

After their defeat the Don Cossacks left their residential area and took refuge to the Ottoman rule. They have lived in the Lake Manyas, Kocagöl, and Akşehir districts for 300 years. After the establishment of the Russian Federative Soviet Republic, Cossacks who were living in Lake Manyas district turned back to Russia in 1927. By custom, the Cossacks could marry neither outsiders nor community members related by less than seven degrees of kinship. Because of this, Kocagöl residents returned to Russia in 1962 while residents of Akşehir choose to settle in the USA.

Church goods and other items more than a century old required by custom to be left behind were registered to the Hagia Sophia Museum's inventory as cultural property. Conservation of 475 metallic church goods consisting of icons, crosses, bone casings, chalices, plates, spoons, incensory, etc. has been carried out since 2013 under the authorization of Central Laboratory for Restoration and Conservation in Istanbul. The conservation process is handled in three parts: investigation, planning, and practice.

The investigation step involves identifying the general condition of the collection and storage environment; examination of various stamps on the objects; and the differentiation among surface layers which require removal and those which should be kept. Function and techniques of manufacture are also studied. Analytical investigations consist of visual examination of the objects by digital microscopes; determination of elemental compositions of both original surfaces and degradation products by XRF, XRD, and Raman Spectroscopy.

Four remarkable issues encountered during the examination and treatment of four objects are addressed in this study. The micro-climatic environment of storage is also discussed in accordance with ICP-OES and IC analysis of the water samples collected from the storage area.

This project is being carried out by conservators at the Central Laboratory for Restoration and Conservation in

Istanbul, in collaboration with art historians of the Hagia Sophia Museum and physicists from the Turkish Atomic Authority.

### **Using Magnets as a Conservation Tool: a New Look at Tension Drying Damaged Vellum Documents**

Tammy Zavinski

It is the responsibility of the conservator to develop innovative treatment methods when existing methods may compromise the natural history of an object. In this light, how might magnets be used as a tool when objects have unique characteristics which prohibit current conservation treatment methods?

Vellum documents in particular present challenges when they exhibit a variety of damage, planar distortion, adhered objects and media which require humidification and drying methods that allow the conservator the ability to manipulate the document itself while controlling external factors. This paper examines the treatment of a vellum document which necessitated alternatives to current methods for humidifying and tension drying while retaining elements of its unique natural history.

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*"The fundamental purpose of scientific discourse is not the mere presentation of information and thought but rather its actual communication.*

*It does not matter how pleased an author might be to have converted all the right data into sentences and paragraphs; it matters only whether a large majority of the reading audience accurately perceives what the author had in mind."*

*from The Science of  
Scientific Writing  
by George Gopen and  
Judith Swan*

### **"V&A's Indian Textiles have Stories to Tell," *The Art Newspaper*, 10/11/2015**

A 500-year-old "wearable book" kept in storage at London's Victoria and Albert Museum (V&A) for 80 years has made its public debut this month, thanks to the institution's textile conservators, who have painstakingly prepared it for display in a new exhibition, *The Fabric of India*.

The talismanic shirt, beautifully inscribed with all 6,000 verses from the Koran, would have been worn by those seeking protection in battle and from other dangers such as disease, famine, travel and childbirth. Many such garments were made in Iran and Turkey, but the Bihari script written on its starched cotton suggests that this one was made in India between 1480 and 1520.

There are no records to show how long it took to create the piece, but an example in the Topkapi Palace Museum in Istanbul took three years to complete. The object's "hybrid" status required the textile conservator Elizabeth-Anne Haldane to work with colleagues specialising in paintings and works on paper. Pigment analysis revealed that the artist used black ink, red lead, vermilion, lead white and lapis lazuli; gold was reserved to record the 99 names of God.

Haldane found the pigments to be highly fugitive, or impermanent, making it too risky to attempt to remove stains, especially the noticeable sweat marks under the arms. "I couldn't use any wet adhesives because of the pigment," she says. Creases caused by the shirt having been folded into a neat square and sent by post to the museum in 1935 can still be seen.

### **"How To Document Heritage Sites Under Threat," *The Art Newspaper*, 10/19/2015**

A major conference in Berlin from 19-20 October will bring together heritage advocates and technology for a major conference on how digital technology is being used to preserve the world's heritage sites.

