matthias Wivel, Chance Coughenour, Anna Somers Cocks, Bernardo Tortorici Montaperto, Clare Foster, Clemens Weijkamp and Raymond op het Roodt, Gabriele Finaldi, Jonathan N. Tubb, Phil Harvey, Roberto Grandi, Roger Law, Sarah Thomas, and many others who care about the preservation of the past.

And, of course, everyone at Factum Arte who works tirelessly to support the Factum Foundation and turn its vision into a reality.

This book is dedicated to Pasquale Gagliardi, who first got the ball rolling.

## CONTENTS

11 Preface, *Fabio Roversi Monaco*

15 Introduction, *Adam Lowe*

### CHAPTER 1

#### RE-THINKING THE FUNCTION OF FACSIMILES

29 Saving the best wine for last, *Richard Powers*

33 The migration of the aura, or how to explore the original through its facsimiles,  
*Bruno Latour and Adam Lowe*

43 ReACH: a collective and global re-think of our approach to copies in the age of digital  
reproduction, *Anais Aguerre*

49 3D data, public access, freedom of information laws, *Cosmo Wenman*

53 A Renaissance of the Renaissance, *Jonathan Jones*

57 Returning to distorted origins, *Mari Lending*

65 Reviving Walpole's narratives at Strawberry Hill House, *Silvia Davoli*

### CHAPTER 2

#### PRESERVING, SHARING AND RESPONSIBILITY

77 Collections entail responsibilities: notes on a global institution, *Hartwig Fischer*

93 Get back. Artifices of return and replication, *Simon Schaffer*

101 Thefts, fakes and facsimiles: preserving the Bakor monoliths of eastern Nigeria, *Ferdinand Saumarez Smith*

109 The resurrection of the Sacred Cave of Kamukuwaká, *Akari Waurá, Shirley Djukurnã Krenak,*  
*Nathaniel Mann, Irene Gaumé, Mafalda Ramos, and Patricia Rodrigues*

119 Death and entanglement. Some thoughts about life, love and the aims of art conservation, *Alva Noë*

127 Discrete objects and complex subjects: from Mosul to London and back again, *Nicolas Béliard*

131 Sharing skills and technologies: teaching photogrammetry in AlUla, *Otto Lowe*

135 Digitising the manuscript heritage of Dagestan, *Eva Rosenthal*

139 The return of an interpretation of Caravaggio's *Nativity*, *Bernardo Tortorici Montaperto*

## CHAPTER 3

### NEW INFORMATION GENERATING NEW KNOWLEDGE

- 151 Atelier Canova: a new vision of Antonio Canova, *Chiara Casarin*  
159 Restoring the corpus of Archie Creswell, *William Owen*  
169 The Raphael Cartoons at the V&A: close-range digitisation at a monumental scale, *Carlos Bayod Lucini*  
173 Malevich's *Black Square*, *Eva Rosenthal*  
177 Re-SEARCH, *Clare Foster*  
181 Rethinking our thinking about thinking: epistemology, architecture, and world, *Brian Cantwell Smith*  
193 The hand of the artist: graph analysis and El Greco, *Adam Lowe*  
197 Building a Mirror World for Venice, *Frédéric Kaplan and Isabella de Lenardo*  
203 ARCHiVe: Analysis and Recording of Cultural Heritage in Venice, *Adam Lowe*  
209 ARCHiVe case study: exploration of automatic transcription for the index cards from the Daniélou collection, *Rashmi Gajare*

## CHAPTER 4

### CARTOGRAPHY: RECORDING SHAPE, MAPPING SURFACE

- 221 The work of mapping in an age of digital mediation, *Jerry Brotton*  
227 The way we see the world, *Adam Lowe*  
231 Re-creating the lost silver map of al-Idrisi, *Elizabeth Mitchell*  
235 Recording an Ottoman-Venetian world map, *Guendalina Damone*  
247 The Gough Map. Revealing function through cartography, *Catherine Delano-Smith and Damien Bove*

## CHAPTER 5

### ACCESS AND DISPLAY

- 259 Through the looking glass. Transportive architecture, *Charlotte Skene Catling*  
269 Verum Factum Arte: *Scanning Seti* and the afterlife of a pharaonic tomb, *Bryan Markovitz*  
281 Recording and displaying Bernardino Luini, *Guendalina Damone*  
285 La Casa Natal de Velázquez: re-presenting the Spanish Golden Age, *Elizabeth Mitchell*  
289 Proliferation of opera houses, concert halls, museums & art galleries: are we building sepulchres and mausoleums for the future? *Jasper Parrott*  
295 Art in time, *Alexander Nagel*

## CASE STUDY 1

### RESURRECTING THE BOLOGNESE RENAISSANCE

- 317 Recording and re-uniting the *Polittico Griffoni*, *Adam Lowe*  
323 Beauty in relief, *Carlos Bayod Lucini*  
331 Historic cartography and digital technologies: Factum Foundation and the virtual restoration of the countryside map from the Sala Bologna at the Vatican, *Nadja Aksamija and Francesco Ceccarelli*  
339 *Publica magnificentia* and architectural palimpsest: the restoration of the façade of San Petronio, *Roberto Terra*  
345 Restoration, replication, resurrection: choosing a future for Amico Aspertini's *Deposition of Christ*, *Elizabeth Mitchell*  
349 Recording emotion: Niccolò dell'Arca's *Lamentation over the Dead Christ*, *Tess Tomassini and Guendalina Damone*

## CASE STUDY 2

### THE THEBAN NECROPOLIS PRESERVATION INITIATIVE WORK IN THE VALLEY OF THE KINGS, EGYPT

- 365 Immortality and beyond, *Nicholas Reeves*  
369 The Theban Necropolis Preservation Initiative, *texts by the Theban Necropolis Preservation team and the University of Basel*  
371 Stoppelaëre House: the restoration of the building and the establishment of the 3D Scanning, Archiving and Training Centre  
373 The recording of the tomb of Seti I  
377 The sarcophagus of Seti I: recording and re-materialisation  
381 Recording fragments in Egypt and in collections around the world  
  
389 Conclusion, *Adam Lowe*



## PREFACE

Fabio Roversi Monaco

**Fabio Alberto Roversi Monaco** held the position of High Rector of the University of Bologna from 1985–2000. He is Emeritus Professor of Administrative Law at the same university. He conceived and realised the Magna Charta Universitatum and is founder and Honorary President of the Observatory Magna Charta Universitatum. He was President of Banca IMI, where he currently holds the position of Vice President. He was President of the Academy of Fine Arts in Bologna. From 2001 to 2013 he was President of the Cassa di Risparmio di Bologna Foundation and today he holds the position of President of the Society Museum of the City of Bologna.

PAGE 2

Putting the finishing touches to the facsimile of Veronese's *Wedding at Cana*, in Palladio's refectory on the island of San Giorgio Maggiore, Venice, 2007.

OPPOSITE

Detail from the predella of the *Polittico Griffoni*, painted by Ercole de' Roberti in 1473 and now in the Pinacoteca Vaticana, Vatican City.

FOLLOWING PAGES

*Compianto sul Cristo morto* (*Lamentation over the Dead Christ*) by Niccolò dell'Arca, c. 1463, situated in the church of Santa Maria della Vita in Bologna. The *Compianto*, which consists of seven life-size terracotta statues, was recorded by Factum Foundation using photogrammetry in 2019.

Thanks to the extraordinary collaboration of nine international museums, one of the greatest masterpieces of the Italian Renaissance, the *Polittico Griffoni* by Francesco del Cossa and Ercole de' Roberti, returns to shine in the city for which it was created, 300 years after its dismemberment between 1725 and 1731.

