

A Brief History of the Photographic Image

by Bob Rogers

Looking at history is like walking in the woods. Nothing one sees is as clearly defined as one would like to believe. Categories of phenomena do not have clearly defined edges. We cannot point to anything and say that it is completely living, nor can we point to anything and say that is completely not living. A tree may be in full bloom, but some of its branches may be broken and dead, the ends crumbling back into earth. No rock is so barren as to be without some creature attached to it, breaking off bits and transforming them into soil. No piece of soil is completely barren or without some life budding from it. The woods are in a constant state of change. Everything we stop to look at is on its way to becoming something else. So, too, with history. We would like the Nineteenth Century to have ended at midnight, December 31, 1899, however it is not so simple. The future is implicit in the past, and the past lives on in the present.

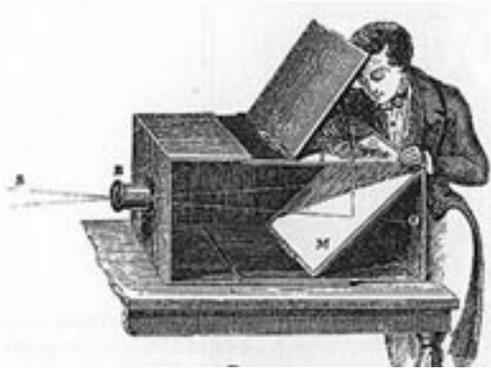
So, too, it would be convenient to say that the history of photography begins in 1826 with the discovery by Henry Fox Talbot of the chemical procedure which allowed one to permanently fix the image created by the lens, remove it from the camera, and look at it under normal illumination. However, the historical forces that gave shape to that discovery were at work for many hundreds of years and are clearly apparent in the subsequent uses of the camera and the imagery that it has been used to produce.

The Development of Perspective and With It, Faith in the Realism of the Lens

Over the centuries, artists have used perspective drawing as a means of describing the three-dimensional world on a two-dimensional surface. It

was only in the Nineteenth Century that the manufacture of perspective-based images, gained independence from the human hand and with it attained the reputation for transcendent objectivity. However, perspective is a visual language, fully intelligible only to those fluent in it. And the camera is an automated perspective machine, touted as a faithful pencil, but which has been used since its invention, like the painterly process in which it is rooted, to mirror collective and private visions of reality.

Artists as well as others had been looking through cameras to make images since the Renaissance. Up until the beginning of the Nineteenth

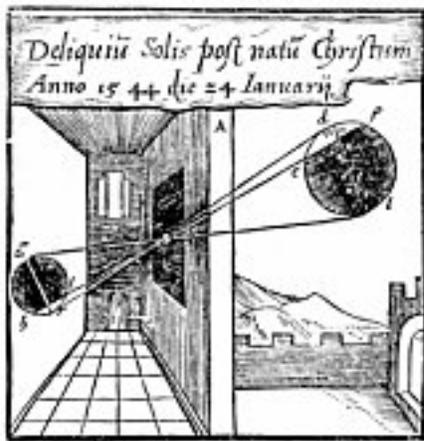


Century, the manner in which the camera's image had been preserved was by copying or tracing the image by hand onto paper or canvas as it appeared on the ground glass. Certainly, Talbot's discovery, like the other technical innovations of the Nineteenth Century transformed society. Looking back from

the perspective of the future, we feel comfortable pointing to that moment as the nexus of change. However, Talbot's discovery transformed not what people did, only the way they did it. People wrote before word processors and typewriters, spoke before telephones, moved around the planet before cars and planes, and made images with cameras before photography. What the innovations of the Nineteenth and Twentieth Centuries did was to dramatically increase the pace and scale in which these activities could be accomplished. This in itself is not insignificant, but is only a small part of the story and even less of an explanation for the consequences of these changes.

Our expanded capabilities for efficiency do not necessarily imply our creative superiority. We are not necessarily better, or better off for developing these technologies than those times and people who did not. The very idea of "progress" itself has a history that begins with the conflicts of religious and secular ideologies of the Middle Ages, and the universal adoption of the concept may not be necessarily of unqualified benefit.

Historians note that photography was "invented" in 1826, but just as significant to understanding that moment is the fact that enough technical information to create a photographic process had already been known in the west for over two thousand years. Aristotle (384-322 B.C.E.) taught that light rays were emitted from objects and traveled into the eye. Knowledge of lenses is equally ancient and examples of quartz crystal or glass lenses have been found in the ruins and Nineveh and Pompeii. As for emulsions, Aristotle was aware that light had the capacity to alter color having observed in his writings the effect of light on plants and the coloring of human skin. Vitruvius, a celebrated Roman architect of the



first century, like many of his fellow countrymen was well aware of the destructive power that light had for certain dyes. He noted in his "De Architectura" that "(cinnabar)... When used for trimming draperies in rooms not open to sunlight... will keep its color unchanged; but in public places... and in similar places where the light of the sun and moon has access, it spoils immediately when exposed to their rays and

the color loses its vividness and brilliancy, turning black." The ancients also were aware that light was crucial the formation of a purple dye that was highly prized for its beauty and vividness.