Resilience Through Innovation has been organised by CyArk, a California-based non-profit organisation that uses digital scanning to create a free-to-access online three-dimensional archive of the heritage sites. To date CyArk has archived data

from hundreds of sites across the globe, including the Mount Rushmore National Memorial in Keystone, South Dakota, the Brandenburg Gate in Berlin and the Tombs of Buganda Kings at Kasubi in Uganda. Hundreds more projects are in development as part of its plan to scan 500 sites in five years.

Speaking to *The Art Newspaper*, Ben Kacyra, the founding director of CyArk, said: “We are losing heritage sites faster than we can physically conserve them.” Kacyra attributes the loss of sites to global warming, urban encroachment and conflict.

In June, in response to attacks on heritage sites in Syria and Iraq, CyArk and the International Council on Monuments and Sites (Icomos) launched Project Anqa to document at-risk sites. The initiative calls for teams to be on standby so they can be deployed to quickly “scan and can” data from heritage sites when it is safe to do so. Technology was distributed to various teams earlier this month.

**“Collector Offers Contemporary Works for Conservation Lessons,”** *The Art Newspaper*, 11/01/2015

The contemporary art collector Patrizia Sandretto Re Rebaudengo has formed a collaboration between her Turin-based foundation and the Italian city’s conservation and restoration school, housed in the Baroque Venaria Reale palace. Sandretto is offering a number of works from her collection for individual study by the school’s undergraduates so that, in collaboration with the artists, they can learn about handling newer materials.

She cites a sculpture by the Scottish artist Martin Boyce, who wants the work to rust—but not too much. “Materials change. They are not necessarily damaged, but are under pressure. We can offer them for study to a new generation of restorers,” Sandretto says.

**“Smithsonian Puts its Cowboy in Intensive Care,”** *The Art Newspaper*, 11/01/2015

Vaquero, a brightly coloured, 16ft-tall sculpture of a cowboy on a bucking horse that has stood outside the Smithsonian American Art Museum in Washington, DC, for 25 years, is

undergoing conservation at the McKay Lodge Fine Art Conservation Laboratory in Ohio. The piece was modelled in 1980 and cast in 1990 by the US sculptor Luis Jiménez, who used materials appropriated from the car industry, including resin-coated fibreglass and pigmented gel coatings. Moisture has corroded the internal steel armature and caused the gel coats to fail, resulting in rust stains, cracks and other damage. The piece is expected to go back on display in spring 2016.

**“3D Technology Enables Cleveland Museum of Art to Identify Centuries-Old Sculptural Fragment,”** *3DPRINT.com*, 11/06/2015

A six-foot-tall, 2,000-pound stone statue of Krishna, sculpted in the sixth century and now owned by the Cleveland Museum of Art has been fully restored thanks to 3D scanning and printing.

The museum purchased the sculpture in 1973, but it was missing its arms and legs, the broken pieces of which were later rediscovered in the garden of a Belgian sculptor who had attempted his own failed reconstruction years ago.

The Cleveland Museum of Art was able to restore most of the statue, including the legs and right arm, but they were unable to make a 432-pound fragment, which included the left hand holding up the mountain, fit. Concluding that the piece must not have been part of the original sculpture, the museum donated the fragment to the National Museum of Cambodia, which owns a similar statue.

The Cambodian museum attached the fragment to its own statue, but experts in Phnom Penh were skeptical that the fragment was a good fit.

In 2014, conservator Bernard Porte of the École Française d’extrême Orient suggested that the two museums submit stone samples for petrological analysis, which confirmed that the crystalline structure of the sandstone fragment perfectly matched that of the Cleveland statue.

Conveniently, in 2014 the fragment was included in a Metropolitan Museum of Art exhibit on early Southeast Asian sculpture, and representatives from Cleveland were authorized to 3D scan it while it was in the country. A

3D scan was also taken of the statue in Cleveland, and the two pieces were digitally reattached on the screen.

With assistance from Think, the engineering innovation lab at Case Western Reserve University, two 3D printed replicas of the statue and fragment were printed: one miniature, one life-sized. At both scales, the pieces fit together.