While the original panels will return home after the 100-day exhibition, their digital replicas will remain in the city. Thanks to the rigorous work and innovative technologies of Factum Foundation, the perfect reproduction of the polyptych will be able to be admired first in San Petronio, in the original chapel, and then within the Museo della Storia di Bologna, where it will remain indefinitely.

Already in 2012, Factum had created for the Museo della Storia di Bologna the impressive facsimile of the fresco showing the bird's-eye view map of Bologna from the Sala Bologna at the Vatican Apostolic Palace. This intervention was part of a larger project involving the recording of the whole room, which was intended to inform the restoration of damaged or incomplete areas and the reconstruction of lost fragments.

If the facsimile of the map of Bologna made it possible for the public to enjoy an otherwise inaccessible artwork, Factum's work with respect to the *Polittico Griffoni* has sought to restore the original arrangement of a dismantled polyptych, making it possible to appreciate the artefact in its original form.

Over the past 20 years, Factum Foundation has dedicated itself to documenting, monitoring, studying, and recreating the world's cultural heritage: from its initial work on Egyptian tombs, to the facsimile of the *Wedding at Cana*, to the re-materialisation of Caravaggio's *Nativity* (perhaps stolen by the mafia), to mention only a few of its projects.

The creation of reproductions or the digitisation of works, which has many and diverse uses, is of enormous importance today not only for the conservation of works of art, put at risk due to the natural passing of time or reckless human actions, but also for preserving the memory of certain contexts that no longer exist. This is the case for our project on the *Polittico Griffoni*.

Adam Lowe's entire work aims, with great intelligence, at an ever-deeper understanding of the material aspects that make up works of art. 'Every work of art is a dynamic object: it ages and changes, like people. It is not something immutable – it is a process.' Thus, for Adam, 'recording' the surface of a work is first and foremost a question of knowledge.

Ultimately, with the exhibition of the *Polittico Griffoni*, Factum allows us to reflect profoundly on ways in which digital technologies, in both physical and virtual form, are changing our perspectives on the *sharing* and *protection* of the evidence of the past.





# INTRODUCTION

Adam Lowe

Adam Lowe is the Director of Factum Arte and the founder of Factum Foundation for Digital Technology in Conservation.

This publication focuses on Factum Foundation's work to promote the use of high-resolution recording, digital restoration and creative re-materialisation while bringing into focus the changing attitudes towards owning, sharing, preserving and displaying cultural artefacts. It accompanies two related exhibitions: *La Riscoperta di un Capolavoro* and *La Materialità dell'Aura* at Palazzo Fava in Bologna. *La Riscoperta di un Capolavoro* is focused on the reunification of the 16 original panels that still exist from the *Polittico Griffoni*, the altarpiece which stood in the Griffoni Chapel in the Basilica of San Petronio until it was broken up in 1725. The 16 tempera paintings by Francesco del Cossa and Ercole de' Roberti will be exhibited together with 16 facsimiles arranged in what is thought to be the original configuration of the altarpiece – allowing it to be seen as its patrons and makers intended. *La Materialità dell'Aura* examines the ways in which works of art are recorded, remade and presented.

The aim of the collection of thoughts and images in this book is to encourage reflection on the ways that digital technologies, in virtual and physical form, are changing our approach to the *preservation* and *conservation* of the material evidence of the past. High-resolution digital recording and long-term secure archiving are the parentheses that are shaping this debate. If an object is recorded correctly it can be analysed, studied, shared and rematerialized for a variety of purposes. This approach to recording requires an understanding of different processes and is generating a host of new skills that are led by the technologies: composite photography, land-based and aerial photogrammetry, close-range 3D scanning, long-range scanning in colour and 3D, Reflectance Transformation Imaging (RTI) and photometric stereo, multi-spectral imaging and microscopy. The recording is the foundation of everything that follows. The data can then be used in different ways. In its digital form it can be made accessible worldwide where it can be used as both an educational and creative resource. It can be optimized and used for virtual, augmented, and mixed realities. It can be scientifically analysed for forensic purposes. It can become the source material for digital restorations that never touch the original artwork. It can be rematerialised using various 3D output technologies. It can be analysed with AI self-learning neural networks. It can inform exhibition display and it is leading to a digital connoisseurship based on a mix of fact and opinion, knowledge and evidence.

Twenty years ago, when Factum was being formed, there was a real excitement about what was possible. The 3D data recorded in 2001 in the tomb of Seti I set new standards that have still not been significantly improved in terms of 3D resolution and a correspondence between the original and the re-materialised surface. In 2007, when discussing the facsimile of Veronese's *Wedding at Cana* on his television show *Passepartout*, Philippe Daverio threw a copy of Walter Benjamin's famous essay *The Work of Art in the*

## OPPOSITE

Render of the interior of the sarcophagus of Seti I, showing the figure of Nut, goddess of the sky, lying beneath the mummified body of the pharaoh. The sarcophagus is covered with text from the Book of Gates, which guides the deceased on their journey through the afterlife. The sarcophagus has been in Sir John Soane's Museum in London since 1824, when Sir John Soane purchased it from Belzoni.



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Pedro Miró using structured light scanning to record the statue of Idrimi in the British Museum, 2017.

