ON COLLECTING PHOTOGRAPHY

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aipad

The Association of International
Photography Art Dealers

On Collecting Photography

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Table of Contents

AIPAD Board of Directors *4*
Preface *5*
Introduction *6*
How to begin collecting photographs *7*
What to expect from a dealer *7*
How to choose a dealer *7*
Auctions *8*
The investment potential of photographs *8*
Determining the scope of a collection *9*
How to predict which photographers will be successful *9*
How to determine the value of a photograph *9*
The photograph as a multiple *10*
Buying vintage versus later or modern prints *10*
How to determine a fine print *11*
Signed versus unsigned photographs *11*
The longevity of a photograph *11*
Verifying the authenticity of a photograph *12*
Deaccessioning photographs *12*
What to expect on an invoice from an AIPAD dealer *13*
New Media Art *13*
Determining the value and authenticity of New Media Art *13*
Preserving New Media Art in the age of changing technology *14*
Glossary *15*
Recommended Reading *32*

AIPAD Board of Directors 2013-2014

Preface

The Association of International Photography Art Dealers, Inc. (AIPAD), organized in 1979, is dedicated to creating and maintaining the highest standards in the business of buying and selling photographs. With more than 120 members from North and South America, Canada, Europe, Asia and Australia, the Association continues to be a unifying force in the field of fine art photography.

Acting as a collective voice for the photography dealers that compose its membership, AIPAD maintains ethical standards, promotes communication within the photographic community, encourages public appreciation of photography, protects the rights of photographers and collectors, and works to enhance the confidence of the public working with responsible photography dealers.

Each year AIPAD presents The Photography Show New York, the premier exposition for the buying and selling of fine photographs. The Photography Show, along with its membership directory and illustrated catalogue, provides both novice and veteran collectors an opportunity to see thousands of photographs, from early daguerreotypes and calotypes to the latest in digital technology and new media. This annual event is an opportunity to meet more than 80 dealers who form the heart of AIPAD, and to share with them the joys and rewards of collecting photographs.

Introduction

After more than 170 years of existence, photography has emerged as an essential medium of expression in the arts, humanities and sciences. Whether as a document, metaphor, evidence or fiction, photographs play an active role in our understanding of our past, present and future. In the 21st century, the art of photography is enjoying unprecedented appreciation.

Photographs have been collected since its invention. However, with the increasing number of artists today using it as their primary medium, photography has become a collectible fine art equal to the more traditional arts, such as painting, sculpture and printmaking.

Opportunities for starting a photography collection have never been greater. New discoveries of historical material continue to be made. There are more exhibitions and better quality books available than ever before, in print and on-line. The number of resources for acquiring photographs continues to grow around the world.

On Collecting Photography is intended as a reference tool for those interested in acquiring fine photographs. Its purpose is to answer common questions and to provide a resource for further insight, information and understanding.

There is a glossary containing definitions of historical as well as frequently-used terms that will give collectors sufficient working knowledge of processes without becoming overly technical. It is worth noting that many historical processes are enjoying a resurgence of interest among contemporary photographers. New research and technology are continually adding to our knowledge of all photography, and *On Collecting Photography* will be updated on-line as new discoveries are made or terminology is revised.

There have been a great many books published on all aspects of photography. The bibliography at the back of this guide provides additional sources of information that will be helpful in looking at and understanding the medium. Many of these books contain their own extensive bibliographies for further study. Again, as new and significant books are published, they will be added to the on-line version of *On Collecting Photography*.

Although the members of AIPAD share common standards, it should be understood that any individual member might respond with some variation to the information that follows. The topics covered may be considered from different points of view and should not be construed as the only explanations endorsed by the Association, or its members.

How to begin collecting photographs

The best preparation for collecting photographs is to visit places where original photographs may be viewed: galleries, showrooms of private dealers, art/photography fairs, auction previews, museums, libraries and historical societies. In larger metropolitan areas, museum curators of photography often establish collector groups where photographs may be viewed unframed and where discussions of photography are encouraged. In addition, the books listed in the bibliography at the end of this guide can provide important historical, critical and technical information. Finally, the Internet provides seemingly endless opportunities for researching photography. While this will not substitute for viewing photographs in person, dealer and museum websites, as well as photography blogs, offer important resources.

Commercial galleries usually maintain regular hours and are open to the public at no charge. Private dealers show photographs by appointment. Although it is not necessary, you may wish to call ahead for an appointment when visiting a gallery if you have a specific agenda. Museums more involved in photography often have study rooms available by appointment for viewing specifically requested photographs.

What to expect from a dealer

When working with an AIPAD dealer, you should expect that they will be very knowledgeable about the art and history of photography. An AIPAD dealer is there to answer your questions, no matter how simple or complicated they may seem; they love the art of photography and enjoy talking about it. Many dealers specialize in specific areas (e.g., 19th century, modernism, contemporary) and pride themselves on being up to date on current market trends and newly discovered artists. Some dealers have expertise in finding and evaluating photographs they may not necessarily have in inventory, since it is the very nature of our business to develop sources that few collectors can hope to match. The best dealers will take an interest in the client's collection and help locate work that meets the client's interests. This may include introducing a collector to artists, to other galleries, and to new work not yet known to the general public.

The decision to purchase a photograph may be instant or it may take time. An AIPAD dealer can help you understand your taste and provide support and knowledge to help you make a decision with confidence.

How to choose a dealer

In the process of becoming familiar with fine art photographs, you may develop an interest in a particular artist or a particular period. Gallery guides, art magazines and the AIPAD directory offer information about the specialties of individual dealers. The Photography Show, sponsored annually by AIPAD, also provides an excellent opportunity to meet dealers from around the world.
After a few interactions, you will develop a sense about which dealers and galleries meet your particular needs. Collectors should choose dealers they trust, who are sensitive to the particular wishes and tastes of

the collector, and evoke the most confidence. Factors to consider include the number of years the dealer has been in business and his or her reputation with artists, peers, collectors and museum curators.

Auctions

Auction sales have changed dramatically in recent years. The auction salesroom was once dominated by the presence of dealers looking to add to their inventory, but it is now a retail-oriented market aimed primarily at the private buyer. The global reach of the auction houses has increased competition, resulting in higher closing bids than ever before. Coupled with Buyers' Premiums (the amount added to the hammer price recorded in the saleroom) of up to 25%, buying at auction requires careful consideration. This is where a strong relationship with a dealer can prove very beneficial.

The collector bidding on works offered for sale at auction is often subject to a degree of caveat emptor. The advice of a trusted dealer, whose interest is in developing a long-term relationship with you, will provide an experienced point of view on particular prints and help you gauge the authenticity, print quality, condition and accuracy of the information provided by the auction house. Even though there is ready access to auction sale results through on-line sources, the numbers do not tell the whole story about how works have fared in the marketplace. A reliable dealer is an expert in the connoisseurship issues surrounding any aspect of the photography market and can increase your awareness of what to look for and consider for acquisition.

The investment potential of photographs

While many photographs prove to be fine investments, an increase in value is never guaranteed. There are many important considerations to keep in mind:

- When contemplating a purchase, try to familiarize yourself with the photographer's body of work through books and/or visits to reputable galleries. From there, you can try to understand the importance of a single image within the context of the larger body of work.

- With older works, learn about the photographer's significance in the history of photography and the technical and/or aesthetic contributions they made. For contemporary works, consider the photographer's standing and critical appeal, technical expertise and potential for lasting significance in the field.

- Consider the quality of the print, as well as its rarity, condition and provenance. Study the price history of the photographer's work.

- A trusted dealer can provide invaluable advice about the investment potential of a work. But most importantly, buy a work that you love because, all things considered, it may not appreciate in value.

Determining the scope of a collection

First and foremost, a collection should reflect your taste, interests and budget. Identifying a specific theme, period, style, process or artist may be an excellent way to begin. Collectors must decide for themselves the extent of their economic commitment and then combine that with the availability of material in their field of interest. Your collecting decisions may evolve and change with increased knowledge.