The camera too, has been around in one form or another for many hundreds of years. Aristotle was also aware that a small pinhole would act as a lens and project an image. Arab scholars reported the application of this principle to construct a device that could be used to view eclipses of the sun. By projecting an image of the sun onto a clean flat surface the eclipse could be watched safely. The first mention of such a camera dates back to 1038, by the Arab scholar Ibn al Haitam (d. 1039) who stated, "The image of the sun at the time of the eclipse, unless it is total, demonstrates that when its light passes through a narrow, round hole and is cast on a plane opposite to the hole it takes on the form of a moonsickle. The image of the sun shows this peculiarity only when the

hole is very small. When the hole is enlarged, the picture changes..." Leonardo Da Vinci also described and documented the use the principles of the camera, and in 1588, the Italian painter, Giovanni Baptista della Porta published a discussion of the use of a camera obscura with a lens.

Why then, did the technical knowledge of the camera suddenly appear



in the west during the Renaissance, where it was almost immediately applied to painting, transforming the very look and approach to the painted surface? And then why again, four-hundred years later, within a few years of each other, did several distinct techniques for chemically preserving the image created by the lens and in use in the visual arts for centuries suddenly appear? To answer this, we must look at the history of realism, as it applies to the visual arts in the west, for western painting and ultimately photography, find their roots in the growing necessity to describe the three-dimensional world on a two-dimensional surface in a manner that

would be both realistic and mathematically consistent.

Each culture produces a graphic system that reflects what is important and significant to that culture. The Egyptians, for example, employed a flat two-dimensional space, very different from the one used by the Japanese. The Japanese, (left) in turn used a system of parallel lines in an oblique cube, very different again, from the system employed by the Romans or Byzantine Christians, or the civilizations of Africa. In the west, photographs are perceived as the uncontaminated product of the mathematics of optics and the chemistry of emulsion -- the result of a consistent, eternal, Newtonian universe making images of itself. However, the principles that underlie the spatial constructions of western perspective, (and therefore photography) only represent our particular

historical/cultural orientation and not, as we like to think, a universal system.

If we assume that these other cultures did not develop a spatial system like ours because they had no need for it and not that it was beyond their capabilities, we must ask ourselves, why then was it needed in fifteenth century Italy? And why was its automation through photography, so desirable in France in the middle of the Nineteenth. The answer begins in the fundamental structuring of European society after the Middle Ages.

Medieval Europe was a time of transition. The world was slowly expanding. The crusades had opened up the distant parts of the world in the minds of the Italians and voyages of discovery, like those of Columbus and Marco Polo were bring back treasures, both material and intellectual, from the vast world out beyond the geographic confines of continental Europe. After the Black Death of the mid-Fourteenth Century, early capitalism, and in particular a *nouveau riche* class emerged. Further, as towns and cities grew, building and construction resulted inadvertently in the excavation of the classical past that lay just beneath the surface of medieval Italy. The ideas of the Greeks and Romans re-emerged along with their statuary and buildings giving new stimulus to the emerging natural sciences. The discovery of distant lands was a powerful stimulus to develop navigational techniques that would allow sailors to travel beyond the sight of land and so find faster, shorter and more economical routes to the riches of the east. To do this safely required knowledge of astronomy, math, geography and physics.

Yet the development of a new worldliness at the end of the medieval period did not occur without resistance or conflicts. The Church was the principle authority, both secular and theological during the Middle Ages. The new interest in the material world went contrary to the teachings of the Church, which taught that the world was profane and should be shunned. As a consequence of its influence, many who had collected wealth through the growing opportunities of trade and commerce that existed after the Thirteenth Century, fearful of eternal punishment for having acquired wealth by often unscrupulous methods, gave away much

or all of it at their deaths as a way of disowning and cleansing themselves of the taint of the material world. In 1354, for example, twenty-one Florentine bankers were fined by the church for usury. However, as this middle class grew in size, wealth and power, it eventually found the rigid morality of medieval Christianity too confining and restrictive. By the Fifteenth Century, the material world was once again here to stay in the minds of Europeans and particularly the Italians, who as a consequence of their seamanship and excellent harbors were at the forefront of navigation, exploration and trade.

The conflicts of this emerging secular, courtly ruling class with the traditional values of the church fathers was expressed in the art of the period. By the Fifteenth Century art, too, had become increasingly secular as the demands and interests of the middle class became increasingly worldly. Art was no longer commissioned exclusively for the church or religious associations. Not only did secular genres appear such as narrative painting and portraiture, but specifically religious pictures became full of secular motifs illustrating the fluidity of the line between old and new values. By the beginning of the Fifteenth Century there was a significant intrusion of secular motifs and subjects into works presented by patrons of the Church. The desire for posthumous fame slowly supplanted an interest in personal salvation as the motive behind endowments of church art. As a consequence of the growing commercial wealth and political power acquired by the upper middle class, the move into the natural, secular world became irreversible. Ultimately the best strategy of the Church was one of accommodation.