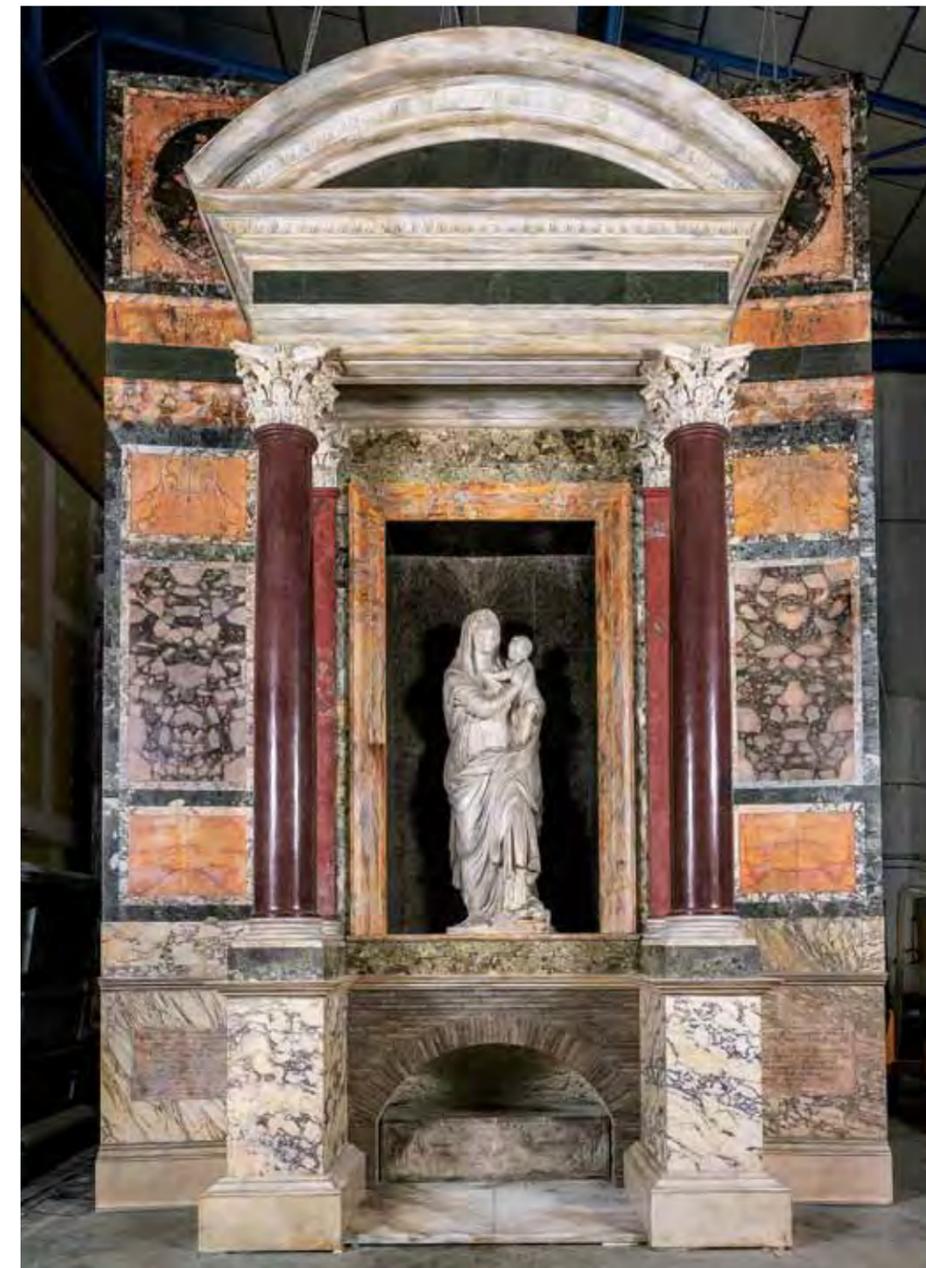
OPPOSITE

Completed facsimile of the Tomb of Raphael from the Pantheon, 2020.

*Age of Mechanical Reproduction* over his shoulder stating that in a digital age we need to rethink the relationship between originality and authenticity. At a time when technology is moving very fast, this re-thinking is taking its time. While the arguments have moved on from Walter Benjamin's position that was important in the mid-1930s, a clear map of the new territory created by digital technology has yet to emerge. There is a vast accumulation of thoughts around the theme, but the 'aura' has remained more or less intact as the thing that separates an original from its copy. Jean Clair, the ex-Director of the Musée Picasso and the Venice Biennale, in his book *L'hiver de la culture* has argued that it is better to display replicas than to fill museums with deteriorating relics. The V&A's exhibition and publication *A World of Fragile Parts* (2016) took a general look at the value of copies while the ReACH initiative, organized by the V&A and the Peri Foundation, resulted in the publication *Copy Culture*, outlining important issues relating to data ownership, high-resolution recording and data sharing. The position of UNESCO, ICOMOS and other professional bodies is significantly out of date.

Walter Benjamin struggled to define exactly what he meant by 'the aura'. His choice of metaphor, suggesting both halo and radiation, is actually the opposite of the physical evidence that makes an object specifically what it is. Objects are the repositories of compounded ideas, thoughts, materials, evidence, transactions and the actions of time. They are the counterpoint of the ephemeral communications of today – they require time and reflection but they deliver complex insights – they reflect and redirect every thought we impose upon them.

Lithographically printed images of works of art will always lack many of the qualities of the original. New imaging technologies and 3D recording systems allow us to close the gap between an object and its reproduction. No copy will ever re-materialise everything that is in the original, but the closer the replication comes, the more can be



revealed. In part this will allow us to understand the decisions and materials that make the original, the way it has aged and decayed and the things that have happened to it over its lifetime. All things are in a constant dynamic process of change. Replicas not only help us understand and empathise, they can also encourage us to become aware of our temporal and perspectival limitations.

Digitality and auras have much in common; they are far from being discrete, stable and clearly defined. Digitality was once associated with the virtual but is becoming increasingly physical. Digital data is dependent on electricity and human input. For Benjamin the aura is intrinsic to, and emanating from, the object; in reality the aura is

projected onto the object by the viewer and is the product of our own perception of value, our beliefs and prejudices. When these change, the aura can relocate.

Digital technology can be used to accurately record different aspects of an object. The aura inhabits these spaces. The digital used to be virtual, now it has the potential to be both virtual and physical, greatly magnified facilitating closeness, penetrated with multi-spectral light sources revealing under-painting and allowing pigments to be analysed and re-materialised. Technology is evident in both the mechanics of the hardware and the elegance of the algorithms that shape the software. Both, in the hands of skilled digital artisans, are leading to new insights and understanding. When concepts are divorced from physical evidence they tend to disperse. Thoughts and ideas need to find their form: the written word, song, dance, music, performance, architecture, sculpture, painting and both tangible and intangible representation. They are always rooted in their time but accessible to those who look, listen and question. Walter Benjamin starts his essay with a quote from Paul Valéry's 'The Conquest of Ubiquity':

For the last twenty years neither matter nor space nor time has been what it was from time immemorial. We must expect great innovations to transform the entire technique of the arts, thereby affecting artistic invention itself and perhaps even bringing about an amazing change in our very notion of art (*Aesthetics*, 1928).

Digital technology is bringing about that 'amazing change', but Valéry's prediction seems almost prophetic if you read what follows that quote in the original text:

At first, no doubt, only the reproduction and transmission of works of art will be affected. It will be possible to send anywhere or to re-create anywhere a system of sensations, or more precisely a system of stimuli, provoked by some object or event in any given place. Works of art will acquire a kind of ubiquity. We shall only have to summon them and there they will be, either in their living actuality or restored from the past. They will not merely exist in themselves but will exist wherever someone with a certain apparatus happens to be. A work of art will cease to be anything more than a kind of source or point of origin whose benefit will be available and quite fully so, wherever we wish.

While Valéry was imagining the internet, Benjamin mused on the progression from woodblock to lithography and then onto photography, silent film and talking cinema. He considers what is lost between the performance of an actor on stage and the stars of the screen. In an essay on mechanical reproduction the concept of performance could apply to copies of paintings and sculptures as much as music and theatre. In this context Alois Auer's remarkable work at the Imperial Printing Works in Vienna in the 1840s (when electricity was making the photo-mechanical revolution possible) is significant. In Auer's environment of curiosity and experimentation, driven by the commercial potential of mass media, image and form were merging and the physical nature of things was being examined and celebrated. The discrete patterns of coloured dots that formed the printed image sat alongside continuous gradations of tone that contained the seeds of the digital revolution that has brought with it a host of materialisation methods that can be loosely called 3D printing.

#### FOLLOWING PAGES

Back to front: a test for the facsimile of the *Martyrdom of St Matthew* by Caravaggio; topographic and bathymetric data from the surface of the globe without water; and two works from Ahmed Mater's series *Mitochondria: Powerhouses* (first shown at Galleria Continua, San Gimignano, 2017).

Background: a test for the facsimile of Tutankhamun's tomb; a re-creation of Raphael's *Christ Falling on the Way to Calvary* (now in the Museo del Prado) painted for the church of Lo Spasimo, Palermo; and an altar made by Factum Arte from a print by Piranesi published in *Vasi, candelabri, cippi, sarcofagi, tripodi, lucerne, ed ornamenti antichi disegnati ed incisi dal Cav. Gio. Batt. Piranesi*, Rome, 1778. Foreground: the re-creation of the lost silver map by al-Idrisi, made for Roger II of Sicily but lost in a shipwreck in the 12th century.