How to predict which photographers will be successful

Many artists receive their greatest recognition late in life or posthumously. If an artist is already well-known, his or her work will sell for higher prices because of exposure, reputation and market performance. It is difficult to predict the success of either contemporary artists or those recently rediscovered from the past. The extent to which the work has been published and exhibited is one indicator that an artist's future looks promising. The attention of recognized critics also helps to identify a rising talent. You should examine as many prints as possible for qualities such as innovation, consistency and seriousness of intent. However, an artist's current or anticipated popularity is not the best criterion for deciding to make a purchase. Instead, your own experiences and instincts, along with the insights reputable dealers can provide, will be your most reliable guides.

How to determine the value of a photograph

Photographs, like any other work of art or collectible, are valued based on connoisseurship qualities, the supply and demand at a particular moment in time and what the market will bear in terms of price. Factors such as the photographer's reputation or the work's subject, rarity, historical importance, medium, condition, provenance, edition size, print date and quality will help determine the market's response. Recent comparable sales of the same or similar works both privately and at auction can help guide you in considering how much to pay.

Keep in mind that photographs are more akin to paintings than artists' prints in that the variety of photographic prints produced from a single negative often varies widely. This is especially true of photographs created prior to the 1970s, which was the advent of the photography market as we know it today. Contemporary works executed in editions often have remarkable homogeneity and may be indistinguishable within the edition. A common practice among contemporary artists that affects the price of editions is to employ a graduated price increase so that earlier numbers in the edition are priced lower.

Collectors should keep in mind that there are no set rules to valuing a photograph. An AIPAD dealer can help you understand trends in collecting photography and how the market has varied for any particular photographer or genre. Just as in any other market, values rise and fall according to the demands and

fashions of the day. For that reason it is best to focus on acquiring works you feel will give you enjoyment for a long time and not purely for investment purposes.

The photograph as a multiple

In theory, an infinite number of prints can be made from a negative or a digital file. Practically speaking, most artists working today limit the number of prints they sell by specifying an edition. An edition is a specific number of prints an artist agrees to sell of each negative. This number is often written on the print, usually near the artist signature, title and date.

In rare cases, when the edition has been completely printed, the photographer may destroy the negative or the scan. Usually, however, the negative or the scan is retired, either to the archives of an institution or to the photographer's own files.

It is important to note that editioning became a norm in the late 20th century, when collectors began actively buying photographs and questioning whether, and how often, they could be reproduced. In response, photographers began limiting how many prints they made, creating a finite market for their work. Prior to this, especially in the 19th century, print production was limited only by demand.

Nonetheless, many late 20th century artists never made editions. This does not devalue their work whatsoever, as the value of a specific photographic image is not necessarily tied to the number of prints made from the negative or scan.

Buying vintage versus later or modern prints

In general, a vintage print is considered to be more valuable than a later or modern print of the same image because it reflects the intentions of the artist at, or soon after, the time the picture was taken and printed. A photograph may be printed differently at various stages of an artist's career due to both a change in the artist's interpretation of the negative and changes in available materials.

The greater rarity of vintage prints is also an important factor. Before the 1960s, there was little demand for art photographs and few prints of any given image were produced. As such, a vintage print may not always be available or affordable, and sometimes its condition is inferior to that of a later or modern, archivally processed print. If both vintage and later or modern prints are available, the choice is ultimately the personal preference of the buyer.

How to determine a fine print

The qualities that make a fine print vary from artist to artist. In black and white work, tonal range and luminosity, for example, depend on the artist and the point in his or her career when the work was produced. A reputable dealer, curator, fellow collector, or photographer can often be of help in understanding the differences.

If the print is of a contemporary photograph, the surface should be unmarred. When looking at a framed print, ask that it be unframed for inspection. To make sure that the print is flawless, hold it in your hands so that light rakes over the surface. The print condition and quality of 19th and 20th century prints vary depending on the artist, medium and date. Look at as many prints from the period as possible, and at as many works by the photographer as are available, in order to determine the best print.

Signed versus unsigned photographs

In the 19th and early 20th centuries, signing a photograph was the exception rather than the rule. Since the art of photography was in its infancy, more people were making photographs than purchasing them. It wasn't until the latter part of the 20th century that the market for photography became a reality, and the practice of signing them became more common. As such, many unsigned pictures from the past are attributed to certain artists based on style, provenance or other established factors.

Today, artists sign their work, either print recto (front of print) or print verso (back of print) in pencil or archival ink.

The longevity of a photograph

Photographic materials are primarily affected by three kinds of deterioration: physical, chemical and biological. Most forms of deterioration can be avoided by cautious handling, and appropriate storage and exhibition conditions.

Of the 19th and 20th century processes, monochromatic photographs containing silver (salt prints, albumen prints, gelatin silver prints) are particularly subject to chemical reactions that modify their image appearance. Fading and color change are the typical results of silver oxidation, which is caused by a number of factors, including improper fixing or insufficient washing of prints, use of acidic mounts and/or harmful adhesives, and exposure to light, pollution and/or temperature extremes and/or humidity. The earliest salt prints require the greatest amount of care. Non-silver papers (platinum, palladium, pigment prints and cyanotypes) tend to be less vulnerable and light-sensitive.

Conventional color photographic prints made between the 1950s and the 1990s are dye-based and especially prone to light fading and color change. Processes differ in vulnerability to light, humidity and other environmental factors, depending on the dye set. Techniques using pigments, including contemporary digital prints, are generally more stable.

As with any other form of art, proper care is the only way to preserve a photograph. The better the condition of an old photograph, the more likely it is to remain that way if it is handled, exhibited and stored correctly. A specialized conservator or a knowledgeable dealer should be consulted regarding the care of photographs.

Verifying the authenticity of a photograph

Authentication begins with notations such as stamps, signature, title or date combined with a photographer's characteristic style, negative and print process, and typical method of presentation (e.g. whether mounted or unmounted). A careful examination of other photographs by the same artist will aid in spotting any uncharacteristic features of the work under consideration. If there is a dating question for a photographic print presumed to be from before the mid-1950s, the use of an ultra-violet light may be useful in testing for optical brightening agents (OBAs) introduced into photographic paper around that time (the presence of OBAs might indicate a later printing date). Finally, the absence of a signature is not necessarily significant, especially on prints made before 1900. If an unknown and unsigned photograph has a recognizable style or content, an attribution can be made.

Dealers who represent photographers or their estates are likely to have access to primary source material that will be useful in verifying a work. Or, if a dealer has had a long history of handling a photographer's work, chances are that they have accumulated experience, as well as their own archive of information, which can be helpful for verification. There is a wealth of knowledge among AIPAD dealers, and if in doubt, members have the ability to tap expertise within the organization as well as in the wider academic world.

AIPAD dealers will provide a bill of sale that can be expected to contain all pertinent information and, if available, a provenance. This document acts as a guarantee.

Deaccessioning photographs

The method of selling a photograph will depend on both the time that you have to make the sale and the amount of money sought in a return. Galleries, private dealers, auctions or museums are also possibilities for deaccessioning. If a work has appreciated considerably in value, it may be desirable to donate the photograph to a museum or another qualifying institution in order to obtain a charitable deduction for tax purposes. The advice of an expert should, of course, be sought in such cases.

What to expect on an invoice from an AIPAD dealer

The AIPAD Code of Ethics stipulates that members provide accurate descriptions on invoices, wall labels and price lists. An invoice should include the following: name of the artist, title of the photograph, negative process (when relevant), print process, dimensions, date of negative, date of print, edition number (if applicable), any known conservation treatment, and the retail price. Where any of this information is unknown, it should be specifically stated.

When relevant, an invoice should also indicate the location and medium of the artist's signature (ink, pencil, etc.), or any other notation or stamp that may be present. In certain circumstances, illustrated references and provenance may be provided.

