

## *Light, Perception, and Photography*

---

EDUCATORS DO NOT NEED TO BE REMINDED THAT with individual cell phones and relatively affordable video cameras, an unprecedented number of lens-based images are being created and shared throughout the world on a daily basis. Students especially seem to love capturing and sharing images. Studying photographs enables them to learn about the cultural and historical context in which the images were created, develop their visual literacy skills, and explore multi- and interdisciplinary connections.

The exhibition featured in these materials, *See the Light—Photography, Perception, Cognition: The Marjorie and Leonard Vernon Collection*, is composed of photographs that serve as representative examples of the entire history of the medium. While photography as we know it today started in the early nineteenth century, the quest to record the natural world as it appears to the human eye actually dates back much further. Included here is an overview of photography as well as some of its underlying principles and manifestations, ranging from issues of human perception to its application to science and even to the way photography helps us formulate how we think about the world. Images selected from the exhibition are now part of the museum's permanent collection.

Since ancient times, humans have noticed—and described—the optical phenomenon that light coming through a pinhole will cast an inverted image on the wall of a dark room (see accompanying timeline). The ways in which humans visually perceive the world — organizing, identifying, and processing visual information— has also been studied for centuries.

Building upon this knowledge, Renaissance artists used the camera obscura (Latin for "darkened room") to capture detailed representations of the physical world. Utilizing light-sensitive chemicals, the invention of photography in the 19th century led to the ability to capture those images and brought science and art together in unique ways. As an instrument of science, the camera can support human vision with a seemingly factual record of what is seen. Yet as an artistic tool, it also has the ability to enhance and record creative vision and ideas and frame "reality" in a way that can sometimes be more akin to fiction.

In addition to the scientific and creative foundations of photography, many uses for photography have flourished over the course of its history, including documentation, scientific study, space exploration, cinema, advertising, and fine art. From its founding during the Industrial Revolution to the unprecedented numbers of photographs circulating around the world in contemporary times, the ways in which photography has been studied and used has been entwined with cultural, economic, political, and scientific changes in society.

The four images highlighted here are included in the exhibition and represent important trends in the history of photography and various scientific disciplines. Some of these themes are analyzed in greater detail in the text accompanying each reproduction. They include the desire to preserve and record the world; the artistic potential of the photographic medium; how photography came to experiment with subjects generated by the modern world and modern art in general, such as abstraction, fragmentation and ambiguity; and individualistic and romantic views of the world, with a special reverence for nature.

## *Articles of Porcelain*

William Henry Fox Talbot (England, 1800–1877)  
England, circa 1844

---

**W**ILLIAM HENRY FOX TALBOT, AN ENGLISH botanist and mathematician, is credited with the invention of the negative-positive print process fundamental to the invention and growth of photography. Talbot was an intellectual who had interests spanning the fields of mathematics, botany, chemistry, astronomy, philosophy, Egyptology, the classics, and art history.

Although he was surrounded by artistic influences his entire life, Talbot could not draw well. While on his honeymoon in Italy in 1833, Talbot became increasingly frustrated with his inability to sketch from nature using the tools many artists employed to draw detailed and highly realistic images. Since he couldn't draw, he began to think about ways that it might be possible to capture images of the world around him, and upon returning to his home in England he began a series of experiments. These led to important inventions in the development of photography.

The image *Articles of Porcelain*, made in 1844, was later included in Talbot's book, *The Pencil of Nature*. This image as well as the book demonstrated the multiple uses for photography that Talbot envisioned. Photographing porcelain (along with a companion image of glassware) allowed Talbot to showcase the medium's ability to easily capture details and reflections that would require much time to render through drawing or painting.

Talbot continued to experiment after his initial inventions in the 1830s and 1840s. While he conceived and brought about a wholly new way of making pictures, he also perfected the optical and chemical aspects of photography and learned to use the medium to make complex images of architecture, still lifes, portraits and genre scenes; in so doing, he developed techniques used later by botanists, historians, travelers, and artists.



***Articles of Porcelain***

William Henry Fox Talbot (England, 1800–1877)

England, circa 1844

Photograph, Calotype, Image:  $5\frac{3}{8}$  x  $7\frac{1}{8}$  in.