Background, left to right: a CNC-carved relief panel from the north-west palace of Ashurnasirpal II, Nimrud; a facsimile of a pillar face from the tomb of Seti I in the Pergamon Museum, Berlin; and facsimiles of two facing door-frames from the tomb of Seti I, now in the Museum of Archaeology, Florence, and the Musée du Louvre, Paris. Middle distance: a facsimile of Seti I's sarcophagus from Sir John Soane's Museum in London. Foreground: tests for a print of a destroyed temple in Tibet by Thomas Laird; colour test for a new recording of the tomb of Tutankhamun made in 2019 (in order to carry out a direct comparison with the colour recording of 2009).

New technologies are seldom new. Photo-sculpture emerged in Paris in 1851 and electroforming played an important role in the formation of the Victoria and Albert museum after the Great Exhibition of 1851. 3D recording and 3D output methods do not feature in Benjamin's idea of mechanical reproduction where a photograph is an image that subjectively records the material world and in turn is imperfectly reproduced by different printing systems available at low cost and in high volume. He focused on the impact that this was having on shaping public opinion. The media was pushing the aesthetics of Fascism and the propaganda of Communism. Benjamin's essay was written in German in 1935 and published in French in 1936 when many could see the world was only heading one way. The manipulation of printed media was playing an important role and seeding conflict. Benjamin's understanding of technology predicts the fake news, data harvesting and ephemeral twitter feeds devoid of truth that fuel today's political debate. Benjamin, the cultural critic, understands the ways in which technology was being harnessed for political control. Valéry, the poet, is thinking about a system of stimuli and works of art available wherever we wish. In today's digital world, augmented- virtual- and mixed-realities exist alongside new recording and output technologies capable of highly faithful physical 're-productions'. In turn this is changing the way we think about preservation, display, dissemination, archiving and ownership.

This collection of essays and short texts does not attempt to be definitive, but it touches on many of the concerns facing preservation today. Most of the authors or projects have a direct connection to Factum, others less so. In each case, the words and images help to map out the rapidly changing territory. Charles-Germain de Saint Aubin titled his caricature of a satyr inspecting Boucher's portrait of Madame de Pompadour at the Salon of 1757 'La verité Surmonte l'Autorité'. Hopefully technology is helping us to look past our own prejudices and re-think why culture is essential for communication. Today would the same satyr inspecting the facsimile of Boucher's painting in the exhibition *Madame de Pompadour in the Frame* at Waddesdon Manor, feel that the aura has become unfaithful, inhabiting both the original object and the authentic copy.



Hieroglyphs and symbols on a fragment of ancient Egyptian papyrus.







# RE-THINKING THE FUNCTION OF FACSIMILES

# SAVING THE BEST WINE FOR LAST

Richard Powers

This is the transcript of a presentation given by Richard Powers at an interdisciplinary discussion entitled 'Coping with the Past' that took place at the Giorgio Cini Foundation on the island of San Giorgio Maggiore, Venice in 2009.

**Richard Powers** is a novelist whose works explore themes from science, technology and nature. He was awarded a MacArthur Fellowship in 1989, the National Book Award in 2006 for his novel *The Echo Maker*, and a Pulitzer Prize in 2019 for *The Overstory*.

**M**y goal in this session is for us to use the language of storytelling – character, setting, scene, focalization, plot, reversal, exposition, development, denouement, all the conventions of narrative expectation – to reveal the hidden stories that underwrite our different disciplines.

So let me start by looking for the similarity at the core of four related stories. In the oldest of the four, a young man attends an enormous party that is about to turn into a disaster of the first order. The host has misjudged his guests' needs and run out of libation. The whole social fabric of the gathering is about to unknit. Reluctantly, the young man undertakes an act of creative makeover, converting ordinary water into something that not only perfectly resembles wine but passes for wine of the finest quality. The guests marvel at the miraculous conversion, the gathering is refreshed, and earthly possibility is rewritten. And I am left with two slightly frivolous questions: first, why does this story become immortal? And second, why did the young man need to start with water in the first place? Why didn't he just make wine spring up from empty vessels?

In the second oldest story, a young man at the height of his power is commissioned by a prominent institution in a city nearing its zenith to recreate that first story. After a millennium and a half of countless representations, that narrative has become so familiar it is all but invisible. In an astonishing 15 months, the man transforms a mainsail's worth of canvas into a scene both ancient and current. He places the biblical story in a strange Greco-Roman-Renaissance assemblage and populates it with 130 contemporaries, including himself and two other masters of visual simulation. A fossilized story becomes, through *re-presentation*, something weirdly, unnervingly *re-presented* – old wine in new bottles. Viewers marvel at the miraculous translation, legacy is reaffirmed, and the past is re-inhabited.

In the third oldest story, an obscure 20th-century French poet, essayist, and translator from Nîmes sets out to recreate Don Quixote. He doesn't mean to copy or transcribe the canonical masterpiece, or even to write his own contemporary version of the story, which would be too cheap and easy. He does not want to create one of 'those parasitic books which situate Christ on a boulevard, Hamlet on La Canebière or Don Quixote on Wall Street'. Instead, 'His admirable intention [is] to produce' from out of the context of his own historical moment and his own personal experience 'a few pages which [will] coincide – word for word and line for line – with those of Miguel de Cervantes'. Over the course of three centuries, the comic epic has become lost inside its own aura. Once, the poet says, the Quixote was a profoundly transforming entertainment; 'now it is the occasion for patriotic toasts, grammatical insolence and obscene de luxe editions. Fame is a form of incomprehension, perhaps the worst'.

Over countless sleepless nights, tearing up and revising thousands of tortured manuscript pages in an archaic language that he hasn't even mastered, the young man arrives

#### PREVIOUS PAGE

Crowds in front of the *Mona Lisa* in the Musée du Louvre, Paris, with Veronese's *Wedding at Cana* in the background.

#### OPPOSITE

Factum Arte's facsimile of the *Wedding at Cana* in Palladio's refectory on the island of San Giorgio Maggiore, Venice, the space for which the original was conceived and painted.



– through the force of his own experience and creative impulse – at a handful of passages judged by an outside reader to be an astounding revelation. For the exact same words are now wiser, more surprising, and more achingly profound because of the three centuries of historical contingency that have added to the pain and comedy of the tale. To tilt at those windmills in the early 17th century is inspired satire. To do so in the age of trench warfare and aerial bombardment is the most divine madness. Pierre Menard, as his literary executor Borges says, ‘has enriched, by means of a new technique, the halting and rudimentary art of reading: this new technique is that of the deliberate anachronism and the erroneous attribution’. Scholars of the restored passages marvel at the miraculous reconstruction, the canon is revived, and the society of reading is re-inscribed.

In the youngest of the four stories, a vast network of artists, historians, scholars, scientists, engineers, programmers, designers, technicians, and countless others, few of them known to one another, aggregate for the startling task, not of transcribing a 67 sqm painting almost half a millennium old, but of recreating it, re-originating it, through many thousands of agonizing decisions, at dizzy degrees of fidelity. But fidelity not to some static original, but to a ‘trajectory of transformations’ set loose in the constantly changing run of social time. To fill a refectory wall at the height of the Renaissance with an ancient story of renewal is an act of mastery, faith, cohesion, exuberance, and conviction. To restore that same wall with that same painting of that same ancient episode – after Darwin, after Hiroshima, after the launch of interplanetary probes, after decolonisation, after the onset of global warming and mass extinction, after nanocomputing, after the discovery of the molecular basis of life – and to do so with technologies that have broken free of any individual’s ability to understand, now becomes an act of near-perverse regeneration. Those who had lost the ability to see anything at all in the aura-laden original will look again. New gatherings will be refreshed. Future pasts will be reformed. The reproduction reawakens the original.

