

Works of Art on Paper

History, Conservation, and
Recommendations

Studio Research by
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Personal Statement

"Go on working, freely and furiously and you will make progress." -Paul Gauguin

As an artist excited about the possibilities of painting on paper, I am increasingly aware of the importance of conservational concerns which surround my own artwork. Although it is the work of art conservators to preserve existing works of art, it is the responsibility of the artist to be aware of conservation issues in regards to their chosen medium, and thereby to take steps to improve the quality of their own artwork. An informed artist will seek to educate themselves, not only about the history of their given medium, but also about the properties of the materials utilized in the process.

The process of researching this essay involved extensive library and internet research, as well as informal, yet informative discussions with professors and colleagues. The research laid out in this essay has provided me with a valuable learning experience, which has already informed my own artwork, in terms of choice of materials and artwork storage. It is my sincere desire to share this research with my colleagues, and to pass along my newfound knowledge to future students who exhibit similar interests in working on paper.

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Introduction

Throughout recordable history, humans have created visual statements on paper. It is remarkable that so many of these early documents are still in existence. In ancient Egypt, scribes recorded important religious and political events on papyrus, a paper-like material made from the stalks of the papyrus plant, which grows alongside the Nile River.¹ Many of these papyrus documents, which date between 4000 B.C.E. and 105 C.E., are still in good condition, due to Egypt's extremely arid climate. In 105 C.E., a Chinese court official by the name of Ts'ai Lun invented the first true paper out of an innovative combination of mulberry bark, hemp, and rags.² The widespread production of paper took centuries to infiltrate the European continent; prior to its arrival, sacred manuscripts were recorded on vellum, a fine grade of processed goat or sheep hide.³ One famous example of an illuminated manuscript is the Book of Kells, written around 800 C.E. on the Isle of Iona off the coast of Great Britain.



Fish Motif, Book of Kells, <http://www.osl.state.or.us/lib/kells/fish.gif>

¹ <http://www.beshay.com/paphist.html>

² <http://www.sjsu.edu/depts/Museum/tsailun.html>

³ <http://www.historicpages.com/texts/mshist.htm>

While a number of outstanding examples, such as the Book of Kells, have outlived the ravages of time, environment, and abuse, it is true that many thousands of documents and works of art on paper have not survived. It is important to discover the circumstances which allowed these surviving works to endure. Likewise, it is equally important for us to unravel the factors which led to the disintegration of less fortunate works. Art professionals provide us invaluable research in this area. For example, an art historian may seek to explain the condition of a given work of art on paper, given the history of ownership and the environment in which the artwork was displayed or stored. Furthermore, a paper conservator may consider the chemical composition of the paper, the media used to create the document, and analyze the interaction of those chemical agents. The quality of paper, combination of artist materials, surface treatments, environmental factors, as well as other conditions all contribute in determining the longevity of works of art on paper.

These considerations are important for the contemporary artist. Witness, in recent history, cases in which artists have disregarded archival considerations, only to seriously jeopardize the durability and very survival of their artwork. One example is the early drawings of Dutch-American artist, Willem de Kooning, a devotee of the abstract expressionist movement in New York City during the 1940s and 50s. As a young, poor artist, de Kooning selected inexpensive materials which enabled him to pursue his art and develop his sensibilities. Some of his early drawings were even executed on

butcher paper and old scraps of wrapping paper⁴, many of which are now destroyed. When artists such as de Kooning become well-known and even celebrated, work from their earlier period becomes collectable. If improper materials have indeed been used, both the value and the physical strength of the artwork is ultimately compromised. "Asheville", from 1948, was created using a combination of oil paint and enamel on paper.



"Asheville", Willem de Kooning, 1948

Many other twentieth century artists also used impermanent papers which were not archival, or combined incompatible media on paper, therefore subjecting their artwork to premature deterioration. According to Ellis, "Franz Kline painted on the Yellow Pages, Jackson Pollack on shirt cardboards, and Raphael Ferrar on brown paper bags. To Klee, the paper support was metaphorical. In 'Handbill for Comedians', Klee painted directly on a

⁴ Hess, p. 20

newspaper advertisement."⁵ In this case, Klee's choice of paper was intentional. It can therefore be surmised that artists regularly select products based not only for archival concerns, but also in consideration of economic and/or poetic reasons. Regardless, it is the artist's responsibility to be aware of the repercussions of their choices in regards to materials.