The Marjorie and Leonard Vernon Collection, gift of The Annenberg Foundation,  
acquired from Carol Vernon and Robert Turbin (M.2008.40.909)

## *The Little Novice & Queen Guinevere In The Holy House Of Almsbury*

Julia Margaret Cameron (England, 1815–1879)  
England, 1874

---

IN 1874, ALFRED LORD TENNYSON SUGGESTED TO HIS friend and neighbor, photographer Julia Margaret Cameron, that she attempt a photographic illustration of his *Idylls of the King*, a collection of poetry retelling the legend of King Arthur. Tennyson was Britain's most popular and widely read poet at the time, and Cameron, a strong photography advocate, was determined to demonstrate that photography was the equal of any form of book illustration. She worked diligently to get the models, settings, costumes, and accessories exactly right for this project; she reported to a friend that it took 245 attempts before she got 12 usable pictures.

The photograph *The Little Novice & Queen Guinevere In The Holy House of Almsbury* illustrates the section of Tennyson's poem where Guinevere, who is married to King Arthur but has fallen in love with Sir Lancelot, flees to take anonymous shelter at the convent at Almsbury.

It is there that she is befriended by a young novice (a young girl training to be part of the religious community). Cameron's photograph captures an intimate and quiet moment between a sleeping or resting Guinevere and the little novice at her side. Literary and biblical figures and stories were the subject of many of Cameron's photographs, and emotional and physical bonds between women form the basis of many of Cameron's strongest images.

Wanting to challenge the mechanical, technical, and descriptive photographs pervasive at the time, Cameron strove to create photographs that would tell stories and express feelings. Elevating photography beyond description, she often used atmospheric lighting, a soft focus, and imprecise printing methods to create expressive images.



***The Little Novice & Queen Guinevere  
In The Holy House Of Almsbury***

Julia Margaret Cameron (England, 1815–1879)  
England, 1874

Photograph, Albumen print, Image: 13½ x 10½ in.

The Marjorie and Leonard Vernon Collection, gift of The Annenberg Foundation  
acquired from Carol Vernon and Robert Turbin (M.2008.40.378)

## *Paris, 1929*

André Kertész (Hungary, active United States, 1894–1985)  
France, 1929, printed circa 1970

---

IN THE EARLY TWENTIETH CENTURY, THE EIFFEL TOWER became a primary object of inspiration for a generation of avant-garde painters, poets, architects, filmmakers, and historians seeking symbols of the new spirit of their age. André Kertész, a photographer living in Paris, made several studies of the Eiffel Tower after moving to Paris from Budapest in 1925. This photograph by Kertész, *Paris, 1929*, stands as a unique vision for this time. Whereas some photographers pictured the tower as a part of Paris, others organized their images into dislocating patterns of abstract details and shapes. Here, Kertész incorporated shadows of the ironwork with the pedestrians and tourists at the base of the tower, combining his sophisticated understanding of composition with an intriguing and poetic image.

Kertész, like many photographers working between the world wars, sought to create images that reflected their increasingly modern, fast-paced, and somewhat fragmented society. Through abstract compositions made of non-traditional viewpoints, flat planes, geometric shapes, and radical cropping, these photographers created distinct images. Kertész had a sophisticated understanding of composition, yet often created images infused with personal meaning by capturing lyrical moments in the ordinariness of daily existence.

Born in Budapest, Hungary in 1894, Andor (later André) Kertész served in the Austro-Hungarian army during World War I. The photographs he took of the everyday lives of his fellow soldiers started his journey towards a career in photography, which lasted over seventy years. Eventually, Kertész moved to the United States and worked for several prominent magazines, including *Harper's Bazaar*, *Vogue*, *Liŕe*, and *House and Garden*.



***Paris, 1929***

André Kertész, (Hungary, active United States, 1894–1985)

France, 1929, printed circa 1970

Photograph, Gelatin-silver print, Image: 7¼ x 9¼ in.