The thing that makes these four stories similar is one peculiar power of narrative. Narrative is, of course, the thing that keeps time from collapsing into just one damn thing after the other. It’s the grouping of a series of events and interactions into a significant arc. Narrative accomplishes this conversion primarily by bringing about, in the willing mind, a strange reversal of the dominant direction of time.

The act of reading consists, in Peter Brook’s memorable phrase, of ‘the anticipation of retrospection’. In the quotidian experience of unreflective time, the past is fixed and gradually forecloses on the open future. In the reflexive experience of narrative time, the pre-existing future constantly changes the mutable past. You read page 10, already knowing it will mean something very different by page 300. And sure enough, by page 300, page 10 has changed utterly, although it remains word for word the same. Page 10 posts itself forward, waiting for page 300 to intercept and reinterpret it.

Every new event in a story alters the events that generated it. Veronese re-enchants what happened at Cana. Borges re-canonizes Cervantes. Lowe re-cognizes Veronese. In an age obsessed with innovation and individuality, it pays to remember Eliot’s words in the essay ‘Tradition and the Individual Talent’: ‘the most individual parts of [the poet’s] work may be those in which the dead poets, his ancestors, assert their immortality most vigorously’. [Or better yet, his famous words from *Four Quartets*: ‘We shall not cease from exploration, and the end of all our exploring will be to arrive where we started and know the place for the first time’.]

*Yeki bood, yeki nabood*. This is the traditional Persian fairy tale opener: it was like this, but it wasn’t like this. The English gambit is *Once upon a time. C’era una volta*.

*Il était une fois*. This is the seditious contract between the writer and reader of fiction: the following isn’t real, but treat it as if it were. And the contract is offered up in a time that was in time once, but isn’t anymore, except in the time recreated by narrative time. So the question immediately arises: why should something with no material basis in fact and lying outside actual time have any emotional power to move or rearrange us? The answer, I think, is that our brains have been shaped by natural selection to take the map for the place and use it as a shortcut into the *nunc stans*, the standing now.

Fiction sacrifices an ontological hostage in order to ransom an epistemological one. And it does so once, upon time itself. By inverting time, stories restore us *to* time. Stories aren’t just *like* some world, they *are* the traces of mind, negotiating the world. Representations are real things: ask the writers of the code that controls the scanner that recorded Veronese and helped Adam (Lowe) bring a factual past back into the dynamic present. But representations are not slaves to a conventional realism; they *fashion* the conventions we use to sense ourselves in time. By releasing the present to once again resemble and re-assemble the past, representations can free the past to rejoin its vital new futures.

Good reading is the act of empathically becoming any number of desperate characters colliding with each other. But the collisions that fiction portrays must be as robust as the collisions of this world, in which every character fashions herself as a moral center. The impoverishing novel – or call it the fundamentalist novel – is dominated by a single, monolithic conviction. The story means less than it says. In enriching novels, the map gives way to a wider place. Good writing and good reading reproduce not fixed, autonomous positions, but interdependent assemblages of hopes, fears, dreams, legacies and testaments, woven into a shared text-tile by countless shareholders, a textile being constantly rehabilitated.

Over the last two days, I’ve been hearing this group move toward a provisional starting point for how we might begin to tell impoverishing stories from enriching ones: impoverishing narratives collapse reciprocal, dynamic processes into amnesiac packaged products. Enriching narratives release products into long-time processes. Bad stories are full of monolithic, privileged certainties that stop time and collapse focal perspective to a controlling view. Good stories move the reader freely across all three tenses, through a country full of voices. Bad stories get us to side with the hero. Good stories get us to keep changing sides, and even to change the sides themselves.

Here are some hidden narratives we’ve touched on that can impoverish our existence in time: the myth of cultural progress or, on the other hand, the myth of the golden age, the myth of the unique destiny or the myth of the invariant inheritance, the myth of the privileged present, the myth of the intact origin, the myth of the solitary maker, the myth of autonomous innovation.

What of the narratives that restore and renovate time? We have a little over one hour to find them. Stranger things have happened, *c’era una volta*.

In the Greek New Testament, the common word for miracle is *semeion*: ‘sign’. And from this word – by what Bruno Latour calls devious etymology, using that wonderfully fictional reconstruction, Proto-Indo-European – I can get to the word facsimile. At impoverished parties, the good stuff comes out first and it’s downhill from there. Enriching gatherings – those that spill backwards into the future past – make from the merely similar something miraculous, forever saving the best wine for last.



# THE MIGRATION OF THE AURA, OR HOW TO EXPLORE THE ORIGINAL THROUGH ITS FACSIMILES

Bruno Latour and Adam Lowe

A chapter prepared by Bruno Latour and Adam Lowe for *Switching Codes: Thinking Through Digital Technology in the Humanities and in the Arts*, eds. Thomas Bartscherer and Roderick Coover (Chicago: University of Chicago Press, 2011)

**Adam Lowe** is the Director of Factum Arte and the founder of Factum Foundation for Digital Technology in Conservation.

**Bruno Latour** is a philosopher and anthropologist, and one of the founders of the field of Science and Technology Studies. He is Emeritus Professor at Sciences Po, Paris. His many books include *We Have Never Been Modern*, *Facing Gaia*, and most recently *Down to Earth*. He has curated a series of exhibitions at Zentrum für Kunst und Medien (ZKM) including *Iconoclasm*, *Making Things Public* and *Reset Modernity!* and is curator of the forthcoming exhibition *Critical Zones*, also at ZKM, and of the Taipei Biennale 2020.

## OPPOSITE

The statue of Idrimi (c. 1600–1500 BCE) was excavated in the 1930s in what is now the Hatay region of Turkey. The inscription states that Idrimi, originally from Aleppo, travelled across the Middle East to Emar and Canaan before becoming ruler of Alalakh (in Hatay). A facsimile was made for the charity Making Light. It will be part of an exhibition about migration and refugees from the conflict in Syria.

Something odd has happened to Holbein's *The Ambassadors* at the National Gallery in London. The visitor does not immediately know how to describe her malaise. The painting is completely flat; its colours bright but somewhat garish; the shape of every object is still there but slightly exaggerated; she wonders what has happened to this favourite painting of hers. 'That's it', she mutters, 'The painting has lost its depth; the fluid dynamics of the paint have gone. It is just a surface now'. But, what does this surface look like? The visitor looks around, puzzled, and, then, the answer dawns on her: it resembles almost exactly the poster she bought several years ago at the Gallery bookshop, and that still hangs in her study at home. Only the dimension differs.

Could it be true, she wonders. Could they have replaced the *Ambassadors* by a facsimile? Maybe it's on loan to some other museums, and, so as to not disappoint the visitors, they put up with this copy. Or maybe they did not want to trick us, and it is a projection. It is so flat and bright that it could almost be a slide projected on a screen... Fortunately, she composes herself enough to not ask the stern guard in the room whether this most famous painting is the original or not. What a shock it would have been. Unfortunately, she knows enough about the strange customs of restorers and curators to bow to the fact that this is, indeed, the original although only in name, that the real original has been irreversibly lost and that it has been substituted by what most people like in a copy: bright colours, shining surface, and above all a perfect *resemblance* with the slides sold at the bookshop that are shown in art classes all over the world by art teachers most often interested only in the shape and theme of a painting but not by any other marks registered in the thick surface of a work. She leaves the room suppressing a tear: the original has been turned into a *copy of itself looking like a cheap copy*, and no one seems to complain, or even to notice, the substitution. They seem happy to have visited in London the original poster of Holbein's *Ambassadors*!