New Media Art

New Media Art is a broad term that encompasses an ever-increasing number of technologies, styles and approaches to creating art objects. These tools may include digital codes or algorithms, platforms such as computers and the Internet, and may be manifested through monitors, robotics or conceptual spaces. While it draws on more traditional art forms, such as photography and video, New Media Art is a nebulous and often more experimental foray into the realm of technology, interactivity and mutability.

A collector should first identify a seller or dealer and determine which formats of New Media are most practical for your personal collection. New Media Art manifests itself in forms ranging from physical hard-drives and video sculptures to intangible code downloads and Internet streams. At the core of most of these works, there is a basic level of continuity. For purchasable pieces, the artwork is generally comprised of an electronic platform designed by the artist through a variety of inputs, which is then connected to a visual display—or series of outputs—for audience viewing.

Determining the value and authenticity of New Media Art

In its infancy, New Media Art's hybridity and unfamiliarity confounded many private and institutional collectors. However, its ultimate acceptance as a valid, and indeed pioneering, art form has given rise to new curatorial departments, exhibitions, high-profile commissions and general media awareness. The value of New Media Art is often determined by the artists' varying levels of museum exposure, acknowledgement by scholars in the field and influence on fellow artists.

When purchasing, you should ask for a certificate of authenticity, in which the work is signed and the edition number identified. In some cases, artists may allow replications of their work in order to safeguard against file corruption or technological malfunctions. These are still considered legitimate versions of the artist's output, but should be accompanied by documentation. Always keep the invoice and papers of provenance.

Preserving New Media Art in the age of changing technology

Perhaps the best advice is to embrace change and remember that New Media Art is constantly evolving. One option is to purchase and store multiples of physical media equipment and data players such as DVD systems, monitors or hard-drives. If the original piece's hardware malfunctions, these can be used as back-up, especially if the original versions are no longer being produced.

Another option is to periodically upgrade the format of the piece so that it runs on the most contemporary technology. An example of this might be to transfer VHS content to a DVD. The term for this process is "migration" and is often practiced within the New Media Art community.

"Emulation" is another option. Here, an older operating system is simulated on newer software or an updated hardware platform. In theory, as long as one takes care not to physically damage the original data — or inputs — of the artwork, the piece will be infinitely viewable; the original code is preserved, and is simply adjusted to run on the most cutting-edge technology of the time.

Glossary

ALBUMEN PRINT
Albumen printing is a process that uses egg white as a binder for the silver image. It was introduced in 1850 by Louis-Desiré Blanquart-Evrard and was in wide use until 1900. A thin, high quality paper was coated on one side with one or two layers of albumen into which halide salts had been dissolved. The paper was then packaged for sale. For its use, the photographer had to first render the paper light-sensitive by brushing a solution of silver nitrate onto the albumen coating. Once dry, the paper was exposed to daylight in contact with a negative, most commonly a collodion wet plate, until the image printed-out. Before being fixed, albumen prints were often toned with gold chloride solution to cool the brown color and improve the permanence of the photograph. Today, albumen prints often have yellowed highlights and a purple to brown image.

ALGORITHM
In New Media Art, an algorithm is a code, or set of rules, that creates tasks. These tasks, or programs, are then performed on a variety of platforms. Algorithms usually comprise the instructions for the manifestation of the artwork.

AMBROTYPE
Although often confused with a daguerreotype, an ambrotype is, in essence, a collodion wet plate negative; its support is therefore not metal but glass. It differs from the wet plates used for printing on paper in that the silver image was developed to a grayish white by means of the addition of mercuric chloride or nitric acid to the developer. When backed with a black lacquer or a dark textile, the grayish white portions take on the appearance of highlights, and the black backing fills in the shadows, thereby giving the image the appearance of a positive. Ambrotypes were displayed in cases and frames similar to those used for daguerreotypes in order to protect them and make them presentable. An ambrotype can be distinguished from a daguerreotype in that it will always appear as a positive no matter the angle of viewing, whereas a daguerreotype will switch from a positive to a negative depending upon the angle of viewing. The ambrotype process was in general use from 1855 to around 1865.
ARCHIVAL PROCESSING
The term archival processing describes the best practice for chemically processing photographic materials. The objective is to sufficiently fix the image and remove superfluous substances from the emulsion and substrate to insure the longevity of the photograph. The process usually includes multiple fixing baths, toning with gold, selenium, or sulfur, and effective washing.

AUTOCHROME
This ancestor of the modern color transparency was invented in 1904 by Auguste and Louis Lumière and was in use until the 1930s. Autochromes were the most successful of a number of screen plate processes that appeared on the market at the beginning of the 20th century. The glass plate support of an Autochrome holds a very thin layer of dyed potato starch particles that are held in varnish, behind which a gelatin silver emulsion is found. The starch layer essentially forms a grainy and somewhat subdued screen of minute red, green and blue filters that give the positive image its color. Autochromes are viewed either by backlighting in specially made cases or by projection.

BLIND STAMP
A blind stamp is an identification mark embossed onto the photograph or its mount. The stamp usually indicates the name or address of the photographer, publisher or distributer.

BROMOIL PRINT / BROMOIL TRANSFER
The bromoil process was popular from 1907 into the 1930s; it is still occasionally made today. Its name derives from a combination of a bromide print and a pigmented oil-based ink. The origin of a bromoil print was a gelatin silver bromide print that was bleached in a potassium bichromate solution. The bichromate salt hardened the emulsion in proportion to the amount of silver that made up the original image. A greasy ink was then dabbed onto the dampened surface of the print, and where the gelatin had absorbed water (in the non-hardened highlights), it repelled the oil-based ink. Repeated applications of ink gradually built up the image. The print hereby created was either dried or was used in a press to transfer the inked image to another surface, thereby creating a bromoil transfer. The surface of a bromoil print shows a slight relief unless it is a transfer print. Bromoil prints have a grainy image similar to that of a gum bichromate print, and selective use of a brush offers a wide range of artistic manipulation of the image.

CALOTYPE / TALBOTYPE
The calotype, or Talbotype, a paper negative process, was discovered by William Henry Fox Talbot in 1840 and patented in 1841. The process was used for about a decade until it was gradually superseded by the collodion wet plate negative. The calotype was revolutionary at the time, because, for the first time, multiple positives could be made from a single negative. This was not possible with its only contemporary rival, the daguerreotype, which is a direct process yielding a single image. A calotype was made by applying multiple coatings of salts and sensitizing solutions to a sheet of fine writing paper, exposure of that sheet–still damp–in a camera, development of the image, a fixing bath, and final washing. The transparency of the paper negative could be improved by waxing the sheet. Most commonly, salt prints were made from calotype negatives.

CARBON PRINT
This photographic process, patented by the French inventor Louis-Alphonse Poitevin in 1855, but most commonly used between 1870 and 1910, is a close relative of the photomechanical Woodburytype. Carbon prints are considered extremely permanent, since they contain no silver, but instead are made of pigments in a gelatin layer on a paper support. To make a print, a pigmented gelatin layer on a paper tissue was rendered light-sensitive with bichromate salts, exposed to a negative, then transferred to the final paper support. Finally, the non-image portions of the gelatin were washed out in warm water, leaving a relief of hardened pigmented gelatin on the paper surface. Although both Woodburytypes and carbon prints could have been made with any pigment then available, they were commonly made in the color that most closely resembled that of the photographs being reproduced—usually brown and black for carbon prints. It can be difficult to distinguish carbon prints from Woodburytypes. In both cases, under magnification there is no visible grain or halftone pattern, but the image layer of a carbon print may appear speckled with particles of pigment. When viewed at an angle, the surface of both carbon prints and Woodburytypes may appear glossier in the shadows than in the highlights. A surface relief is present, usually less dominant in carbon prints than in Woodburytypes.