The Marjorie and Leonard Vernon Collection, gift of The Annenberg Foundation  
acquired from Carol Vernon and Robert Turbin (M.2008.40.1160)

© André and Elizabeth Kertész Foundation

## *Surf Sequence*

Ansel Adams (United States, 1902–1984)  
United States, 1940, printed after 1972

---

**A**NSEL ADAMS, BEST KNOWN FOR HIS SPECTACULAR photographs of natural scenes, was also a respected leader and spokesman both for photography as a fine art and for environmental preservation. Born in San Francisco in 1902, at the age of 14 he visited Yosemite with his family for the first time. He instantly fell in love with the majesty and beauty of the Sierra Nevada Mountains, and returned there at least once every year of his life. Although Adams had trained as a concert pianist as a boy and young adult, his love of photography, especially photographing expansive and beautiful wonders of nature, became his lifelong passion and career.

Although he is best known for his images of mountains, it was during a trip along the Northern California coast in 1940 that Adams made this innovative series of five

photographs. *Surf Sequence* was made when Adams turned his camera down at the surf line. Capturing the quiet and poetic movements of the water along the sand, they were expressly made to be seen together as a series.

Adams was a master of the technical aspects of photography, yet he insisted on the medium's unique combination of mechanical execution and creative activity. By age 18 he was already experimenting with composition, texture, and light in his photographs, and refined his method on long expeditions along and with the Sierra Club. Uninterested in emulating painting or other traditional media in his photography, he instead looked back to photography's early practitioners, especially those who had surveyed the American West. An influential teacher and author, Adams approached photography as an interpretive activity.





***Surf Sequence***

Ansel Adams (United States, 1902–1984)

United States, 1940, printed after 1972

Photograph, Gelatin-silver print, Image: 11 x 14 in.

The Marjorie and Leonard Vernon Collection, gift of The Annenberg Foundation  
and promised gift of Carol Vernon and Robert Turbin (M.2008.40.49.1-5)

Photograph by Ansel Adams © 2013 The Ansel Adams Publishing Rights Trust

# Light, Perception, and Photography

## Timeline

---

5 <sup>th</sup> Century BCE	Chinese philosopher Mo Ti recorded the creation of a device in which the light rays of an illuminated object pass through a pinhole into a darkened room and result in an inverted but otherwise exact image of the object. He referred to this device as a "locked treasure room."	1849	David Brewster invented the lenticular stereoscope (device for viewing a pair of separate images, one for each eye), and a binocular camera, leading to a craze for stereoscopic photography.
4 <sup>th</sup> Century BCE	In Greece, Aristotle described viewing the crescent shape of a partially eclipsed sun projected on the ground through the leaves of a tree, thereby describing the optical principle of a pinhole camera.	1861–65	The American Civil War was the first conflict to be thoroughly photographed. The thousands of photographs made of the Civil War brought images of the realities of modern warfare to the general public.
10 <sup>th</sup> Century CE	Arabian scholar Ibn al-Haytham Alhazen provided early analysis of various optical phenomena through his observations that an image was sharply defined when the aperture through which it was projected was small, and that the image became diffused as the hole was enlarged to admit more light.	1860s	Photography became a significant tool for the United States government and railroad companies in the efforts of survey teams to document relatively unknown parts of the continent. For the first time, landscape documentation emerged as a viable livelihood for a small group of American photographers.
1490	Leonardo da Vinci provided clear descriptions of the camera obscura (Latin for "darkened room") in his notebooks. Camera obscuras had become familiar to scientists, magicians, and artists during the Renaissance as many descriptions of the device are found from this period.	1872	Eadweard Muybridge was commissioned by former California Governor Leland Stanford to photograph his horse trotting. Refining the use of shutters to record actions during the split-second when the shutters were open, Muybridge's studies in motion throughout the 1870s—of horses galloping on a track and of men vaulting over poles—are considered the precursor to the invention of motion pictures.
1839	Multiple inventions were made public that laid the groundwork for photography. In France, Louis Jacques Mandé Daguerre unveiled detailed, unique, and lasting images on sheets of silver-plated copper; these images contained such accuracy that they were called "a mirror with a memory." The process came to be called "daguerreotype." In England, William Henry Fox Talbot presented calotypes. These were images on paper created from a negative made by covering paper with a silver salt solution and exposing it to sunlight. (The term "calotype" is from the Latin phrase that means "beautiful impression.")	1880s	In Europe and the United States, groups of photographers established societies that were devoted to promoting photography as fine art. Known as Pictorialists, they created highly expressive images. The subject matter of their photographs often drew from mythology and literature and their photographic techniques included soft focus imagery, atmospheric lighting, and printing on textured paper. In addition to creating groups, these photographers utilized exhibition spaces and published magazines to increase the awareness of photography's artistic potential.
1844	Talbot published the first of six installments of his book <i>The Pencil of Nature</i> .		

