

# THE NEW REAL

## THE DA VINCI CLONE

The work of art in the age of incredibly high-resolution 3-D reproduction.

BY SUSAN TALLMAN



Peter Greenaway with his *Leonardo's Last Supper* during one-night light performance on June 30, 2008, at the refectory of Santa Maria delle Grazie, Milan. Photo © Luciano Romano/Change Performing Arts.

THE FILMMAKER PETER GREENAWAY likes to ruffle feathers—if not, indeed, to pluck the whole bird naked. He had ample opportunity to do both in the run-up to his “dialogue” with Leonardo da Vinci’s *Last Supper* in Milan last year. *Leonardo’s Last Supper* (2008) is the second work (after *Nightwatching*, 2007, based on Rembrandt’s *Night Watch*) in a Greenaway series aimed at revitalizing great paintings that have become so broadly familiar we have lost the knack of really seeing them. He describes his primary concern as “visual literacy”; his intention for Leonardo’s painting was to reveal its Christian saga of betrayal and redemption, along with its innate cinematographic character, using light, sound and text. “We’re out

to educate you,” Greenaway explained, “as entertainingly as possible.”<sup>1</sup> (Commissioned by Cosmit, the organizer of Salone Internazionale del Mobile/Milan Design Week, *Leonardo’s Last Supper* was produced by Change Performing Arts in Milan.)

Some in the art world were appalled to think that Greenaway would be allowed to project images onto the surface of one of the most famous and fragile paintings on the planet. Others thrilled with anticipation to see what the filmmaker, with his gifts for visual splendor, pedantry and bawdiness, would do. Italian politicians had the chance to grandstand about blasphemy (in part because Greenaway promised some), schol-

ars to denounce his use of Leonardo as “artist’s material”<sup>2</sup> and critics to accuse the Italian authorities of being “out of their minds.”<sup>3</sup> Greenaway, in turn, had the chance to call the politicians, scholars and critics “snobs.” Finally, on June 30, for one night only, 10 groups of critics, scholars and politicians assembled in succession to watch as, over the course of 20 minutes, Greenaway created the illusion of daylight pouring onto the surface of the painting from the (now bricked-up) windows of the refectory of Santa Maria delle Grazie from dawn to dusk; of individual figures coming to life, emerging from and receding into the scene; of wine or blood flowing over the table’s edge; and finally,



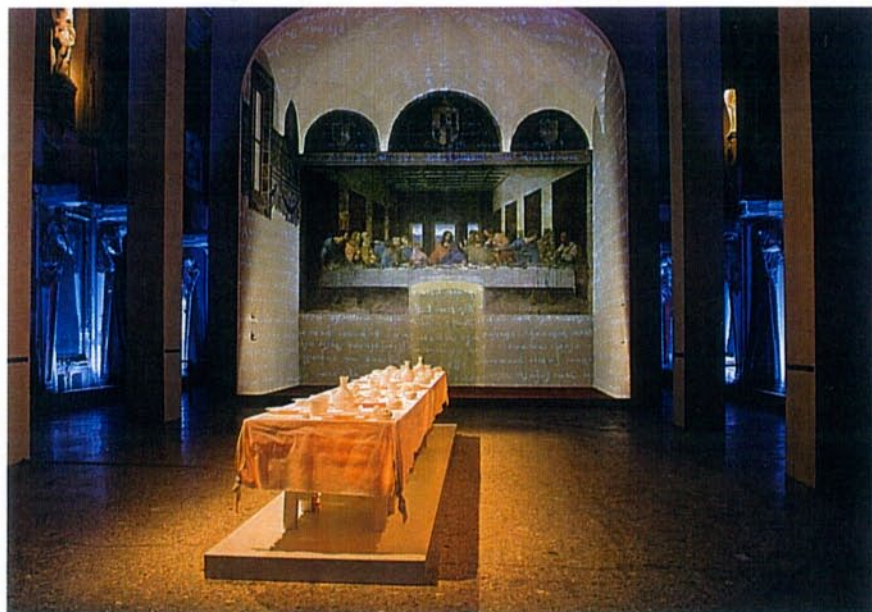
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as a string section in the soundtrack pulsed with broken chords, of Jesus apotheosized in a burst of white light.

While much was made—by both sides—of the dramatic juxtaposition of 15th-century handiwork and 21st-century technological wizardry, one of the most provocative aspects of the whole enterprise has gone curiously undiscussed: the fact that visitors to Milan that spring and summer actually had their choice of Suppers. They could book ahead and wait to be ushered into the refectory for their few minutes with Leonardo's glorious wreck, and/or they could reserve a spot in the Hall of the Caryatids at the Palazzo Reale to watch Greenaway's vision washing over the mural—or, to be precise, since not even Leonardo ever figured out a way to be in two places at the same time, over a full-scale facsimile of Leonardo's glorious wreck, made by Factum Arte, a Madrid-based digital workshop [see box].