CARBRO PRINT
The carbro process was mainly used for creating monochrome and color prints in the fashion and advertising industries from the 1930s to the 1950s. It combines elements of the carbon and silver bromide processes. Trichrome (or tricolor) carbro involves superimposing three color carbon prints of the primary colors yellow, magenta, and cyan, made from three separation negatives, over each other to produce a full-color print. Like a carbon print, the carbro print has a slightly raised and almost waxy surface.

CARTE-DE-VISITE (CDV)
From the mid 1850s through to the late 1870s, cartes-de-visite were extremely popular; they consisted of photographs mounted to small pieces of stiff cardboard (approximately 4 1/2 x 2 1/2 inches, the size of the formal visiting or business cards). Most commonly an albumen print, the photograph was usually a studio portrait, although scenic views, tourist attractions, celebrities, or famous works of art were also depicted. These cards were usually kept in albums.

CHROMOGENIC PRINT / COLOR COUPLER PRINT / C-PRINT
A chromogenic print is a color print made from a color negative. The emulsion has three layers of silver salts, each of which is sensitized to one of the three primary colors (red, green, and blue) and records information about that color makeup in the photograph. In the initial development, a silver image is formed in each layer. With further development, embedded dye couplers react with products of the silver development to form yellow, magenta, and cyan dyes in the respective emulsion layers. The silver is then bleached out of the emulsion, leaving only the dyes. When seen against the white stock of the photographic paper, the layers appear as a full-color image.
The first chromogenic emulsions were used in slide films in 1935, and they have by means of many improvements remained the most dominant system for color photography in transparencies, negatives, and prints since then. Type C was a chromogenic color paper marketed by Eastman Kodak Co. that was replaced, primarily by Ektacolor in the USA, in 1958, and it has not been available since that time. Type C, or C-print, is an archaic term which is often (inaccurately) generically used to identify a chromogenic print.

CIBACHROME / ILFOCHROME
See DYE DESTRUCTION PRINT.

CLICHÉ VERRE
From the French, meaning “glass negative,” this technique employed the use of a sheet of glass as a support for a drawing. The glass plate was prepared in one of two ways. Most commonly, the plate was coated with an opaque substance such as soot or paint. A pointed instrument was then used to draw on the plate, scratching through the paint. The plate was then used as a negative and printed in contact on photographic paper. The result was a design of dark lines on a white background. The other method, which produced a print of white lines on a dark background, was to draw with paint or another medium on uncoated glass. Conceived by Talbot in 1835, cliché verre has been used throughout the history of photography.

COLLODION PRINTING-OUT PAPER
See PRINTING-OUT PAPER.

COLLODION ON GLASS NEGATIVE / COLLODION WET PLATE

The collodion wet plate process was invented by Frederick Scott Archer in 1848, published in 1851, and practiced as the most popular negative process from the mid-1850s until the 1880s, when it was gradually superseded by the gelatin dry plate. A glass plate was evenly coated with collodion (cellulose nitrate dissolved in alcohol and ether, to which salts had been added), rendered light-sensitive in a bath of silver nitrate, exposed in a camera, and finally developed, fixed, and washed, all before the collodion layer dried. The resulting negative was ordinarily varnished to preserve and protect it. Although the glass was fragile and the process was awkward (having to be performed quickly and in the dark while the plate was still wet), the advantages greatly outweighed the disadvantages. Unlike the daguerreotype, the collodion process produced a negative from which multiple prints could be made. The exposure time was also considerably shorter than that demanded by other processes. Collodion wet plates were most often contact printed onto albumen papers and rendered prints with extremely fine details. Mammoth plates, usually measuring 18 x 22 inches, were the largest available, and were generally used for photographing landscapes. Most collodion on glass negatives were wet plates. Dry collodion processes were also developed, allowing for the plates to be coated further in advance of their use. However, collodion dry plate negatives never achieved great commercial success, as they produced inconsistent results and required longer exposure times than wet plate negatives.

COLLOTYPE

A collotype is a highly detailed, photomechanical image printed from a photographic plate. Patented in 1855, this process became fully commercially viable in the 1870s, and is still occasionally used today. The collotype was used frequently by publishers who wished to have a means of photomechanical reproduction that would mimic the appearance of an actual photograph. In making a collotype, a glass plate was coated with a layer of hardened gelatin. A second layer of gelatin, made light-sensitive by the addition of a bichromate salt, was added. The plate was then dried in a warm oven under strict control, causing the gelatin to swell and buckle and finally fracture into tiny fissures, forming a distinct pattern called reticulation. The plate was then exposed to light under a negative, during which the bichromated gelatin hardened in proportion to the amount of light it received. Finally, the plate was rinsed in water to remove excess bichromate. In printing, the reticulation of the gelatin surface controlled the amount of ink which was either accepted or rejected by the gelatin layer. The result was an ink image with fine detail, and a reticulation pattern only barely visible to the naked eye.

CONTACT PRINT / CONTACT SHEET

A contact print is produced by placing the negative in direct contact with the photographic paper rather than projecting the image onto the paper through an enlarger. Contact prints are the same size as their negative and show extraordinary sharpness of detail. All early photographs were made by contact printing on printing-out papers, since successful enlarging became possible only in the 1890s. Contact sheets are contact prints of rolls of film negatives that have been cut into strips and laid next to each other on the photographic paper.

COPY PRINT

A copy print is made from a negative that is produced by photographing an existing print. A photographer may choose to make a copy negative of a master print if the original negative has been lost or damaged, or if the master print was the product of numerous exposures and/or manipulations not easily replicated. In the case of a manipulated print, the photographer is likely to consider a copy negative his master negative since it alone produces the desired final print. The term is also sometimes used to describe a press print, which is not a fine art print.

C-PRINT / TYPE C
See CHROMOGENIC PRINT.

CYANOTYPE
Sir John Herschel discovered the cyanotype process in 1842. (Herschel, an astronomer and inventor, was the first to use the terms "negative" and "positive" to describe the manufacture of a photographic print. A portrait of him by Julia Margaret Cameron is perhaps his most well-known memorial today.) A cyanotype is made by applying a mixture of two iron salts to a sheet of paper, exposing this light-sensitive surface in contact to a negative until an image appears, then washing the print in water to remove unexposed salts. No fixing is required. The resulting, characteristic blue image is composed of ferric ferrocyanide, also known as Prussian blue. The cyanotype was among the very earliest permanent processes; in the 1870s, it became known as blueprint, and until recently, it was still used to reproduce architectural plans.

DAGUERREOTYPE
A daguerreotype is a photograph made by the method published by Louis-Jacques-Mandé Daguerre in France in 1839. It became the first photographic process to gain widespread commercial success. A daguerreotype was made by suspending a polished, silver-plated copper sheet over iodine (and later also bromine) vapors, thereby rendering the silver surface light-sensitive. The plate was exposed in the camera for as long as 20 minutes in daylight, which explains the often stiff posture of the sitter. Further, the daguerreotype camera produced an image that was reversed right to left unless the lens was equipped with a reversing mirror. Following exposure, the plate was developed over hot mercury fumes, resulting in an image made up of a particulate deposit of mercury-silver amalgam in the highlights, and areas of plain polished silver forming the shadows. The image was fixed and finally toned with gold chloride to improve its color, contrast, and permanence. For their own protection, daguerreotypes were kept sealed behind glass in small wooden cases in the USA, and often in frames in mainland Europe. The daguerreotype image is actually a negative; to be seen as a positive it must be held at an angle to minimize reflections. Each daguerreotype is unique and precious. This, along with its early date in photographic history, accounts for its desirability as a collectible. Portraits are relatively common, while outdoor scenes are rare. The larger, full-plate daguerreotypes were more expensive to make as well as to buy at the time, and are therefore scarcer today than smaller daguerreotypes. The making of daguerreotypes went out of fashion after the introduction of the ambrotype in the 1850s.