- 1888 George Eastman Kodak introduced the hand-held Kodak camera and marketed it in the United States. The first camera designed for recreational purposes, it provided a relatively inexpensive way to take pictures. Amateur photography flourished in the following decades as thousands of people began taking snapshots of the world around them.
- 1925 A small, light, and fast camera called the Leica allowed photographers to capture the activity of street life with greater accuracy and imagination.
- 1925 László Moholy-Nagy published *Painting Photography Film*, which advocated for the camera as a modern graphic tool and the creative use of new visual media—such as photography and film—within the global and mechanical modern world.
- 1932 In California, a group of photographers who shared a common photographic style based on precise images of natural forms and found objects created a group called f/64. The name referred to the smallest aperture (“f-stop”) setting on a large format camera and the one which allows a great depth of field. These photographers advocated for a realist aesthetic with sharp focus images and utilized contact printing on glossy paper.
- 1935 During the Great Depression, the Farm Security Administration of the U.S. government commissioned eleven photographers to travel throughout the country and document the conditions faced by farmers who suffered through drought and economic depression. Pictures by photographers such as Dorothea Lange, Arthur Rothstein, and Walker Evans have become enduring images of this period.
- 1936 The cover of the first issue of *Life* magazine features a photograph of Fort Peck Dam by Margaret Bourke-White, whose career included images ranging from industrial photography to portraits of world leaders.
- 1955 Edward Steichen’s landmark exhibition *The Family of Man*, highlighting the universality of human experience through over 500 photographs, opened at MoMA and subsequently toured the world for eight years.
- 1962 John Szarkowski succeeded Edward Steichen as curator of photography at MoMA. His 1966 exhibition *The Photographer’s Eye* (and publication by the same name) showcased the range of photography through its history.
- 1976 Los Angeles residents Marjorie and Leonard Vernon began to collect photography.
- 2008 LACMA acquired the Marjorie and Leonard Vernon Collection of photography.

### About the Vernon Collection

In 1976, when Los Angeles residents Marjorie and Leonard Vernon began to collect photography, it was not widely collected by major museums or fine art collectors. The Vernons built a collection of some 3,600 photographs spanning the entire history of photography through careful research of photographers and of the medium and through their understanding of the centrality of photography in modern visual culture. Championing photography as a significant part of human expression, the Vernons fostered a community of photography enthusiasts and generously shared their home and their knowledge of photography with this expanding circle. In 2008 the Vernon collection of photography became part of the permanent collection of the Los Angeles County Museum of Art, thereby allowing the museum to present the history of photography alongside the museum’s larger encyclopedic collection of art from many cultures and time periods.

### Sources

Britt Salvesen, *See The Light—Photography, Perception, Cognition: The Marjorie and Leonard Vernon Collection* and Naomi Rosenblum, *World History of Photography*. Third Edition.

### Credits

These curriculum materials were prepared by Elizabeth Gerber and Jennifer Reid, and designed by Jenifer Shell. © 2014 Museum Associates/LACMA. All rights reserved.

Evenings for Educators is made possible The Rose Hills Foundation, the Thomas and Dorothy Leavey Foundation, and the Kenneth T. and Eileen L. Norris Foundation.

Education programs at the Los Angeles County Museum of Art are supported in part by the William Randolph Hearst Endowment Fund for Arts Education and the Margaret A. Cargill Arts Education Endowment.