When presented with the new evidence, National Museum of Cambodia director Kong Vireak agreed to return the fragment to Cleveland so that it could be reunited with the rest of the sculpture. In later October, the fragment was shipped back to the Cleveland Museum of Art, and the museum began the process of disassembling and reassembling the statue, making adjustments where needed to accommodate the new piece.

Before any actual work takes place on the statue, the disassembly and reassembly will be done using the 3D printed models.

**“A 16th-Century Painting of Judas Survived this Long Thanks to Ingenious Repurposing,”** *Quartz*, 11/25/2015

Researchers have discovered a rare painting from the 16th century, which appears to have survived the centuries only because it was turned around, while the back was used for another purpose.

The brightly painted wooden panel depicts the Kiss of Judas Iscariot, a scene of the betrayal of Jesus Christ by one of his followers. It is one of the images used in the Catholic devotional practice known as the Stations of the Cross, and should have been destroyed by during the 16th-century Protestant Reformation, when nearly all religious art was purged. “A regime of systematic iconoclasm was implemented,” explains the website of national art museum Tate Britain. “Orders were given to ‘utterly extinct and destroy’ images ‘so that there remains no memory of the same.’”

But the painting went unscathed and was sold to Fitzwilliam Museum in Cambridge in 2012. When it arrived at the museum’s art conservation department, it was covered with dust, cobwebs, bat feces, and old varnish, said conservator Lucy Wrapson. The back was also covered by a plywood board.

Wrapson found traces of handwriting on the back of the panel when she removed the plywood. With the help of infra-red photography, she found that the panel had once been flipped over, whitewashed, and used for other displays.

Wrapson attributes the painting's survival to this repurposing. She added that the ingenious conservation measure was "quite likely" done by "someone who did not want [the painting] destroyed." The painting is now on display in the museum's gallery of medieval works.

**"Lunder Conservation Center: A Conservator Finds Art in the Dark,"** *Eye Level*, 12/01/2015

At first glance Chapel In-the-Fall-Wood, by self-taught artist Maceptaw Bogun, depicts a somewhat unassuming scene: a sun sets behind a small chapel nestled amidst trees and mountains.

However, when the lights are off and the painting is viewed underneath ultraviolet radiation, a different scene emerges. The sun lit sky transforms into a starry night with a full moon. Dangling leaves glimmer in the moonlight. A brilliant star hovers over the steeple and shines on the bolder in the foreground. Bogun used phosphorescent (better known as glow-in-the-dark) paint to depict an alternate nightscape atop the day lit landscape.

When speaking of this painting, he explained, "When you turn out the lights, you see the moon." Phosphorescence is a lesser known cousin of the more familiar fluorescence: the bright glow materials give off when placed under ultraviolet radiation. Phosphorescence can generally be distinguished from fluorescence by its afterglow: a phosphorescent material will continue to emit light after the source of energy has been removed, while a fluorescent material will not.

For this treatment, one of the main questions was identifying what type of pigment is responsible for the phosphorescence. From her research, Desi Peters, a graduate intern at the Lunder Conservation Center, determined that the two most likely pigments were zinc sulfide and strontium aluminate. Different phosphorescent materials have different afterglow durations. Zinc sulfide

has an afterglow of minutes whereas strontium aluminate has an afterglow of hours.

To explore this, the painting was placed under ultraviolet radiation in a dark room and the afterglow was timed. The paint glowed for over two hours! This experimental finding, combined with other forms of analysis including x-ray fluorescence, helped conservators determine the pigment responsible for the phosphorescence is strontium aluminate.

**"How a Long-Lost Caravaggio Masterpiece was Recreated, Nearly 50 Years After it Was Stolen,"** *The Telegraph*, 12/10/2015

Nearly 50 years after it was stolen by the mafia from a church in Sicily, a masterpiece by Caravaggio has been miraculously brought back to life by cutting-edge technology pioneered by a British expert.

In one of the most infamous art thefts of the 20th century, Caravaggio's "Nativity with St Francis and St Lawrence" was snatched from the Oratory of San Lorenzo in the heart of Palermo in 1969 by two unidentified raiders who cut it out of its frame with knives. It was never recovered, and is listed by the FBI as one of the world's top 10 art crimes.

Now an art laboratory led by Adam Lowe, a British artist, has managed to reproduce the masterpiece in all its original glory after a painstaking project lasting five months. Mr. Lowe is the director of the Madrid-based Factum Arte digital restoration laboratory.