DETERIORATION
Photographic materials are subject to three main kinds of deterioration: physical, chemical, and biological. Physical deterioration consists of surface abrasion, scratches, dents, creases, fingerprints, stains, dirt, and emulsion breaks. Chemical deterioration frequently occurs with silver-based photographs, and can be found locally or overall: fading of the black image to lighter tones of brown and yellow is common, as is the formation of silver mirroring on the surface of the emulsion. At the same time, binders such as albumen and gelatin can yellow and darken, resulting in a print with a low contrast and loss of detail in the highlights. Biological deterioration is most evident in mold growth, particularly on gelatin-based materials, and foxing, often found on mounted albumen prints. Deterioration is generally irreversible, so it is important to avoid it by careful handling and the choice of appropriate storage enclosures and exhibition conditions.

DEVELOPING-OUT PAPER (D.O.P.)

Developing-out papers are gelatin silver papers that differ from printing-out papers in that they are only briefly exposed to light. A subsequent chemical development step is needed to make the image visible, rather than the action of light alone. From the mid 1870s onward, developing-out papers for enlargements (with a silver-bromide emulsion) came onto the market, and in 1893 a paper for contact printing (the so-called gaslight paper, with a silver-chloride emulsion) was introduced. Modern fiber-based gelatin silver papers are the descendants of these early papers. Developing-out papers can be distinguished from printing-out papers by their neutral black image tone. Other hues were achievable, however, by means of chemical toning.

DIGITAL ORIGINAL / DIGITAL IMAGE / DIGITAL NEGATIVE

The term digital original often refers to an image file created with a digital camera or digital imaging software on a computer; it is analogous to the traditional photographic negative, holding all of the information needed to create a final version of the image. The term may also refer to the digital file used to create a physical negative that can be printed in a traditional darkroom. A digital image, or digital negative, is formed within a digital camera or scanner by a chip called a Charged Couple Device (CCD) that hold a grid of light-sensitive sensor circuits. These circuits emit electrical signals, which are proportional to the intensity of the light received during their exposure. These signals are converted to a series of binary digits, which are translated into a grid of individual picture elements, called pixels, which make up the resulting digital image. The information is then stored in an electromagnetic form usually on a hard drive where it can be retrieved at a later date for printing.

DIGITAL PHOTOGRAPHY

Digital photography is evolving even as we write the definition. Until the late 1990s, the most common way to expose photographic films and papers was in a camera, or from a negative or slide in the darkroom. Today, digital printing has become part of the norm with professionals and amateurs alike. Many artists and photographers have their digital images exposed to large-format chromogenic or dye destruction paper using high-end machines commonly referred to as Lambda or LightJet printers. Digital exposure combines both digital imaging and the use of traditional photographic materials. In a digital enlarger, red, green, and blue laser beams or LED arrays are used to expose the digital image pixel-by-pixel to the photographic paper. Parallel to these print output machines, devices called film recorders expose a digital original onto negative or positive film. This photographic material is then chemically processed in the traditional manner for darkroom printing or slide viewing.

DYE DESTRUCTION PRINT / SILVER DYE BLEACH PRINT

The positive-to-positive dye destruction or silver dye bleach process is used for making prints primarily from color transparencies. The process was introduced in 1964 and marketed by several firms such as Fuji and Ilford under its proprietary names Cibachrome and after 1991, Ilfochrome. Before use, silver dye bleach emulsions already contain a full set of dyes (yellow, magenta, and cyan) held in three layers. Processing differs from that of chromogenic color materials: the silver image formed during exposure in each of the layers in the emulsion is developed and then bleached out. A proportional amount of the dye associated with that silver is also destroyed at this point, in effect selectively bleaching out a resulting image. Matte prints have a resin-coated paper base, but highly glossy prints on a smooth polyester base are more common. The colors on a glossy print are highly vibrant, and these prints are considered extremely stable. Known as a color reversal process, the paper is pre-exposed and is marked by its characteristic black margins instead of white ones.

DYE DIFFUSION PRINT
See INSTANT PRINT / DYE DIFFUSION PRINT

DYE DIFFUSION THERMAL TRANSFER PRINT / DYE SUBLIMATION PRINT
This digital print process has been in use since the mid-1980s. Due to its ease of use, relatively high image quality, and wide range of colors, dye diffusion thermal transfer (abbreviated D2T2) is very popular for producing small format color prints in a wide number of applications. In making a print, dye is transferred from a polyester ribbon that is coated with patches of yellow, magenta, and cyan dye, to a receptor sheet. By means of the local application of heat and pressure, the dye becomes mobile and diffuses into the receptor coating of the resin-coated paper support. As it cools, the dye becomes fixed within the receptor coating. As each color is transferred in precise registration, a full color image results. D2T2 prints are only distinguishable from chromogenic prints on resin-coated paper by close observation. They tend to show a slight surface relief and do not have the microscopic granular appearance that is characteristic of photographic materials. They are, however, less lightfast than photographic color prints.

DYE TRANSFER
Considered to be one of the most permanent color processes, dye transfer prints could be produced from either color negatives or transparencies, although the latter required an extra step and was harder to control. In this method of color printing, color negatives or black and white internegatives from transparencies are printed onto matrix film, a thick, gelatinous film that is processed in a tanning developer to toughen the gelatin. The matrices are then soaked in their respective cyan, magenta and yellow dyes. In room light, each of the matrices is printed in registration on a sheet of a non-light-sensitive, gelatin-coated, fiber-based photographic paper, which absorbs the dye from the matrix film. The finished full-color print is therefore made up of a combination of transferred dye images. It was introduced by Eastman Kodak in 1946 and was, for all practical purposes, discontinued in 1996.

EDITION
An edition is a designated limitation on the number of prints from a single negative. As in traditional printmaking, the edition limitation is noted in the form of a fraction with the numerator noting the print number in the series, and the denominator noting the total number of prints (e.g. 1/25). Photographs in an edition are not necessarily printed in advance, as the painstaking process involved in making one fine-art print is indeed self-limiting. Sales demand may determine whether or not the entire set of prints is ultimately produced. Therefore, the number of existing prints may be less than the stated edition size Most photographs prior to 1980 are not editioned. Research indicates that for the vast majority of non-editioned images, it is rare to find more than five copies of any one image. Most photographs after 1980 are made in a predetermined limited number (e.g. 1/25). This is not to say that all are printed in advance, as the painstaking process involved in making one fine-art print forces the photographer to make only a few from an edition at any one time. Sales demand dictates whether or not the entire set of prints is ultimately produced. Therefore, the existing number of prints is often less than the stated edition number indicates. Generally speaking, editions of prints from artists using photography are lower (e.g. 1/3) than those from traditional photographers (e.g. 1/25).

EMULATION
Emulation is a preservation technique for New Media works. As technology changes, and older versions become obsolete, some artworks' software may need new platforms on which to function. Here, updated hardware is designed to imitate – or emulate – an older version and play the software. This keeps the

integrity of the original environment, look, feel, and behavior of the artwork intact, even as the platform changes. An example might be playing a PC-compatible video file on a MAC computer.

EMULSION
A photographic emulsion is a light-sensitive coating applied to a support of paper, glass plate, or film. Most typically, emulsions consist of silver halide crystals suspended in gelatin. Following processing, the final image substance, silver, resides in the emulsion of the prints, plates, and films. The first true emulsions were used to produce gelatin dry plates in the early 1880s. Earlier processes, such as salted paper and albumen prints, as well as wet plate negatives, use a binder that holds the silver halides; this coating does not classify as an emulsion since the silver was not added to the initial solution, but rather added during processing.

ENLARGEMENT
Any photographic print larger than that of the negative from which it was made is an enlargement. An enlargement is made by projecting light through a negative held in an enlarger onto a piece of photographic paper. Successful enlargements were rare before the 1890s, and became truly practicable only with the introduction of increasingly sensitive silver bromide developing-out papers.

ESTATE PRINT / POSTHUMOUS PRINT
See PRINTING DATE TERMINOLOGY.