This statement brings up a critical point. Many artists are faced with the dilemma of replacing favored materials for more archival ones. By altering their materials, an artist may feel threatened by the risk of altering their aesthetic. As such, the artist must either make the conscientious choice to create an archival artwork, or remain loyal to their original aesthetic, thus compromising the artwork's longevity or even the short term survival of the artwork. There remains another significant philosophical question which concerns the value of longevity itself. Is artwork that lasts centuries inherently better art or more valuable than artwork which is impermanent or transient? For example, is a realized project by Jean Claude and Christo or an installation/performance by Ana Mendieta any less valuable or less significant than a bronze by Rodin or an oil painting by Joan Mitchell? It must be acknowledged that many highly merited works of art were never meant to fit within the paradigm of the art museum. Furthermore, many artists are interested in representing the idea of impermanence, and seek to reflect the constant flux of our rapidly changing world. Granted, not all contemporary artists are concerned with archival matters; artists may intentionally select materials which will rapidly deteriorate in order to express their ideas.

⁵ Ellis, p. 104-105

Nonetheless, it is empowering for artists to acquire knowledge of artwork conservation so that they may better navigate the available options, and in turn, make more informed decisions regarding materials. While many contemporary artists will continue to use materials and supports which are incompatible and non-archival, it is important to educate artists about the aspects which will affect the long-term longevity of their artwork.

A.

The Creation of Artwork on Paper

Part One: Paper Choices

"The chosen materials are the skeleton of a work. The history of these bones often reveals artistic intentions."⁶

One of the first decisions that painters face is the choice of surface upon which to execute one's artwork. For artists choosing to paint on paper, determining the proper surface is a crucial factor which affects not only the aesthetic quality of the finished artwork, but also the longevity of the work. Not surprising, there exists a plethora of options to choose from.

Basic knowledge about paper allows the artist to make informed decisions about which product to choose for a particular project. One of the most important considerations concerns the composition of fibers within the paper. Generally, long fibers contribute to increased paper stability.⁷ In contrast, papers made from shorter fibers result in a lower grade product.

⁶ www.collectorsguide.com/fa/fa045.shtml

⁷ www.artpaper.com/TrueBlue/teckpaper.htm

Many papers available contain wood pulp, an inexpensive and relatively plentiful material. One problem that arises with this type of paper is in regards to the acidity of wood pulp. The wood's naturally occurring acid poses a critical problem to works of art on paper: over time, paper products composed of acidic materials deteriorate more rapidly than products with a neutral pH. (Seven represents a neutral pH reading; numbers above seven indicate alkalinity, while numbers below seven indicate acidity.) In addition, papers made from wood pulp are more prone to UV damage. According to Karen Colby, in her article entitled, "A Suggested Exhibition/ Exposure Policy for Works of Art on Paper", "Almost all weakening and colour change of wood pulp papers occurs when exposed to the ultraviolet region of the spectrum."⁸ Consequently, papers containing wood pulp are traditionally considered less desirable for these reasons. However, in recent years, paper companies have begun adding "buffers" to wood-based papers to make them less vulnerable to internal and environmental deterioration. In the buffering process, alkalines are added in order to neutralize acidity. In addition, many paper companies are employing "high alpha cellulose", an extremely pure form of wood pulp, which ranks quite high in terms of strength and longevity.⁹

Cotton papers are widely used by artists, particularly in the United States, where cotton has historically been an important agricultural product. Papers made with 100% cotton fibers are held in especially high regard. There are two chief types of cotton fibers. The first of which, known as cotton linters, consist of relatively short fibers. Cotton rag on the other hand, is made up of the long

⁸ <http://www.lightsource.com/policy2.html>

⁹ <http://www.artpaper.com/news.html>

cellulose strands found on the cell walls of the cotton plant.¹⁰ Both are good choices for artists who wish to paint on paper, as cotton has proven itself over time to be a tough, long lasting surface. One factor which makes cotton papers so desirable is the fact that they are completely acid-free. As a result, 100% cotton fibers are pH neutral and considered archival. Another important factor which can affect the stability of the paper is the type of sizing used by the paper manufacturer to bind the fibers together. The sizing compound must conform to the neutral pH of the paper in order to maintain the paper's stability.

In addition to traditional cotton papers, artists who paint on paper now have access to a wide variety of papers from around the world: sulfite papers from Japan such as "Masa" and "Hosho", "Kozo" papers from Thailand, mulberry papers from China; the list of possible options is endless. Artists are responsible for inquiring about factors which influence the paper's durability and longevity. One product which may aid the artist's search in determining the archival quality of a given paper is a pH pen. A pH pen, when placed against the surface of any type of paper, will accurately read the paper's pH. This may help the artist to make informed decisions regarding their choice of paper to work on.