Something even stranger happens to her, some time later, in the Salle de la Joconde in the Louvre. To finally get at this cult icon of *The Da Vinci Code*, hundreds of thousands of visitors have to enter through two doors that are separated by a huge framed painting, Veronese's *Nozze di Cana* (*Wedding at Cana*), a rather dark giant of a piece that directly faces the tiny *Mona Lisa*, barely visible through her thick anti-fanatic glass. Now the visitor is really stunned. In the Hollywood machinery of the miraculous wedding, she no longer recognizes the facsimile that she had the good fortune of seeing at the end of 2007 when she was invited by the Cini Foundation to the island of San Giorgio, in Venice. There it was, she remembers vividly, a painting on canvas, so thick and deep that you could still see the brush marks of Veronese and feel the sharp cuts that Napoleon's orderlies had to make in order to tear the painting from the wall, strip by strip, before rolling it like a carpet and sending it as war booty to Paris in 1797 – a cultural rape very much in the

mind of all Venetians, up to this day. But there, in Palladio's refectory, the painting (yes, it was a painting even though it was produced through the intermediary of digital techniques) had an altogether different meaning: it was mounted at a different height, one that makes sense in a dining room; it was delicately lit by the natural light of huge east and west windows so that at about 5pm on a summer afternoon the light in the room exactly coincides with the light in the painting; it had, of course, no frame; and, more importantly, Palladio's architecture merged with admirable continuity with Veronese's painted architecture, giving this refectory of the Benedictine monks such a *trompe l'oeil* depth of vision that you could not stop yourself from walking slowly back and forth and up and down the room to enter deeper and deeper into the mystery of the miracle.

But here, in the *Mona Lisa* room, even though every part of the painting looked just the same (as far as she could remember), the meaning of the painting she had seen in Venice seemed entirely lost. Why does it have such a huge gilt frame? Why are there doors on both sides? Why is it hanging so low, making a mockery of the Venetian balcony on which the guests were crowding? The bride and groom, squashed into the left hand corner, seemed peripheral here, while in Venice, they were of great importance, articulating a scene of sexual intrigue that felt like a still from a film. In Paris, the composition made less sense. Why this ugly zenithal light? Why this air-conditioned room with its dung brown polished plaster walls? In Venice, there was no air-conditioning; the painting was allowed to breathe by itself as if Veronese had just left it to dry. And, anyway, the visitors could not move around the painting to ponder those questions without bumping into others momentarily glued (queued) to the *Joconde* turning their backs to the Veronese.

A terrible cognitive dissonance. And yet there was no doubt that this one, in Paris, was the original; no substitution had occurred, no cheating of any sort – with all its restoration, Veronese would certainly be surprised to see the painting looking as it does, but that's different from cheating. She remembered perfectly well that in Venice it was clearly written: 'A facsimile'. And in San Giorgio there was even a small exhibition to explain in some detail the complex digital processes that Factum Arte, the workshop in Madrid, had used to de- then re-materialize the gigantic Parisian painting, carefully laser scanning it, A4 by A4, photographing it in similarly sized sections, white light scanning it to record the relief surface, and then somehow managing to stitch together the digital files before instructing a purpose-built printer to deposit pigments onto a canvas carefully coated with a gesso almost identical to that used by Veronese. Is it possible that the Venice version, although it clearly states that it is a facsimile, is actually *more original* than the Paris original, she wonders? She now remembers that on the phone with a French art historian friend, she had been castigated for spending so much time in San Giorgio with the copy of the *Nozze*: 'Why waste your time with a fake Veronese, when there are so many true ones in Venice?!' her friend had said, to which she had replied, without realizing what she was saying: 'But come here *to see it for yourself*, no description can replace seeing this original... oops, I mean, is this not the very definition of "aura"?...' Without question, for her, the aura of the original had *migrated* from the Louvre to San Giorgio: the best proof was that you had to come to the original and see it. What a dramatic contrast, she thought, between the Veronese and the *The Ambassadors*, which claims to be the original in order to hide the fact that it is an expensive copy of one of its cheap copies!

'But it's not the original, it's just a facsimile!' How often have we heard such a retort when confronted with an otherwise perfect reproduction of a painting? No question about it, the obsession of the age is for the original version. Only the original

LiDAR scan of the interior of the Cathedral of the Nativity of the Virgin at Ferapontov, Russia, painted by Dionisy and his assistants in 1502. The frescoes were recorded by the Peri Foundation and Factum Foundation in 2017.



possesses an aura, this mysterious and mystical quality that no second-hand version will ever get. But paradoxically, this obsession for pinpointing originality increases proportionally with the availability and accessibility of more and more copies of better and better quality. If so much energy is devoted to the search for the original – for archaeological and marketing reasons – it is because the possibility of making copies has never been so open-ended. If no copies of the *Mona Lisa* existed, would we pursue it with such energy – and, would we devise so many conspiracy theories to decide whether or not the version held under glass and protected by sophisticated alarms is the original surface painted by Leonardo's hand or not?

So, in spite of the knee-jerk reaction – 'But this is just a facsimile' – we should refuse to decide too quickly when considering the value of either the original or its reproduction. Thus, the real phenomenon to be accounted for is not the punctual delineation of one version divorced from the rest of its copies, but the whole assemblage made up of one – or several – original(s) *together with* the retinue of its continually rewritten biography. It is not a case of 'either or' but of 'and, and'. Is it not because the Nile ends up in such a huge delta that the century-old search for its sources had been so thrilling? To pursue the metaphor, we want, in this paper, to behave like hydrographers intent in deploying the whole catchment area of a river, not only focusing on an original spring. A given work of art should be compared not to any isolated locus but to a river's catchment, complete with its estuaries, its many tributaries, its dramatic rapids, its many meandering turns and, of course, also, its several hidden sources.

To give a name to this catchment area, we will use the word *trajectory*. A work of art – no matter of which material it is made – has a trajectory or, to use another expression popularized by anthropologists, a career.<sup>1</sup> What we want to do in this paper is to specify the trajectory or career of a work of art and to move from one question that we find moot ('Is it an original or merely a copy?') to another one that we take to be decisive, especially at the time of digital reproduction: 'Is it *well* or *badly* reproduced?'. The reason why we find this second question so important is because the quality, conservation, continuation, sustenance and appropriation of the original depends entirely on the distinction between good and bad reproduction. We want to argue that a badly reproduced original risks disappearing while a well accounted for original may continue to enhance its originality and to trigger new copies. This is why we want to show that facsimiles, especially those relying on complex (digital) techniques, are the most fruitful way to explore the original and even to help re-define what originality actually is.

To shift the attention of the reader away from the detection of the original to that of the quality of its reproduction, let us remember that the word 'copy' does not need to be so derogatory, since it comes from the same etymology as 'copious', and thus designates a source of *abundance*. To the question: 'Is this isolated piece an original or a facsimile?', it might be more interesting to ask: 'Is this segment in the trajectory of the work of art barren or fertile?'

To say that a work of art grows in originality thanks to the quality and abundance of its copies, is nothing odd: this is true of the trajectory of any set of interpretations. Abraham has become the father of a people 'as numerous as the grains of sand' only because he had a lineage. Before the birth of Isaac, Abraham was a despised, barren old man. That he became 'the Father of three religions' is a result of what happened to Isaac, and, subsequently, what happened to every one of his later sons and daughters. Such is the 'awesome responsibility' of the reader, as Charles Péguy so eloquently said, because this process is entirely reversible; 'if we stop interpreting, if we stop rehearsing, if we stop reproducing, the very existence of the original is at stake. It might stop having abundant copies and slowly disappear'.<sup>2</sup>

We have no difficulty raising questions about the quality of the entire trajectory when dealing with the *performing* arts, such as dance, music and theatre. Why is it so difficult when faced with the reproduction of a painting, a piece of furniture, a building or a sculpture? This is the first question we want to clarify.