FACE MOUNTING
See FINISHING.

FIBER-BASED PAPER
Gelatin and collodion silver papers traditionally use a high-quality paper base coated with a baryta layer (barium sulfate, a white pigment, suspended in gelatin), which keeps the emulsion from penetrating into the paper. This produces an image with a smooth, white background. This fiber-based, or baryta paper was used widely before 1970 for all color and black and white photographic papers. With the introduction of resin-coated, or RC, paper around 1970 the use of fiber-based supports for color prints dwindled rapidly. Gelatin silver prints on fiber-based paper remain the standard for archival processed black and white photographs. Fiber-based prints were often dried to a high gloss (ferrotyped) against a heated metal drum. Once produced by a large number of manufacturers, the variety of surface textures, tones and weights were impressive. Commercial production has been drastically reduced with the advent of digital printing techniques.

FILM
Photographic film, a thin, transparent, flexible, but relatively tough sheet material, was introduced as an alternative to glass plates by George Eastman in 1884. Cellulose nitrate was first used, but it proved to be highly flammable, the reason for which cellulose acetate stock, also called safety film, became popular from the 1930s onwards. Both types of cellulosic films have turned out to be unstable in the long term. More recently, polyester film bases have been used for still photography and motion pictures. With the rise of digital imaging, the use of photographic film has become increasingly rare today.

FINISHING
This term is used to describe any form of manipulating a photographic print after standard processing as a form of its presentation. In the 19th century, typical finishing steps included trimming, pasting to cardboard mounts, burnishing, and hand-coloring. 20th century gelatin silver prints were often given a high gloss by means of drying them against a hot metal drum (a process called ferrotyping). Popular contemporary finishing methods include back mounting, face mounting, and laminating. In back mounting, prints are adhered overall to a rigid support, also referred to as a substrate, such as an aluminum-polyethylene sandwich (such as Dibond) or a hard PVC board (such as Forex or Sintra). Face mounting is the term used for overall adhering the print's image side to a sheet of clear acrylic (such as Plexiglas). A popular brand name for this process is Diasec. Laminating is the overall application of a self-adhesive plastic film to the image side of a print. This is done for both aesthetic reasons as well as for physical protection of prints that are not going to be framed behind glass.

FRESSON PRINT
The Fresson print, invented by the Fresson family in France around 1951, is reputed to be among the most permanent of color processes available. This process can be used for black-and-white prints as well. Like Woodburytype, collotype, carbon, and other similar printing methods, this procedure uses gelatin and pigment; however, the printers will not divulge their specific methods. Because Fresson printing uses charcoal as the pigment in black-and-white prints, it is sometimes called "charcoal printing". The prints have a luminous quality with rich, deep blacks. The texture changes according to the finish of the paper. Fresson prints can be identified by their grainy, pointillist appearance and luminosity. The Fresson process is currently used by several contemporary artists.

GELATIN PRINTING-OUT PAPER
See PRINTING-OUT PAPER.

GELATIN SILVER PRINT / SILVER BROMIDE PRINT / SILVER CHLORIDE PRINT
First proposed in the 1870s, the manufacturing of gelatin silver prints, black-and-white paper coated with an emulsion consisting of gelatin and silver, began in earnest in the mid-1880s. This paper is the longest lasting photographic material in continuous use. The type of silver salt suspended in the emulsion determines what method of printing is used. Papers containing silver chloride were less sensitive to light ("slower") and generally used for printing-out in contact with a negative. Papers containing silver bromide are "faster" and typically used for enlargements. Chloro-bromide papers, which contain a combination of the two silver salts, may be used for either method of printing. The ratio of the silver salts in an emulsion's formula contributes to the differing tonalities in papers, although the exposure, developing agents, and post-development toners such as gold chloride play a larger role. The tone of a gelatin silver bromide print is generally neutral black while a gelatin silver chloride print is warmer in tone. Prints on a chloro-bromide paper can lean towards a warm, brownish-black tone. Gelatin silver papers, once produced in great variety by a copious number of manufacturers, were available in a range of contrasts, weight, surface textures and sizes.

GELATIN ON GLASS NEGATIVE / GELATIN DRY PLATE
The first practical glass plates with a gelatin silver emulsion, used to create negatives, were in general use by the mid-1880s, and, due to their ease of use (the fact that they could be used dry, pre-manufactured in a factory) and high sensitivity to light, they rapidly rendered collodion wet plates obsolete. Sizes were standardized to fit the various camera types.

GLASS PLATE
See COLLODION ON GLASS NEGATIVE / COLLODION WET PLATE and GELATIN ON GLASS NEGATIVE / GELATIN DRY PLATE

GUM BICHROMATE / GUM DICHROMATE
Introduced in 1894, the gum bichromate process was especially popular during the Pictorialist period, and some artists use it today. Watercolor pigment mixed with gum arabic and potassium or ammonium bichromate is coated onto paper which is then dried. A negative is then contact-printed onto the coated paper. Exposure to light causes the gum to harden, so when the print is subsequently washed in water, the unexposed, still water-soluble areas are washed away, while the hardened gum remains. The result is a positive image. By multiple printing with differently colored pigments, this process has been used to make full color prints, but accurate registration of the subsequent exposures is difficult to achieve. Gum has also been used in combination with other processes, especially platinum prints. The process is especially suitable for obtaining painterly effects, since gum prints have a softness and graininess that, however, may be confused with the characteristics of bromoil or Fresson prints.

HALFTONE
The term halftone refers to a technique in which the original photographic image, made up of a continuum of tonal values from light to dark, is converted into a screen pattern that can be used for photomechanical printing of a reproduction of that image on a printing press. This new image is transferred to a printing plate. A halftone screen typically consists of a regular array of black dots, which vary in size relative to the density of the original, on a white background. Where the original image is darker, the halftone dots are larger, and therefore more ink will be printed. Where white or light gray is required, the dots are smaller, and less ink is transferred to the paper.

HAND-COLORED PHOTOGRAPH / TINTED PHOTOGRAPH
Since the beginning of photography, color has often been manually added to a monochrome photograph. Dyes, watercolors, oils or other paints are applied, resulting in a hand-colored photograph. Tinted photographs are those that have been given, by the manufacturer, an overall, single hue (commonly pink or pale blue) by means of adding a dye to the emulsion or binder. After the 1870s, albumen papers and collodion and gelatin printing-out papers were the most commonly tinted papers. See also RETOUCHING / SPOTTING.

INKJET PRINT / PIGMENT PRINT
Since the 1990s, inkjet has become one of the most popular digital print processes for printing digital files on a great variety of supports. In photography, digital images are most often printed on a glossy RC-base or on a matte, fine-art cotton-based paper, both of which have been specially coated for inkjet. Inkjet prints on etching-type papers are often known as giclée prints, and a great number of names, including piezo print and pigment print, have been introduced for other inkjet applications. In inkjet, tiny droplets of colored liquid ink (typically yellow, magenta, cyan, and black) are sprayed onto a support to form an image. Monochrome images are sometimes printed with carbon-based inks of varying densities of grey. Modern inkjet prints can be extremely beautiful in terms of color, tonal range, and sharpness, and they may surpass traditional photographic prints in terms of permanence. A trained eye is needed to distinguish an inkjet print from other forms of prints, since the pattern of printed ink dots is often below the resolution limit of the human eye.

INSTANT PRINT / DYE DIFFUSION PRINT
Polaroid prints, commonly referred to as dyed diffusion prints or instant prints, appear directly and immediately from the camera after the photo has been taken. Edwin H. Land invented the Polaroid process in 1947, a black-and-white negative film that was peeled off from a positive print (called a peel-apart). This new process allowed for the development of the print within the camera immediately after exposure, using rollers to squeeze together the negative, positive, and developing chemicals. In 1963, Land's discovery was extended to encompass color. The integral print system, in which all of the processing chemicals and layers were embedded in one single print material, was introduced in 1973, the immensely popular SX-70. In color materials, the emulsion on the film contains layers of yellow, cyan, and magenta dyes that are sensitive to blue, red, and green light. During development, these dyes diffuse into the adjacent positive sheet (giving the process the name dye diffusion print), which becomes the print.