There are, of course, lots of copies of *The Last Supper*; it appears on everything from postcards to rugs to chocolate wrappers. Most of these versions do not look very much like the painting as it exists today on the refectory wall. The one created for Greenaway's extravaganza does. This version, produced through digital panoramic photographs and multilayered printing technologies in super-high (1200 dpi) resolution on a 1:1 scale and printed onto a surface that mimics the original's cracks and bumps, set within an architectural reproduction of the refectory, looks exactly like the original. Franco Laera, the producer/curator of Greenaway's spectacle, explained to me that in Italy, the word "facsimile" is frowned upon as carrying suggestions of deception; the word they prefer is *clone* (same in Italian and English).

For Greenaway, the clone was the solution to a thorny logistical problem. Although, after two years of negotiations, the ministry of culture was satisfied that the project's light and sound wouldn't harm the painting, the refectory is a sealed, climate-controlled space; no more than 25 visitors at a time are allowed to pass through the airlocks to spend no more than 15 minutes in the room. (The evening of the Greenaway event was a rare exception.) Larger audiences are simply not permitted. The compromise agreed upon by Greenaway and the authorities involved the one-



time event at the original setting and the ongoing exhibition, with facsimile. But if Greenaway's long-term project is about deep looking and a direct relationship with the original—the physical substance and appearance of this artifact of artistic intent—is it really possible for a clone to work in the same way?

The short answer would seem to be no—which might explain why it was necessary to undergo the nightmare of negotiations, the bad press, the bad blood, the flat-out expense of installing everything twice over, in order to have one night at least in which every person present could attest to having seen *the same old thing* in amazing new ways. (Writing in the *Guardian*, one critic echoed general opinion when he asserted that what he saw "came from

Top, light projection on the original *Last Supper* during June 30th performance at the refectory of Santa Maria delle Grazie.

Above, Greenaway's installation with the clone of Leonardo's *Last Supper* at the Hall of the Caryatids at Palazzo Reale di Milano. Photos this page © Luciano Romano/Change Performing Arts.

the mysterious depths of the painting itself."<sup>4</sup>) The one-night performance in Santa Maria delle Grazie established credibility not only for Greenaway but for the facsimile at Palazzo Reale. And the credibility of the facsimile is the only thing that prevents Greenaway's "dialogue" from coming across as a solipsistic monologue, with quotation. Two intriguing questions arise from all this: How does our awareness of



the clone's clone-ness affect what we see? And what does our experience say about "authenticity" in a world that—we are so often reminded—is beset with virtuality?

These questions come at a critical time. The Greenaway piece is the latest instance of a growing body of very large-scale, extremely high-resolution replicas of landmark works of art exhibited in settings or situations where we might expect to find the "real thing." Technological breakthroughs in the

recording and manipulation of descriptive data have now made possible copies that really do look like the originals. At the same time, the trajectory of recent art has realigned much of our thinking about originality. Still, the deployment of clones like the one in Greenaway's *Leonardo's Last Supper* represents a decisive shift, both in our ability to make things that replicate other things, and in our understanding of what it means to do so.

A century ago there would have been nothing remarkable about the presence

of a copy in a museum. Nineteenth-century photographs show museums filled with collections of classical sculpture—often the same cardinal examples in different museums: the *Apollo Belvedere*, *Borghese Gladiator* and *Venus de Medici* could all be seen (in cast-plaster form) in Berlin, London, Pittsburgh. In 1891, New York's Metropolitan Museum of Art set about raising \$100,000 to purchase a collection of casts large enough to compete with those in museums in Boston (777) and Chicago (247). "We can never

## MAKING A VERONESE

RUN BY BRITISH ARTIST Adam Lowe, the Factum Arte digital workshop in Madrid produces fabrications for contemporary artists as well as facsimiles in astonishing resolution of existing works. Factum Arte uses non-contact 3-D laser scanning and digital photography systems to gather data about the subject, which is then given form through a variety of 2-D and 3-D printing technologies. (Lowe estimates Factum Arte's current maximum resolution at 100 microns, roughly the width of a human hair.) The image file (some 500 gigabytes) for Paolo Veronese's *Wedding at Cana* [see next page] was printed onto gessoed canvas, pieced together, adhered to Alucore panels, hand-retouched by conservators in

the light of the refectory at San Giorgio Maggiore, Venice, and finally assembled and hoisted into place there.