His team faced a huge challenge – initially they had to work off a single colour photograph that was taken of the painting a year before it was stolen. By luck, they then managed to find in an art conservation institute in Rome a collection of black-and-white glass-plate negatives of the masterpiece, dating from its last restoration in 1951.

The experts used sophisticated, 52 mega-pixel cameras and purpose-built digital printers to make copies of the images, steadily building them up into a composite image that was as faithful to Caravaggio's original canvas as technically possible.

They painted in details in a style that was true to Caravaggio's famous "chiaroscuro" technique of depicting

light and shade. They were even able to replicate the original brushstrokes left by the Renaissance painter. The reproduction was stretched, varnished and mounted on traditional canvas.

A few days ago, it was placed in the exact spot where the original hung, above the altar in the Oratory of San Lorenzo. It will be unveiled on Saturday at a ceremony that will be attended by Sergio Mattarella, Italy's president. "I would hope that whoever took the original would now be prompted to return it, prompted by the degree of care and affection lavished on this project."

**"Rembrandt Stars in Major New Series on History of Restoration,"** *The Art Newspaper*, 12/23/2015

An article on the restoration history of Rembrandt's largest painting is due to appear in the Burlington Magazine's February 2016 edition, as part of a three-year, 18-article publishing project focusing on the history of painting conservation.

The series will cover the period from 1720 to 2000 and will examine prominent restorers, specific paintings with complex conservation histories and the history of changing tastes within the field.

This month's edition includes a piece on the controversial restoration policies at London's National Gallery under the leadership of its first director, Charles Eastlake (1793-1865). Funded by the Kress Foundation, the series kicked off in October with a piece on Théodore de Mayerne (1573-1654 or 1655), physician to King James I and King Charles I, who recorded artists' materials, techniques and preferred methods of restoration, making him one of the earliest figures in the discipline's history.

**"Jackson Pollock Masterpiece Undergoes Innovative Cleaning in Germany,"** *Artnet News*, 01/05/2016

At the Kunstsammlung Nordrhein-Westfalen, in the German city of Düsseldorf, director of restoration Otto Hubacek is currently in the process of cleaning Jackson Pollock's Number 32 (1950), and has come up with an innovative method for the legendary painting.

The painting is considered

one of the most important examples of American abstract expressionism. But after 65 years, its surface has gradually degraded into a yellowish-gray color. Cleaning the large scale 2.69m x 4.57m surface with a tiny brush and microfiber sponge was not an option for Hubacek.

After months of research and consultation with international colleagues, the art restorer developed his own technique, whereby a special device he had designed blasts particles of wheat starch onto the canvas. He must then carefully remove the starch with a miniature brush attached to a vacuum cleaner.

The catch is that he must avoid hitting the black paint, as the wheat starch could affect it. The painstaking process requires extreme caution and would take between 200 to 300 hours to complete. Hubacek now plans to present the results of his unusual restoration technique to the Museum of Modern Art in New York.

**“How do You Clean a Masterpiece? Louvre to Restore Leonardo da Vinci’s St. John the Baptist,”** *The Art Newspaper*, 01/14/2016

The restoration of Leonardo da Vinci’s work is a touchy subject for the Louvre. The museum weathered a storm over the cleaning of his painting of The Virgin and Child with St Anne (1503-19) and had to proceed with caution on La belle ferronnière (1490-96).

So it is not leaving anything to chance with the forthcoming treatment of St John the Baptist (1513-16). “There is major media pressure,” says Sébastien Allard, the director of the department of paintings.

Experts are regularly divided on the issue of restoring Leonardo’s paintings, only around 15 of which are known to be extant. In 2011-12, work done on his St Anne stirred debate, with some in favour of thinning much of the varnish and others who thought the removal should be more moderate.

The painting will be taken down from its spot in the Grande Galerie, just next door to the Mona Lisa, by the end of January. While the last restoration of the work dates back to the 19th century, layers of varnish—not always documented—have been added to “give depth to the work”. These have oxidised, yellowed and browned, while dirt has

accumulated between the layers of varnish.

Regina Morieara will lead the restoration, in collaboration with the restoration and research centre for French museums (C2RMF).