LAMBDA PRINT / LIGHTJET PRINT
See DIGITAL PHOTOGRAPHY.

LAMINATE
See FINISHING.

LETTERPRESS HALFTONE
This photomechanical process is a further development of the traditional letterpress relief printing technique used for printing text. In relief printing, the printer's ink adheres to the raised areas of the printing plate and is transferred to paper in the printing press. Letterpress halftone prints first appeared in the mid-1880s. The continuous tone of the original photograph was converted into printable dots by projecting it through a halftone screen.

LIMITED EDITION
As applied to fine art photographs, the term limited edition is usually understood to mean a stated number of prints of an image in a particular size and in a particular format. When no additional photographic prints in any size or format will be made from a particular negative, that concept is usually communicated by a phrase such as "the negative has been retired" because negatives are rarely destroyed.

MATTING
A mat, or window mat, is a sheet of museum board with a window cut out of it that is used to present the print, often within a frame. Contemporary mats should be a good-quality board that is acid-free and that has passed the Photographic Activity Test (P.A.T.).

MIGRATION
Migration is a preservation technique for New Media works. This process focuses on transferring data from one format to another. Here, the physical software is updated to play on the most current technology.

MONITOR
A monitor is the device through which New Media Art is displayed or viewed. This can reference a computer, television screen, or a touch tablet device. Most commonly, a monitor refers to a screen, which may be composed of Liquid Crystal Displays (LCDs), Light Emitting Diodes (LEDs), or the older technology of Cathode Ray Tubes (CRTs).

MOUNT / SUPPORT
See FINISHING

PALLADIUM PRINT
See PLATINUM PRINT.

PAPER NEGATIVE
From the 1830s to the 1860s, a number of different types of paper negatives were in use. In general, paper negatives were made by sensitizing a sheet of writing paper with silver salts, exposure of the sheet in a camera, development, fixing, and washing. William Henry Fox Talbot was the first to create negatives on paper in his camera. He gave them the name photogenic drawings and then modified the process slightly and later termed them calotypes. These were often waxed before printing. In 1851 in France, Gustave Le Gray improved the calotype process by increasing the translucency of the negative by waxing the paper before sensitizing it. Paper negatives were used to make salt or albumen prints.

PHOTOCOLLAGE vs. PHOTOMONTAGE
A photocollage is a photographic composition assembled from pieces of different prints or negatives, closely arranged or overlaid upon each other. Sometimes graphic material is added to the combination. A photomontage can be assembled in the same manner, yet the combined elements are often re-photographed to form a new whole. The actual physical edges of the individual elements become inconspicuous in the finished work.

PHOTOGENIC DRAWING
In 1834, William Henry Fox Talbot began experimenting with placing objects such as leaves or lace on sheets of writing paper that he had previously impregnated with table salt and then coated with a solution of silver nitrate. This ensemble, pressed down with glass, was then exposed to daylight until the paper darkened sufficiently to form a visible image of the objects laid on it, essentially creating a photogram. The exposed sheet was stabilized, or rendered less light-sensitive, in a strong solution of salt water, then dried. Talbot named these prints photogenic drawings. By 1835, Talbot had increased the sensitivity to the point where he could expose the paper in small cameras, obtaining images which may be referred to as photogenic drawing negatives. Photogenic drawings were experimental and were, to the most part, not fixed, so they remain very light-sensitive and may darken or lighten irreversibly if exposed to even low levels of light. Their hues vary from reddish brown to pale yellow and lilac, depending on which salts were used.

PHOTOGRAM
A photogram is a photographic print made without a negative or a camera, by placing objects directly on light-sensitive paper and exposing the assemblage to light. Depending upon the opacity or translucency of the objects used, the photogram usually has a shadowy image of various tones, gray to white, on a dark background. Man Ray, having thought that he and Lee Miller invented this process in 1921, called them Rayographs. In fact, William Henry Talbot was the first to use this camera-less process.

PHOTOGRAVURE
A printing process based on William Henry Fox Talbot's photographic engraving patent of 1852, photogravure exploits the original image capture of photography expressed in time-tested printer's ink. A photo-sensitized metal printing plate is exposed under a photographic positive and then etched. Reproducing the original image with great fidelity, this plate is then cleaned of all photographic chemicals

and can be employed in a standard printing press, yielding finely detailed and tonally rich prints that are completely stable. The resulting image is strikingly similar to a platinum print, but under magnification the image pattern can appear grainy and soft, with dark areas and shadows standing above the paper surface. The plate leaves an indented impression, often retained in untrimmed prints. Talbot greatly improved the tonal rendition with his photoglyphic engraving process of 1858 and later innovations; in 1879, this was commercialized in Austria as the Talbot-Klič process by the Czech printer Karel Klič. J. Craig Annan and other Photo-Secessionist photographers turned to this process as a preferred form of artistic expression, with Alfred Stieglitz using it to illustrate his pioneering journal Camera Work. Commercial rotogravure expanded it to mass markets, providing higher quality reproductions than letterpress halftone. Many contemporary artists continue to pursue Talbot's difficult but beautiful process of the hand-pulled photogravure.

PHOTOMECHANICAL PROCESSES
Photomechanical processes use printing plates created photographically to produce images with ink on paper. These processes flourished in the latter part of the 19th century and were used mainly to reproduce photographs in large numbers, but also to improve upon the early photographic processes that had a tendency to fade. Some photomechanical processes are able to produce rich tonal values and are therefore sometimes the most admired prints of a particular image, prized by the photographer and collector alike. The principal photomechanical processes are collotype, photogravure, letterpress halftone, and Woodburytype.

PIGMENT PRINT
See INKJET PRINT.

PIGMENT PROCESSES
Pigment processes is a group term for the various techniques that evolved from the 1850s onward in which the image is rendered in pigment rather than in metals. Bromoil, carbon, carbro, and gum bichromate are all pigment processes.

PINHOLE CAMERA
A pinhole camera is the simplest form of a camera. A lightproof box, containing a pinhole in one surface, is pointed in the direction of the subject to be photographed. As light enters the box through the pinhole, an inverted image of the subject is projected onto a flat, light-sensitive material, such as photographic film or light sensitive paper, held in place opposite the pinhole. The film must be exposed for a long time as much less light enters through the pinhole than would through the lens of a normal camera.

PLATFORM
Platform is a term used in New Media which references a piece's architectural hardware and software framework. The hardware is made up of a piece's physical components, and the software includes any operating system~~s~~, application~~s~~, and programming languages. These units work in unison with one another, generating the artwork content for display. For example, in a video projection platform, the projector and DVD player is the hardware, and the image-generating media and programming language that runs the DVD player is the software.

PLATINUM PRINT / PALLADIUM PRINT
The platinum printing process was used primarily from 1873 to the First World War, when the need for platinum in manufacturing explosives caused the metal to be withdrawn from other commercial

applications. As a result, William Willis' Platinotype Company incorporated palladium in the sensitizer solution, replacing platinum for the most part. Willis' company continued the manufacture of commercially available papers until 1937 when the demand for the faster, more sensitive gelatin silver paper forced it out of business. Platinum and palladium prints are produced by means of the light-sensitive iron salt ferric oxalate, which, in solution with potassium chloro-platinate, is coated onto a sheet of high quality paper. Following contact printing under a negative in daylight, the paper is developed, during which the chloro-platinate salt is reduced to metallic platinum. The paper is fixed in a series of weak acidic baths and finally washed in water. Without an emulsion or baryta layer, the final print has a matte surface that was sometimes waxed to create a surface sheen. Depending on the choice of processing chemicals, the hue may range between neutral gray to warm brown. This process is enjoying a revival among contemporary photographers, since the permanence and delicate rich tones and ranges of grays of the platinum/palladium print remain unobtainable in silver prints.