The technologies used to create the Veronese are not entirely new, though the ability to store and manipulate such massive amounts of digital data is recent. Three-dimensional scanning, which maps a surface to create a point cloud of geometric measurements, has been employed for decades in the aviation, automotive and animation industries. But for these adaptations it is desirable to smooth out irregularities between points in the mesh—it takes up less memory and produces cleaner results. In works of art, however, every ding and dimple is important, so off-the-shelf technology has to be adjusted and enhanced.

Then there is the museological prime directive: do no harm, which means not touching, often not moving, and not over-lighting or over-heating the object to be reproduced. The Veronese had to be scanned and photographed in place at the Louvre with no external lighting or scaffolding, and only during hours when the museum was closed (no equipment could be left in the gallery when it was open to the public). Factum Arte's team built a non-contact color scanning system, which they mounted on a telescoping mast that could be raised to 26 feet, allowing them to reach the top of the enormous painting. An ultrasonic distance sensor ensured that the scanning head remained a uniform distance from the painting. It took a month to record the data through scanning, photography and human eye color-matching on site. This information was then digitally merged to create the final image file.

Factum Arte also built a flatbed pigment printer accurate to within a few microns in order to print the final image



Above, Factum Arte director Adam Lowe inspecting the facsimile of Paolo Veronese's *Wedding at Cana* after its installation in the refectory of San Giorgio Maggiore, Venice. Photo Matteo da Fina, Fondazione Giorgio Cini.

Left top, multiple scanning systems recording the Veronese painting at the Louvre. Time lapse photo Gregoire Dupond, Factum Arte.

Left bottom, a section of the facsimile being printed onto gessoed canvas. Photo Alicia Guraio del Fresno, Factum Arte.



onto sections of canvas prepared so as to mimic the three-dimensional irregularities of the original, including the scars it acquired when Napoleon's soldiers sliced it from the wall to carry it off. Canvas sections were then cut to follow features in the painting, and spliced together, the joints filled and retouched by hand by conservators.

There is no possibility for cheap mass-production here. It took Veronese and his assistants 15 months to create the original; it took the Factum Arte team 18 months to create the replica. For more detailed technical information, go to <http://www.factum-arte.com/eng/conservacion/cana/default.asp>. —S.T.



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expect," officials at the Met explained, "to obtain any large collection of original works, but we can obtain casts, which, for students of art and archaeology, and indeed, for the general public, are almost their equivalent."<sup>5</sup> Good copies of great works of art were regarded as essential to the transmission and continuity of culture, a process for which knowledge of form outranked concerns about surface or direct evidence of the artist's hand. But by the time the Met set about purchasing the replicas, there were those who had already begun to abandon the cult of casts. In 1879, Thomas Eakins decried copies as "imitations of imitations [which] cannot have so much life as an imitation of nature itself."<sup>6</sup> In the 20th century, "authenticity" supplanted "beauty" as the primary criterion of value, and plaster casts were consigned to the museum basement or the sales block. Today, authenticity still has pride of place in the art world. But how we define and experience authenticity is another matter.

Here is a story about another painting in another Italian refectory: Paolo Veronese's astonishing, gargantuan masterpiece, *The Wedding at Cana* (1562-63), a 732-square-foot, 130-figure explosion of strong color, theatrical action and expansive sky commissioned for the Benedictine monastery of San Giorgio Maggiore in Venice. Filling out the end of Palladio's elegant barrel-vaulted refectory, the painting remained in place until 1797, when it was sliced into sections by Napoleon's soldiers and carted off to Paris. Much of the art plundered from Italy was later returned, but *The Wedding at Cana* remained in the Louvre. As the buildings on San Giorgio slid into dilapidation, *The Wedding at Cana*, sitting in the Louvre at the center of artistic life in the artistic capital of Europe, was being copied by Géricault, Delacroix and Fantin-Latour.

By the new millennium, both the original Veronese and the buildings on the island of San Giorgio Maggiore in Venice had been restored, and the Fondazione Giorgio Cini, which now owns the island and occupies the ex-monastery, wished to cap off its refurbishing of Palladio's refectory with a re-installation of the Veronese. In 2006 they turned to Factum Arte. Viewers today have a choice: they can go to the Louvre to see what are substantially, if not entirely, the canvas and pigments with which Veronese



Hall of Casts at Vassar College, Poughkeepsie, N.Y., early 1900s. Special Collections, Vassar College Libraries.

and his shop worked. Or they can go to San Giorgio Maggiore and see something (almost) visually identical to what is in the Louvre, though made of quite different stuff. The original hangs low on a wall at the Louvre, between two doors, in the same crowded gallery as the *Mona Lisa*. The copy at San Giorgio Maggiore hangs at the height and in the space for which it was intended, with the lighting anticipated by Veronese. There is no doubt which is the more authentic object. But which version provides the more authentic *experience* is open to question. Watching Factum Arte's (and YouTube's) footage of the unveiling (which took place in 2007, on the 210th anniversary of the painting's removal), you can hear a collective gasp of astonishment when the curtain falls away from the image. People wept.