¹⁰ <http://www.arpaper.com/TrueBlue/teckpaper.htm>

Part Two: Use of Materials

Paper, being a relatively flexible and absorbent material, is susceptible to deterioration if unsuitable materials are used during the artmaking process. Paintings and drawings made from materials incompatible with the chosen paper surface may be at risk. Many works of art on paper are currently disintegrating, often due to the negligence of the artist in terms of either poor surface preparation or unsuitable use and mixture of media. In other cases, inherent flaws in the media contribute to surface instability and structural damage.

First, inadequate surface treatment leads to many archival problems, most of which are preventable. For example, the linseed oil in oil-based materials, such as oil bars and oil paints, will eventually destroy the paper support. In addition, some organic materials such as old-fashioned paste can potentially rot paper, as paste is susceptible to mold. The artist can take steps to prevent these tragedies from happening. The easiest way to seal and protect vulnerable paper fibers is by priming the paper with gesso or an acrylic gel medium. These products will render the paper surface relatively impervious to both moisture and chemicals. *Artpaper.com* recommends, "Be sure to apply at least 2 coats of acrylic gesso or other size & ground combination to properly seal your paper and protect against unwanted oil or water absorbency."¹¹ The drawback of applying these products is that they alter the paper's original texture, tooth, and absorbency characteristics.

¹¹ <http://artpaper.com/paint.html>

Oil Paint

Many experts flatly recommend against using oil paint on paper, even on paper that has been thoroughly primed. According to Ralph Mayer, in his book entitled, The Painter's Craft: An Introduction to Artist's Methods and Materials, the author writes, "Paper is a completely unsuitable material for oil paint from almost any viewpoint—it lacks structural strength and stability, it is alien and inappropriate to the oil medium, and the resulting works are usually very fragile."¹² One painting which exemplifies Mayer's statement is "Woman on a Sofa", by the French artist, Edgar Degas in 1875. Degas created this small artwork (19 1/8" x 16 3/4") using oil paint mixed with turpentine, directly onto pink paper.¹³ Despite the efforts of art conservators to preserve this work, close inspection reveals a brown halo of oxidized oil surrounding the figure.



"Woman on A Sofa", Edgar Degas, 1875

¹² <http://www.noteaccess.com/MATERIALS/PtgPaper.htm>

¹³ <http://metmuseum.org/collections>

Curiously, Mayer later contradicts his flat warning against the use of oil paint on paper, "...pure rag paper or wood fiber paper, certified to be neutral, mounted on 4-ply rag board, could seem to have an excellent chance for survival." In addition to Mayer's advice, I would strongly recommend that artists who prefer the use oil mediums thoroughly prime their surface prior to painting.

Acrylic Paint

Acrylic paints are widely considered suitable for works of art on paper. When compared with oil paints, acrylics are more flexible and are better able to withstand the natural movement of paper. According to Ellis, "Most conservation problems associated with acrylics on paper arise from too thick an impasto, too weak or thin a paper support, or the mixing together of different brands of commercial acrylic."¹⁴ While there are obviously differences between the many brands of acrylic paint, acrylics generally maintain their color brilliance, as the pigments themselves are encapsulated by the plasticity of the acrylic medium. It is also this plasticity which enables acrylics to adapt to paper's fluctuations on account of changes in humidity and temperature. In recent years, many painters have been turning to acrylics on account of the medium's inherent flexibility, easy cleanup, near chemical neutrality, and reduced toxicity.

¹⁴ Ellis, p.103

B.

The Presentation of Artwork on Paper

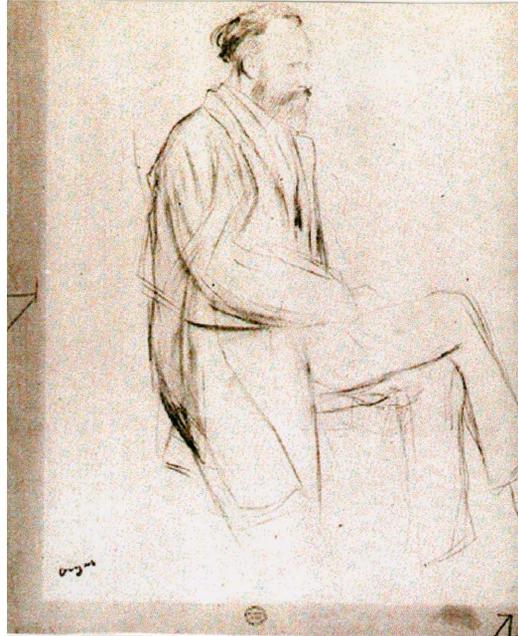
A well-constructed frame or support mount can attractively accentuate a finished work on paper, and provide added protection to the work itself. Artists should carefully consider their available framing options in order to arrive at the most suitable solution. First and foremost, a frame should not visually detract attention from the artwork. Rather, the frame should enhance the artwork's uniqueness and seek to clarify its presence.