No one will complain on hearing *King Lear*: 'But this is not the original, it is just a representation!'. Quite right. That's the whole idea of what it is to *play King Lear*: it is to *replay* it. In the case of a performance, everyone is ready to take into account the whole trajectory going from the first presentations through the long successions of its 'revivals' all the way to the present. The Platonic ideal of *King Lear* is something which no one has ever seen and no one will ever be able to circumscribe. In addition, it requires no great sophistication to be fully prepared for disappointment at not finding 'the' first, original presentation by Shakespeare 'himself', but several premieres and several dozen different versions of the written play with endless glosses and variations. We seem perfectly happy

1 Arjun Appadurai, *The Social Life of Things: Commodities in Cultural Perspective* (Cambridge: Cambridge University Press, 1986); Miguel Tamen, *Friends of Interpretable Objects* (Cambridge, MA: Harvard University Press, 2001).

2 See the commentaries of Péguy in Gilles Deleuze, *Difference and Repetition*, trans. Paul Patton (New York: Continuum International Publishing, 2005).

to be excited by the anticlimactic discovery of the source of a major river in a humble spring barely visible under the mossy grass. Third, and even more importantly, spectators have no qualm whatsoever at judging the new version under their eyes by applying the shibboleth: 'Is it well or badly (re)played?'. They can differ wildly in their opinions, some being scandalized by what they take as some revolting novelties ('Why does Lear disappear in a submarine?') or bored by the repetition of too many clichés, but they have no difficulty in considering that this moment in the whole career of all the successive *King Lear*s – in the plural – should be judged *on its merit* and not by its mimetic comparison with the first (entirely inaccessible anyway) presentation of *King Lear* by the Shakespeare company in such and such a year.

So free are we from the comparison with any 'original', that it is perfectly acceptable to evaluate a replay by saying: 'I would never have anticipated this; it is totally *different* from the way it has been played before; it is utterly *distinct* from the way Shakespeare played it, *and yet* I now understand what the play has always been about!'. It is accepted that some revivals – the good ones – have the capacity to dig out of the original novel traits that might have been potentially in the source, but that have remained invisible until now. So, even though it is not evaluated by its mimetic resemblance to an ideal exemplar, yet it is clear, and everyone might agree, that, because of the action of one of its late successors, the genius of Shakespeare has gained a new level of originality because of the amazing feat of this *faithful* (but not mimetic) reproduction. The origin is there anew, even though it is so different from what it was. And the same phenomenon would occur for any piece of music or dance. The exclamation: 'It's so original' attributed to a new performance does not describe one section along the trajectory (and especially not the first *Ur-* version) but the *degree of fecundity of the whole cornucopia*. In performance art, the aura keeps migrating and might very well come back suddenly... or disappear altogether. When so many bad repetitions have so decreased the level of fecundity of the work that the original itself might be abandoned, it will stop being the starting point of any succession. Such a work of art dies out like a family line without any lineage.

Why is it so difficult to say the same thing and use the same type of judgment for a painting or a sculpture or a building? Why not say, for instance, that the facsimile of Veronese's *Nozze di Cana* has been *replayed*, rehearsed, revived thanks to a new *interpretation* in Venice in 2007 by Factum Arte? What seems so easy for performance art remains far-fetched for the visual arts. If we claim that the *Nozze di Cana* has been 'given again' in San Giorgio, someone will immediately say: 'But the original is in Paris! The one now in San Giorgio is *just* a facsimile!'. A sense of fakery, counterfeiting, or betrayal has been introduced into the discussion in a way that would seem absurd for a piece of performance art (even though it is perfectly possible to say of a very bad company that it made 'a sham' at playing Shakespeare). It seems almost impossible to say that the facsimile of Veronese's *Nozze di Cana* is not about falsification but it is a stage in the verification of Veronese's achievement, a part of its ongoing biography.

One reason for this unequal treatment obviously has to do with what could be called the *differential of resistance* among all segments of the trajectory. In his much too famous essay, through a deep fog of art historical mysticism, it is this gap in technology that Walter Benjamin pointed out under the name of 'mechanical reproduction'.<sup>3</sup> In the

3 Walter Benjamin, 'The Work of Art in the Age of Mechanical Reproduction', in *Illuminations* (New York: Schocken Books, 1968), 217–51.

case of performance art, each version is just as difficult to produce, and just as costly, as the former one (actually more and more expensive as time goes on and certainly more than in Shakespeare's time – just think of the wages for the security guards and all the health and safety standards!). Just because there have been zillions of representations of *King Lear* it does not mean that the one you are now going to give will be easier to fund. This is the technical reason why, in the case of performance art, we don't distinguish between an original and a copy, but rather between successive versions of the same play, each designated by the label 'version n', 'version n+1', 'version n+2', etc.

The situation appears to be entirely different when considering, for instance, a painting. Because it remains in the same frame, encoded in the same pigments, entrusted to the same institution, one cannot help having the impression that every reproduction will be so much *easier* to do and that there will be no possible comparison of quality between the various segments of the trajectory. This is why the aura seems definitely attached to one version only: the autograph one. And certainly this is superficially true: if you take a picture of the *Nozze di Cana* in Paris with your digital camera, no one in his right mind can render commensurable the pale rendering on the screen of your computer and the 67 sqm of canvas in the Louvre... If you claimed that your picture was 'just as good as the original', people would raise their shoulders in pity, and rightly so.

And yet, the distance between 'version n' called 'the original' and 'version n+1' called 'a mere copy' depends just as much on the differential of efforts, of costs, of techniques as on any substantial distinction between the successive versions of the same painting. While in performance art these are grossly homogeneous (each replay relying on the same gamut of techniques), the career of a painting or a sculpture relies on segments which are vastly heterogeneous and which vary greatly in the intensity of the efforts deployed along its path. It is this asymmetry, we wish to argue, that too often precludes one from saying that the *Nozze di Cana* in Paris has been 'reprinted' or 'given again' in Venice. And it is certainly this presupposition that so angered the French art historian who castigated her friend for wasting her time in San Giorgio instead of visiting the 'genuine Veroneses'. Hidden behind the commonsense distinction between original and mere copies lies a totally different process that has to do with the technical equipment, the amount of care, and the intensity of the search for the originality that goes from one version to the next.

It is also important to note that the difference between performance arts and the others is not as radical as it seems: a painting *has always to be reproduced*, that is, it is always a *re*-production of itself even when it appears to stay exactly the same in the same place. This requirement is well known by curators all over the world: a painting has to be reframed, dusted, sometimes restored, relit, and it has to be represented in different rooms with different accompanying pictures, on different walls, inserted in different narratives, with different catalogues, and with changes in its insurance value and price. So, even though a painting might never be loaned, surviving inside the same institutional setting without undergoing any heavy restoration, it has a career all the same; to subsist and be visible again, it needs to be taken care of. If you don't, it will soon be accumulating dust in a basement, be sold for nothing, or will be cut into pieces and irremediably lost.