**“Hong Kong in Dire Need of Professionals to Help Restore and Conserve Artefacts, Experts Say,”** *South China Morning Post*, 12/03/2015

Greater appreciation of heritage conservation among Hongkongers and the mushrooming of public and private institutions working in the field are fuelling growing demand for professional conservators in a city where the training is hard to find. Critics say conservators will play an important role in realising Hong Kong’s aspirations to become a regional arts hub, but the job is a niche profession for which university programmes are difficult to establish, and so the city will need to look elsewhere for talent.

Evita Yeung, head of conservation at the Leisure and Cultural Services Department, said the workload of the department’s conservation team had increased as the city woke up to the importance of conserving its heritage. The government has proposed building a 10-storey conservation and storage facility with 21,500 sq ft of floor space in Tin Shui Wai to house some 1.3 million pieces of art from government collections.

**“Rapture Restored to Bernini’s Baroque Masterpiece after Clean-Up Reveals Unity of Design,”** *The Art Newspaper*, 01/14/2016

Five hundred years after the birth of St Teresa of Avila (1515-82), Gian Lorenzo Bernini’s emotive Baroque sculpture of the Spanish nun experiencing religious ecstasy has been restored.

Conservators cleaned almost two decades of grime from statues in the Cornaro chapel of the Santa Maria della Vittoria church in Rome, including the angel poised to pierce the saint’s heart with a golden arrow and, on either side, relief busts of members of the Cornaro family, Bernini’s patrons.

The project extended to Bernini’s architectural setting for the

sculpture: the altar and inlaid floor were treated and the leaking oculus above the group was sealed up. The last major restoration took place in 1996.

The year-long, €21,000 project—funded by the municipal heritage authorities and organised in collaboration with the church’s Carmelite religious order—also reversed a previous attempt to mask the travertine base of the central sculpture.

Restorers discovered that part of the stone had been crudely painted to match the polychrome marble of the wall panel behind. The layers of pigment and stucco were removed after analysis revealed that the imitation marble was not original but a later addition.

Now whitewashed, the base reveals the unity of Bernini’s design. The sculptor worked the stone to blend in with the single block of carved white Carrara marble above, creating the illusion of a floating cloud bearing up the angel and saint.

**“Rescuing Memories,”** *UD Daily*, 01/15/2016

Deadly flash floods cut a swath of destruction throughout Texas and Oklahoma during the 2015 Memorial Day weekend.

275 photographs rescued from the disaster were shipped to the Winterthur/University of Delaware Program in Art Conservation, where graduate students, under the expert guidance of Debra Hess Norris, Unidel Henry Francis du Pont Chair in Fine Arts and chair of UD’s Department of Art Conservation, treated them in a three-week photograph conservation class she teaches at Winterthur each January. Working to help others learn how to care for photograph collections is important to Norris and her students and can help to prevent damage in future disasters.

**“French Museum Reunites Head with Decapitated Khmer Statue,”** *The Art Newspaper*, 01/20/2016

After almost 130 years apart, the head and body of a seventh-century Khmer statue are to be reunited at the National Museum of Cambodia thanks to an exchange agreement with the Musée Guimet in Paris, France’s national museum of Asian art.

The restored sculpture of Harihara, a fusion of the Hindu gods Vishnu (Hari) and Shiva (Hara), will be inaugurated at the Phnom Penh museum tomorrow (21 January).

The head, which has been in the Musée Guimet's collection since 1889, will remain in Cambodia for the next five years, says the museum curator Thierry Zéphir. It will be reattached to the decapitated body of Harihara, which the National Museum of Cambodia acquired in 1944, after the museum's conservation team—led by Bertrand Porte of the French School of Asian Studies—confirmed they were a match.

The head was discovered in the late 19th century in a ruined temple at Phnom Da by Etienne Aymonier, a French colonial administrator and the first archaeologist to survey the remains of the Khmer empire. The Lyon industrialist Emile Guimet acquired the fragment, along with other Cambodian artefacts shipped to France for the 1889 Exposition Universelle in Paris, for his ambitious new museum dedicated to the religions of the Far East.

In return, Cambodian heritage officials are due in March to send sculptural fragments (ankles, feet and pedestal) recently excavated from the site of Koh Ker to the Musée Guimet, where they will complete a tenth-century statue of the goddess Uma dancing. The exchange could be renewed by mutual agreement, Zéphir says.