Artists who paint on paper often choose to display their finished artworks behind glazing materials, such as glass or acrylic sheeting. An artwork which is glazed is generally better protected from environmental damage than an artwork left exposed to the open air. An exposed artwork may be subject to a variety of airborne pollutants such as sulfuric acid, nitric acid, ozone, and formaldehyde; these chemicals are naturally released into the atmosphere by common materials, including wood, leather, rubber and plastic¹⁵ Works of art on paper are also susceptible to damage by insects, especially those which prefer to feed on the starches contained within the paper pulp. In addition, fluctuations in temperature and humidity affect exposed artwork to a greater degree than work which is sealed behind glazing. Finally, exposed artwork is vulnerable to physical damage which may occur through improper or frequent handling, such as smudging, tearing and folding.

¹⁵ <http://www.hrmgv.org/research/cis/paper.html>

There are many types of glazing materials to choose from. While acrylic sheeting is lightweight, it scratches easily and conducts static, making it unsuitable for mixed media paintings which incorporate dry materials, such as charcoal or pastel. Glass on the other hand is generally heavier, yet it is more resistant to scratching doesn't conduct static charge. Whether the artist decides on acrylic or glass, it is important that the artwork does not come into direct contact with the glazing material. According to the American Institute for Conservation of Historic and Artistic Works (AIC), "Prolonged contact of the glazing with the surface of the artifact can result in its adhesion to the glazing or can cause surface changes in the work."¹⁶ Perhaps one of the most serious considerations that the artists must address is the importance of UV protection. Both acrylic and glass offer varieties which filter out ultraviolet light. For the very best protection, always demand glazing materials that are certified to effectively block UV rays. Unfortunately, light damage is irreversible: colors that fade because of exposure to direct sunlight are permanently altered. In "Study for a Portrait of Edouard Manet", by Edgar Degas, the effects of ultraviolet damage is striking. Because the glass covering this drawing was not able to sufficiently block out UV rays, Degas' drawing has been bleached by the sun, evidenced by the sharp tonal contrast of the bleached paper against the original tone. Prevention from exposure is the smartest way to preserve your artwork and limits the need for future conservation.

¹⁶ <http://aic.stanford.edu/treasure/matt.html>



"Study for a Portrait of Edouard Manet", Edgar Degas

In addition to glazing, some artists choose to mat their finished works. Matting provides extra support to works of art on paper, as well as breathing space between the glazing material and the artwork. A simple, but attractive mat may also perform an aesthetic function, by offsetting the artwork within the frame. Just as there are a variety of glazing materials, there are also many options when considering which type of mat to use. Unfortunately, most of the mat board sold for framing purposes is not archival, due to ignorance or cost-cutting concerns on the part of the artist, framer, or owner of the artwork. While non-archival mat board is cheaper, it can have disastrous effects. Standard mat board is generally not buffered and therefore not pH neutral. The acidity of this product may actually burn the surface of works of art on paper within just a few years of framing, and eventually darken the overall artwork. According to Carmi Weingrod's two-part article written for Daniel Smith

entitled, "Artists' Papers", "If you are framing a piece of artwork done on acid free-paper, you should seriously consider using museum quality matboard to insure its longevity. Seeing a good case of mat burn on pictures framed with non-museum board may convince you that the money will be well spent."¹⁷ It is therefore the artist's responsibility to advocate for the longevity of their artwork, and to demand conservation quality mat board whenever possible.

Other materials which may come into direct contact with finished artwork on paper include fixatives, tape, and adhesives. As is the case with mat board, these products all come in archival quality versions. For a product to be considered 'archival', 'museum', or 'conservation' quality, it must be not only pH neutral, but reversible and removable. One example of an archival quality fixative is Soluvar Varnish, manufactured by Liquitex. According to the manufacturer, Soluvar contain UV Light Stabilizers, and can be used on both oil and acrylic paintings. In addition, Soluvar is removable with mineral spirits, and is thus considered to be of archival quality.¹⁸ There are an assortment of tapes on the market that are regarded as archival. 3M makes a line of conservation tape, available in both single and double-sided varieties. Also, the gum adhesives on most linen tapes are water-soluble, thus easily removable and archival. Besides tape, liquid adhesives are another option for artists wishing to mount their finished works on materials such as Gatorboard or primed wood. (When wood is used as a support mount for works of art on paper, the surface that will be in direct contact with the paper should be thoroughly primed.