If the necessity of reproduction is accepted, then we might be able to convince the reader that the really interesting question is not so much to differentiate the original from the facsimiles, but to be able to tell apart the good reproduction from the bad one. If *The Ambassadors* has been irreversibly erased, it is not out of negligence, but,

on the contrary, because of an excessive zeal in 'reproducing' it. What the curators did was to confuse the obvious general feature of all works of art – to survive they have to be somehow reproduced – with the *narrow notion of reproduction provided by photographic posters while ignoring many other ways* for a painting to be reproduced. For instance, they could have had a perfect facsimile registering all its surface effects in 3D and restored the copy instead of the work itself. If they had done this, they could have invited several art historians with different views to suggest different ways of restoring the copy and produced an exhibition of the results. Their crime is not to have offered a reproduction of the Holbein *instead of* the Holbein itself to the visitors of the National Gallery – *The Ambassadors* remains behind all the successive restorations much like *King Lear* remains behind each of its replays, granting or withdrawing its auratic dimension at will depending on the merit of each instance – but to have so limited the range of reproduction techniques that they have chosen one of the most barren one: the photograph – as if a painting were not a thick material but some ethereal design that could be lifted out of its materiality and downloaded into any reproduction without any loss of substance. Actually, a terribly revealing documentary shows the culprits restoring the Holbein by using as *their* model *photographs* of the original and subjectively deciding what was original, what had decayed, what had been added, and imagining the painting as a series of discrete layers that can be added or removed at will – a process that resembles plastic surgery more than an open forensic investigation.

Thus, what is so extraordinary in comparing the fate of the *The Ambassadors* with that of the *Nozze* is not that they both rely on reproduction – this is a necessity of existence – but that the first relies on a notion of reproduction that makes the original disappear forever while the second *adds* originality to the original version by offering it new dimensions *without* jeopardizing the penultimate version – without ever touching it, thanks to the delicate processes used to record it.

But, one might ask, how could any originality be added? One obvious answer is: by bringing the new version to its original location. The cognitive dissonance undergone by the visitor in the *Mona Lisa* room comes in part from the fact that in Palladio's refectory every single detail of the *Nozze* has a meaning entirely lost and wasted in the awkward situation provided for the version n-1 in Paris. In other words, originality does not come to a work of art in bulk; it is rather made of different components, each of which can be inter-related to produce a complex whole. New processes of reproduction allow us to see these elements and their inter-relationship in new ways. To be at the place for which it had been conceived in each and every detail is certainly one aspect – one element – in what we mean by an original. Well, on that ground, there is no question that it is the facsimile of the *Nozze* that is now original and that it is the version in the Louvre that has *lost* at least this comparative advantage.

We should not however be too mystical about the notion of an 'original location' in the case of the Veronese since the very refectory in which the facsimile has been housed is itself a reconstruction. If you look at photographs taken in 1950, you will notice that the original floor was gone and another had been installed at the height of the windows. The top was a theatre and the basement a wood workshop – the whole space had been altered. It was rebuilt in the 1950s, but the plaster and floor were wrong and the *boiserie* that surrounded the room and added the finishing touches to the proportion of the room was missing. In its stripped-down state, it looked more like a high protestant space that almost seemed to laugh at the absence of Veronese's counter reformation flourish.

But now the effect of the facsimile is such that there are rumors that the return of the painting has triggered a plan for a new restoration that will retrospectively return the space to its former glory. A facsimile of a heavily restored original, now in a new location, was causing new elements to be added to an original in its original location that is in part a facsimile of itself. Originality once seemed so simple...

The same is certainly true of *availability*. What angered the visitor so much in the Louvre was that she could not actually scan visually the *Nozze* without bumping into *Mona Lisa* addicts. The Veronese is so full of incident and detail that it cannot be appreciated without time to contemplate its meaning, implications and the reasons for its continued importance. What does it mean to enshrine an original, if the contemplation of its auratic quality is impossible? This, too, is another element that can be prized away and distinguished from all the others. Actually, this component of originality does not need to go with the originality of the location: the best proof of this may lie in the facsimile of the burial chamber from the tomb of Thutmose III in the Valley of the Kings.<sup>4</sup> It contains the first complete text of the Amduat to be used in a pharaonic tomb. The Amduat is a complex narrative mixing art, poetry, science and religion to provide a coherent account of life in the afterworld. The tomb was never made to be visited and the physical and climatic conditions inside are incompatible with mass tourism. As a result, the building is deteriorating rapidly and glass panels have had to be installed to protect the walls from accidental damage and wear and tear. However, the interventions in the tomb change its nature and inhibit both detailed study of the text and an appreciation of the specific character of the place. Exhibitions that present the facsimile and contextualize the text have now been visited by millions of people in North America and Europe. The delocalized facsimile has established the reasons for its continued importance, turned the visitors into a pro-active force in the conservation of the tomb, and could become part of a long-term policy that will keep the version n-1 safe but accessible to the small number of specialists who require access for continued study and monitoring. See? Each of the components that together comprise what we mean by a true original begin traveling at different speeds along the trajectory and begin to map out what we have called the catchment area of a work of art.

A third element of originality has to do with the *surface features* of a work. Too often, restorers make a mockery of the materiality of the original they claim to protect by limiting matter to shape only because they confuse 3D with 2D. Many Venetians, when they first heard of the *Nozze* facsimile, immediately conjured up in their mind a glossy flat surface much like that of a poster, and they were horrified at the idea of being given this in reparation for Napoleon's cultural rape of San Giorgio. Little could they anticipate that the facsimile was actually in pigment on a canvas coated with gesso, 'just like' Veronese had used. When it was unveiled, there was a moment of silence, then ecstatic applause and many tears. Large numbers of Venetians had to ask themselves a very difficult question: how is it possible to have an aesthetic and emotional response in front of a copy? This question is followed by another: how do we stop Venice from being flooded with bad copies without the criteria to distinguish between good and bad transformations?

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4 The facsimile of the tomb (in its current condition but without the elements that turn the environment into a museum) has resulted in detailed publications by the Egyptologist Erik Hornung and the psychologist Theodor Abt in both film and book form. Erik Hornung and Theodor Abt, *The Dark Hours of the Sun – The Amduat in the Tomb of Thutmose III* (Madrid: Factum Arte, 2005), DVD; Erik Hornung et al., *Immortal Pharaoh – The Tomb of Thutmose III* (Madrid, Factum Arte, 2006).

No doubt, it is an uphill battle: facsimiles have a bad reputation – people assimilate them with a photographic rendering of the original – and digital is associated with an increase in virtuality. So, when we speak of 'digital facsimiles', we are certainly looking for trouble. And yet we claim that, contrary to common presuppositions, digital facsimiles are introducing many new twists into the centuries-old trajectories of works of art. There is nothing especially 'virtual' in digital techniques – and actually there is nothing entirely digital in digital computers either!<sup>5</sup> The association of digitality with virtuality is entirely due to the bad habits given by only one of its possible outputs: the pretty poor screen of our computers. Things are entirely different when digital techniques are only one *moment* in the move from one material entity – Veronese's *Nozze* version n-1 in the Louvre – to another equally material entity – version n+1 in San Giorgio. During this time of mass tourism, increasingly vocal campaigns for the repatriation of spoils of wars or commerce, when so many restorations are akin to iconoclasm, when the sheer number of amateurs threaten to destroy even the sturdier pieces in the best institutions, it does not require excessive foresight to maintain that digital facsimiles offer a remarkable new handle to give to the notion of originality what is required by the new age. Since all originals have to be reproduced anyway, simply to survive, it is crucial to be able to discriminate between good and bad reproductions.

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5 Adam Lowe and Simon Schaffer, *NOISE*, 2000. An exhibition held simultaneously at Kettle's Yard, the Whipple Museum of the History of Science, Cambridge, the Museum of Archaeology and Anthropology, Cambridge and the Wellcome Institute, London (Cambridge: Kettle's Yard, 2000); Brian Cantwell Smith, 'Digital Abstraction and Concrete Reality', in *Impressiones* (Madrid: Calcografía Nacional, 2003).