The emotional reception that greeted the Veronese facsimile and the critical approval it has enjoyed in the international press fly in the face of a commonly held belief anticipated by Walter Benjamin's famous formulation: "That which withers in the age of mechanical reproduction is the aura of the work of art." In "The Work of Art in the Age of Mechanical Reproduction" (1936), Benjamin employed the term "aura" to summarize everything about the specific presence and specific history of an object that its reproduction lacks. In separating the image from the substance of, say, the *Mona Lisa* and

allowing it to proliferate as a carnival of postcards, posters, T-shirts, masks, billboards, color plates and tote bags, we change the way the image functions in the world. Tourists commonly report how disappointing it is, finally, to see the real thing. Indeed, a group of my students once proposed a unit of aura measurement, which they dubbed the "Benjamin" (or "Bennie" for short); those who had been to the Louvre ranked the *Mona Lisa* well down in the lower half of the Bennie scale.

Bennies notwithstanding, cultural heritage sites around the globe have increasingly resorted to replicas of various degrees of believability. The caves at Lascaux and Altamira have been closed to visitors for decades (the carbon dioxide, heat and humidity produced by human bodies were destroying the prehistoric paintings and their walls), but replica caves now exist at both sites.<sup>7</sup> Concerns about air quality have led officials in Italy to move ancient monuments indoors, and replicas have taken their place. The equestrian portrait of Marcus Aurelius that stands in the Piazza del Campidoglio in Rome was made in 1981, while the second-century original is safely ensconced at the Palazzo Nuovo. The ancient horses nicked from Constantinople by the Venetians in 1204 huddle inside the basilica of San



## WHAT IS TANTALIZING ABOUT FACSIMILES IS THAT THEY CELEBRATE THE DEPENDENCE ON RITUAL EVEN WHILE BEING ACKNOWLEDGED AS REPRODUCTIONS.

Marco, while replicas prance outside on the porch. Facsimiles can also restore a once coherent whole: the Throne Room of Ashurnasirpal II in Nimrud, excavated in the 1840s, was dispersed in parts to museums around the world; a facsimile project is now under way that would "reunite" those parts for a touring exhibition, and wind up in Iraq at a permanent location to be determined.

There are signs of change even within art museums. In 2004, when the Art Institute of Chicago exhibited a full-scale Photoshop replica of Seurat's *La Grande Jatte*, digitally altered to correct for the aging of Seurat's pigments, critic Charles Stuckey said it marked "a milestone in exhibition history, art history, art education and modern esthetics." (Though as Stuckey pointed out, the reproduction was placed quite apart from the "real" art as a matter of "museum pride."<sup>8</sup>) Two years later, a Dada show at the National Gallery in Washington was dotted with replicas of works by Duchamp, Picabia and Man Ray. In this case, the museum was responding to the logic of the art itself. It was, after all, Duchamp who said he wanted to "wipe out the idea of the original," and who then spent the bulk of his career authorizing replicas of his own works, including earlier replicas, notes and readymades.<sup>9</sup> Duchamp's point, which has had a profound influence, was that no object really means much on its own, for meaning is determined by an ever-changing network of contextual relationships: physical setting, social function, economic clout, etc.

Writing in the 1930s, when the Fascists were exploiting mass-produced imagery, Benjamin believed that mechanical reproduction had broadly altered the experience of art. Mechanical reproduction, he wrote, "emancipates the work of art from its parasitical dependence on ritual. . . . Instead of being based on ritual, [art] begins to be based on another practice—politics." Seventy years later, in a world more awash in mechanical reproduction than Benjamin could have imagined, the "parasitic dependence" of

art on ritual remains as strong as ever. What is tantalizing about facsimiles like the San Giorgio Veronese, though, is that they celebrate the dependence on ritual even while being acknowledged as reproductions. Their point is not to "emancipate" the image, but to root it more firmly in its own history. Perhaps all that disappointment at the Louvre is the fault not of postcards, but of intervening glass, enforced distance and the train-station feel of being in a large, high-ceilinged, marble-floored room with hundreds of other people. It could be that the *Mona Lisa* is diminished not by the successes of reproduction but by a failure of ritual.