**“Fresh Look for Australian Landscape that Defined a Nation,”** *The Art Newspaper*, 01/20/2016

The North Wind by Australian artist Frederick McCubbin (1855-1917) has a fresh look and a new date, thanks to a restoration and conservation project undertaken by Melbourne's National Gallery of Victoria, in collaboration with the Australian Synchrotron scientific research centre.

This painting, as well as others by McCubbin of stoic pioneers braving the elements, were key in helping to define Australia's national identity.

The work went back on display at the gallery in December after an extensive, year-long treatment. Conservators redated the painting to around 1888—three years earlier than originally thought—suggesting

that McCubbin was more involved in promoting Australian Impressionism and in exploring new ways to portray the landscape than previously thought.

Paint samples and cross-section analysis revealed that both the signature and the date were added in the late 1930s or early 1940s—two decades after the Heidelberg School painter's death. These details were probably added by McCubbin's artist son Louis, who restored and conserved many paintings in the family collection.

Conservators also found that Frederick McCubbin made a number of revisions to *The North Wind*, one of which appears to be in response to a major drought in the region in the late 1880s. X-rays showed that the swirling dust bowl in the background was painted over a lush, green hill. The change can also be seen as McCubbin's desire to create an image of the heroic pioneer to mark Australia's centenary in 1888.

The project, sponsored by Bank of America Merrill Lynch, included extensive scientific research followed by months of cleaning to remove grime, discoloured varnish and overpainting.

**“Chennai's Floods Ravaged Works of Art, Too,”** *Hindu Business Line*, 01/22/2016

Nandalal Bose, Jamini Roy, MF Husain, Thota Vaikuntam, Amitabh SenGupta.... they're all renowned painters. And they have one other thing in common — the floods that devastated Chennai ruined a clutch of canvasses by these artists, and by many others.

Collectors with works that can be salvaged are now scrambling to engage restorers in Chennai and elsewhere. Most collectors are reluctant to talk about the paintings they have lost. But Mayur Shah, owner of Chennai's Focus Art Gallery, says he has been getting around 10-15 art works for restoration every day since December 10. He has restored over 100 paintings after the floods. Other restorers, in Delhi and Mumbai, are also helping salvage flood-ravaged paintings.

**“USS Enterprise Conservation Begins Phase II,”** *The National Air and Space Museum*, 01/28/2016

Stardate 1601.28: After a year of extensive research, conservation

work on the original studio model of the USS Enterprise is now underway in the Museum's spacedock. Our goal is to stabilize the model and return it to its appearance from August of 1967, during the filming of the episode *The Trouble with Tribbles*, which marked the last known modification of the ship during the production of *Star Trek*.

The model appeared in all 79 episodes of the original series, and was donated to the Smithsonian in 1974. It will go back on public display in the Boeing Milestones of Flight Hall this year, in time for the Museum's 40th birthday in July and the 50th anniversary of *Star Trek* in September.

The final painting of the Enterprise model will begin in April, using newly discovered reference photos from our appeal to Trek fans in the fall. The team will also build new nacelle domes with LED lights to mimic the spinning effect seen on television.

The Enterprise model has been carefully separated into its individual components—saucer section; secondary hull; port and starboard nacelles and pylons; deflector dish array; hangar bay doors; and the bridge.

Each section is being meticulously studied to determine its construction and condition and will be documented with visible, ultraviolet, and infrared photography. To analyze the model's original materials and understand how they are aging, metal sections of the model were analyzed with X-ray fluorescence (XRF) and plastic sections were sampled and sent to the Art Conservation department at SUNY – Buffalo State in Buffalo, NY.

Conservation scientists Dr. Aaron Shugar and Dr. Rebecca Ploeger used FTIR spectroscopy and XRF spectrometry to determine the specific adhesives and polymers used in the model's construction.

Of particular note to current model-makers, the analysis supports the long-reported use of Royalite plastic in the saucer. To understand the layers of paint applied to the model over the decades, microscopic cross sections of the paint were sampled and studied by Dr. Susan Buck, a conservator specializing in the analysis of painted surfaces.

The analysis revealed layers of paint from four generations of filming and four previous restorations.