POLAROID
See INSTANT PRINT

PORTFOLIO
A portfolio is a group of photographs published together, usually in a limited edition and presented in a custom-made box with or without accompanying text. It is used to distribute a body of a photographer's work, often at a more favorable price than would be asked for individual prints. A portfolio may have a particular theme, illustrate a particular time period in the photographer's career, or give a retrospective overview of his or her best images. Currently, the word is often used to describe a body of work.

POSTHUMOUS PRINT / ESTATE PRINT
See PRINTING DATE TERMINOLOGY

PRINTING DATE TERMINOLOGY
A vintage print is a print made at or near the time of the execution of the negative. Some dealers will further qualify print dates by describing them as early, modern or later. Prints that were made in the past, but after the period of time in which they would be considered vintage, should be identified as early prints. Prints made recently from the original negatives are called modern prints or later prints. Most often modern prints are made by the photographer, or made directly under his or her supervision. Posthumous or estate prints are prints commissioned by the guardians of a deceased photographer's negatives. The printer of the photographs is usually identified. They should be authenticated by the estate and are often editioned. Methods for determining the date of a print could include the paper used, the quality of printing, the presence or absence of a signature and/or stamp, and the condition of the paper surface, which can develop a patina with age. With today's technology, the use of a black light, paper fiber analysis, and other scientific tools may also assist in dating a print.

PRINTING-OUT PAPER (P.O.P.)
The term printing-out paper is used to describe a wide range of photographic papers that produce an image through extended exposure to light as opposed to chemical developing (see DEVELOPING-OUT PAPER). These include salted paper and albumen prints. Most commonly, the term is used for commercially manufactured photographic papers that were coated with silver-chloride gelatin and collodion emulsions and were quite popular in the 1880s and 1890s; they continued to be manufactured up until the 1980s. Negatives were contact-printed with these papers, resulting in very sharp and highly detailed positive images. Following exposure, the prints were toned with gold chloride for permanence

and to induce a color shift, and then fixed and washed. Printing-out papers can be distinguished from developing-out prints by their warm image tone and, being contact prints, by their high level of detail.

RESIN-COATED (RC) PAPER

Resin-coated paper has been used as a support for photographic prints since the early 1970s. RC paper is composed of a sheet of high-quality paper that has been sandwiched between two polyethylene (PE) films. The top PE layer is pigmented with titanium dioxide particles; onto this smooth, white layer the emulsion (or other type of imaging layer) is coated. RC papers may have a wide range of different surface textures. While they allow for an increase in processing speed due to the fact that the processing solutions cannot penetrate the paper support, they are not considered to be the most archival printing method.

RETOUCHING / SPOTTING

Retouching consists of manually altering, or, in the photographer's eye, improving the appearance of a negative or print. Scalpels, fine brushes, retouching pencils, and airbrush have been the most common tools to either scrape away unwanted image areas, add watercolors or other paints and inks, or chemically bleach out the silver image. Spotting is the application of small dots of paint, ink, or graphite to fill unwanted specks on a print that are often caused by dust on a negative.

SALTED PAPER / SALT PRINT

The earliest photographic prints on paper, salted paper prints were based on William Henry Fox Talbot's 1834 photogenic drawing process. Introduced to the public in 1839, the process was mainly used for printing from calotype and waxed paper negatives in the 1840s and 1850s, and it was sometimes employed to print from wet collodion glass negatives until about 1860. A sheet of writing paper was brushed over or immersed in a solution of table salt, dried, and then sensitized by applying a silver nitrate solution onto one side. This formed light-sensitive silver chloride, trapped in the fibers of the paper – there was no emulsion. It was a printing-out process, so no development was required. Placed under a negative, the paper was exposed to daylight until the positive image became clearly visible, rinsed in water, fixed, and then thoroughly washed. The surface of the print retained the matte finish of the original paper; some workers subsequently varnished or waxed the paper to add a sheen. Typically reddish brown in color, the salt print could be made more permanent and converted to a deep purple by gold toning. The salt print process continued to be used for proof prints in the field and enjoyed a revival near the end of the 19th century, when some photographers rebelled against what they perceived as the hard and inartistic glossiness of factory produced printing papers.

SCREEN PLATE PROCESSES

This term is used to describe a number of glass plate color transparency processes used from 1907 to the mid 1930s, of which the autochrome was most prominent. Screen plates render a direct positive image by means of exposing a gelatin silver emulsion through a three-color screen. The brand and date of the plate can be determined by examining the color screen under a microscope.

SILVER DYE BLEACH PRINT

See DYE DESTRUCTION PRINT.

SLIDE

See TRANSPARENCY.

SOLARIZATION / SABATTIER EFFECT
Solarization is the effect of an intense light source on photographic materials through extreme overexposure. The overexposure causes the light source to appear dark in the photograph. This reversal of tones is limited to the area of the light source, leaving the rest of the photograph unaffected. The term solarization has also erroneously come to be synonymous with Sabattier effect, a deliberate darkroom technique used to produce partial tone reversal. To achieve this effect, a negative or print is partially developed, briefly exposed to light, and then allowed to continue with the normal development process. When used in printing, the highlights and lighter midtones darken. In the borders of the areas where reversal has occurred, a distinct dark line is visible, giving the image the look of having been outlined in black.

STEREOGRAPH
A stereograph is a stiff card on which two photographs have been mounted side by side. When viewed through a stereoscope, the viewer sees a single image, which appears three-dimensional. While the photographs initially appear to be identical, they actually show a slight shift in perspective, an effect created using a dual-lens camera. The lenses are set 2 1/2 inches apart, the same distance as between human eyes. Each lens photographs what one eye would see. When viewed through a stereoscope, the two images combine, mimicking human binocular vision.

SUBSTRATE
See FINISHING

TINTYPE / FERROTYPE
The wet plate process of the tintype, or ferrotype, produces a positive image on a thin, black lacquered sheet of iron. Like an ambrotype, the sheet was coated with collodion, then rendered light-sensitive in a silver nitrate bath immediately before placing it in the camera. Development immediately followed exposure. When dry, the fragile collodion image was often coated with a clear lacquer for protection. Tintypes were mainly used for portraiture and were extremely popular from the 1850s to the turn of the century. Their popularity was largely due to the fact that they were quite inexpensive and relatively easy and quick to produce. A tintype, like other 19th century processes, is enjoying a resurgence of interest among contemporary photographers.

TRANSPARENCY / SLIDE
Positive photographic images on a transparent support, such as glass or film, are called transparencies or slides. They were generally made for projection, although hand-held viewing devices have also been used. The first color transparencies were screen plates, such as autochromes. Kodachrome, the first chromogenic transparency film, was introduced in 1935; it set a standard for quality and format, the latter being the typical 35 mm slide mounted in a small frame for projection. Transparencies became immensely popular in both amateur and professional photography in many different formats.

VINTAGE
See PRINTING DATE TERMINOLOGY

WOODBURYTYPE
Named after its English inventor, Walter B. Woodbury, this photomechanical process produced prints that were highly regarded as excellent copies of original photographs. Patented in 1864, the process was used primarily for book illustration, but single images were also sometimes issued, especially portraits of

celebrities and royalty which were made for sale in quantity. The process remained popular until the turn of the century. Woodburytypes are sometimes referred to as "permanent photographs", a term given since they contain, as image forming substance, only pigments and no silver, and are therefore not susceptible to fading. In making a Woodburytype, first a relief image was produced using the carbon print process. This relief was then molded by pressing it into a sheet of soft lead. A large number of prints could be taken from this mold by pouring pigmented gelatin into it and pressing it against a sheet of paper, thereby squeezing out the excess gelatin and forming a new relief image on the sheet. Where the gelatin layer is thickest, the image is darkest, and vice versa. Woodburytypes are most often purplish brown in color.

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Notes