Greenaway's *Leonardo's Last Supper* is ultimately about the nurturing of a certain kind of attention. The book published to accompany the project inventories the mural's gorgeousness and decrepitude on 160 pages, each reproducing a 9-by-11½-inch section of the painting at 1:1 scale, inviting deep submersion in the (replicated) surface. Unlike the actual refectory wall, the clone is not fragile, but its presentation in the Hall of the Caryatids (itself an in-situ reproduction of the original structure, bombed in World War II)—along with the booking of tickets and the wait—created a suspension of the hubbub of daily life similar to that experienced when visiting the actual painting at Santa Maria delle Grazie. In the end, the project was greeted rapturously. The minister of culture, Sandro Bondi, wanted to make the five-month installation permanent: "We could dedicate one day a week to seeing Leonardo through the eyes of Peter Greenaway."<sup>10</sup> Vittorio Sgarbi, the former head of Milan's arts council, said, "It has reconsecrated the painting after Dan Brown [author of *The Da Vinci Code*] deconsecrated it."<sup>11</sup>

Meanwhile, the facsimile that started life as a pragmatic solution has itself suggested future projects. Several of the paintings on Greenaway's list for upcoming "dialogues" are the subjects of competing claims to ownership: Picasso's *Guernica* is now in Madrid, but the Basque village whose destruction the picture commemorates is close to Bilbao, which has made a play for it; Raphael's *Marriage of the Virgin*, now in the Pinacoteca di Brera in Milan, was originally commissioned for the Church of Saint Francis in Città di Castello in Umbria, but was commandeered by one of Napoleon's officers and then sold to an Italian art dealer.

Not surprisingly, given Greenaway's penchant for the spectacular—what he calls "Cecil B. DeMille Cinerama canvases"<sup>12</sup>—the two versions of *The Wedding at Cana*, original and copy, are on the list, too. In such instances it might make sense to think in terms not of originals and copies, but of bifurcated authenticity—such as original objects in altered contexts and visually identical reproductions in original contexts. Peter Greenaway will find something profound to say about, and to see in, each of them, and the world may just be a few Bennies richer. ○

**1** Peter Greenaway, quoted in Elisabetta Povoledo, "A Filmmaker Adds a Cinematic Scope to a Storied Painting," *New York Times*, July 2, 2008, p. B5. **2** Leonardo expert Pietro Marani, quoted in Robert Booth, "Greenaway's Hi-tech Gadgets Highlights da Vinci for the Laptop Generation," *Guardian*, July 2, 2008, p. 5. **3** Brian Sewell, quoted in Michael Day, "Milan Mayor Stops Peter Greenaway's Plans to Project Images on Last Supper," *Telegraph.co.uk*, May 27, 2008.

**4** Jonathan Jones, "Feast Your Eyes on Peter Greenaway's Last Supper," Jonathan Jones On Art Blog, *Guardian.co.uk*, July 2, 2008. **5** "To Have New Treasures: Plaster Casts for the Metropolitan Museum of Art," *New York Times*, Feb. 26, 1891, p. 8.

**6** W.C. Brownell, "The Art Schools of Philadelphia," 1879, cited in James K. McNutt, "Plaster Casts after Antique Sculpture: Their Role in the Elevation of Public Taste and in American Art Instruction," *Studies in Art Education*, spring 1990, p. 165. **7** Neither replica is an actual cave: Lascaux II (the so-called faux Lascaux) is a handmade approximation rather than a mechanical facsimile of two of the "halls" of the original cave, while the new Altamira is the result of a 13-year-long effort to scan and reproduce every nuance of the cave walls and painting. **8** Charles F. Stuckey, "True Colors: Seurat and 'La Grande Jatte,'" *Art in America*, Nov. 2004, p. 59.

**9** Duchamp's attachment to replicas has been impressively honored by museums. The Tate, for example, proudly displays its replica of the *Large Glass* with a careful notation that it was made by Richard Hamilton with "Duchamp's approval."

**10** Quoted in Povoledo. **11** Quoted in Booth, op.cit. **12** Robert Booth, "Greenaway Prepares to Create da Vinci Coda," *Guardian*, Feb. 15, 2008, p. 5.

"Peter Greenaway: Leonardo's Last Supper" was on view at the Palazzo Reale, Milan [Apr. 16-Sept. 6, 2008]. It was accompanied by a book, *L'Ultima Cena di Leonardo/Leonardo's Last Supper* (Milan, Edizione Charta, 2008).

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