Wood is acidic by nature, and may burn through the underside of paper if it

¹⁷ Weingrod, Part II

¹⁸ http://www.liquitex.com/products/soluvar_gloss.html

maintains direct contact for a sustained period.) Once again, it is important to select only liquid adhesives which are archival. If the artist is in doubt about the pH or reversibility of a particular product, they may contact the manufacturer directly and request information concerning the archival status of the product in question. Examples of archival liquid adhesives include Berto Glue, which is manufactured by Corona Co. of Seattle, Washington, and Lineco's PVA and Methyl Cellulose Adhesives.

C. The Storage and Handling of Artwork on Paper

"Damaging climate, microbial agents, excessive light, mishandling, neglect and the inherently poor quality of the components of many art objects and the materials surrounding them are among the factors contributing to the deterioration of works on paper. The role of each must be considered in establishing storage conditions advantageous to the long-term preservation."

-Marjorie Shelly¹⁹

Wide and frequent fluctuations in temperature and humidity negatively affect works of art on paper. This fact is especially important for artists who work in the hot, dry climates of the south western portion of the United States, including Colorado and New Mexico. According to Shelly, paper exposed to hot, dry climates tends to become brittle. In turn, there is greater risk that the paint will crack and chip.²⁰ It is advantageous to maintain stable temperature and humidity environments in order to improve the longevity of paintings on paper. Ideal conditions for storage and exhibition are room temperatures

¹⁹ Bachmann, p. 29

²⁰ Bachmann, p. 29

between 60-70F, and relative humidity between 45-55%.²¹ The decision of where to hang an artwork also affects the stability of the artwork. Common sense tells us to avoid placing artwork in the vicinity of heating ducts, fireplaces, and stoves. In order to insure that temperature remains consistent, it is most desirable to place artwork on interior walls- those not sharing a side with the outdoors.

While complete darkness might be the ideal light condition for works of art on paper, it is nearly impossible, if not altogether impractical. As we have seen, direct exposure to ultraviolet light damages both the painting itself as well as the paper on which it was created. In addition to selecting UV glazing, it is preferable to hang artworks away from direct sunlight.

D. Resources Available to Artists

The following is a brief list of retailers, manufacturers, organizations, conservators, and publications which address conservation issues relevant to artists who paint on paper. I fully acknowledge that I may have overlooked important resources. It is only recently that I begun my study of this topic, and my research is ongoing; any gross omission is purely coincidental.

Retailers:

Light Impressions, 1-800-828-6216, www.lightimpressionsdirect.com

-a leading resource for archival supplies

Daniel Smith, Customer Service 1-800-426-7923, www.danielsmith.com

Lineco, Inc., www.lineco.com

²¹ <http://www.geocities.com/Athens/Crete/1555/page2.html>

Corona Supplies- division of RCI, Inc., 1150 Industry Drive, Seattle, WA 98188
-supplier of Berto Glue

ArtPaper.com

Archival Methods, 1-866-877-7050, www.archivalmethods.com

University Products, 1-800-628-4847, www.universityproducts.com

Organizations:

American Institute for the Conservation of Historic and Artistic Works, 1717 K Street NW, Suite 200, Washington, D.C 20006, (202)-452-9545,
<http://aic.stanford.edu>

Conservators:

Western Center for the Conservation of Fine Arts, 1225 Santa Fe Drive, Denver, Colorado, 80204, (303)-573-1973

Eileen C. Clancy, Conservation of Paper, Parchment and Photographs, 1227 Santa Fe Drive, Denver, CO 80204, (303)-534-3667

Publications:

Art on Paper, 39 East 78th Street, New York, NY 10021, 1-800-685-0777,
artonpaper.com

Brochures:

"How to Care for Works of Art on Paper", published by the Boston Museum of Fine Arts, Available through Daniel Smith, Item #7550122, \$3.95 + *shipping*

"Matting and Hinging Works of Art on Paper" published by the Library of Congress,

Contact:

The Superintendent of Documents, Government Printing Office,
Washington, D.C., 20402 Stock #030-000-00134-6
\$5.75 includes postage & handling

"Caring for your Paintings" & "Matting and Framing Works of Art on Artifacts on Paper: a Guide to Preservation", published by The American Institute for Conservation of Historic & Artistic Works, 1717 K Street, NW, Suite 200, Washington, DC 20006, (202)-452-9545, <http://aic.stanford.edu>

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