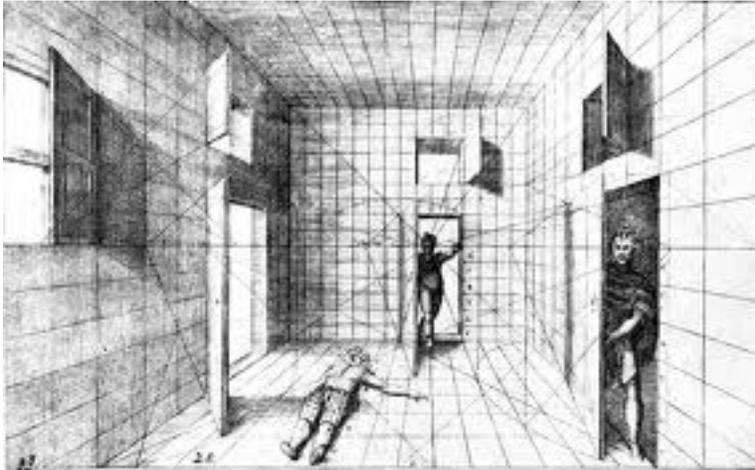
To this end, there evolved a means by which both traditional Catholic dogma and a secular, materialistic worldview could coexist. The foundation for this was laid as early as the middle of the Thirteenth Century when theologians discovered the ontological warp that would allow this potential heresy to occur. Implicit in the writings of Roger Bacon in 1260 was the notion that there was nothing to contradict a belief in the union of mathematical logic and God's divine grace. As he stated in his *Opus Major*, "... Oh, how the ineffable beauty of the divine wisdom would shine and infinite benefit would overflow, if these matters relating

to geometry, which are contained in the scriptures, should be placed before our eyes in their physical form."

Later, the English mathematician, Thomas Bradwardine, reflected on the idea, increasingly popular with Italian painters of the Fourteenth and Fifteenth Centuries, that the theoretical, infinite space of mathematicians and the physical space one sees before one's eyes are one and the same. The material world itself in this way was ready to become a symbol of God, and mathematical perspective emerged as a system that allowed artists to represent this material world in terms of the divine grace of pure mathematical logic. This idea re-emerged in the Nineteenth Century in the romanticism of thinkers such as Emerson and Thoreau, and scientists such as Louis Agassiz and Clarence King who saw the world as having been created by a thought in the mind of God. This emphasis on the Mind, allowed nineteenth century scientists and explorers, like Renaissance artists and thinkers, to view their enterprises as being harmonious with the religious beliefs of their time. Even decades after Darwin published *The Origin of the Species* and overthrew traditional religious arguments of design, thinkers argued that a scientific understanding of nature was compatible with traditional teleology. For Italians of the Fifteenth Century, that the world could be described by such a divinely inspired system served to confirm the spirituality of the secular and anticipated the emergence of the Neo-Platonists and their struggles to harmonize Greek and Roman pagan mythology with traditional Christian iconography. It was in this way that the values of the new capitalism of Italy were able to survive until the late Fifteenth Century in an extraordinary symbiosis with traditional medieval religious faith.

To a humanist who saw the visual world as one ruled by mathematical law, the city of Florence in the Fifteenth Century was a microcosm of God's divine order. Not only were paintings, sculpture and architecture constructed in accordance with the purity of theologically sanctioned geometry, but the construction of farming terraces was carried out according to those same mathematical principles. Not only were the terraces a testimony to the harmony between mathematical order and

God's patrimony, but their efficiency resulted in increased profits, further reinforcing an the implicit assumption of God's approval of the accumulation of wealth and secular power.



In all theological fields, particularly in the sciences, antiquity provided support for and accelerated this advance. For the upper-middle class there was soon no contradiction between the cult of the antique, a scientific spirit, and religious sentiment. The

revival of antiquity went hand in hand with the evolution of mathematical sciences. Many proportions, including the Golden Section, were derived from Greek concepts, such as those stated in Vitruvius' *Symmetry*, and had been preserved and transmitted clandestinely through the Middle ages by Gothic architects.

The mathematical basis of Renaissance perspective had its roots in Fourth Century BCE Greece, in the *Optics* of Euclid, who applied the laws of geometry to the problem of how people see. Based in both antiquity and mathematics, perspective was the perfect tool to express in the visual arts the concepts of contemporary theologians and which had been foreshadowed by Bacon in the Thirteenth Century. Mathematical perspective became a reality with the publication of Alberti's treatise, *Della Pittura*, in 1435. Using the "sacred" principles of geometry, Alberti published the system introduced earlier by Filippo Brunelleschi, to describe objects in the three dimensional world. Alberti described sight as a visual pyramid extending from the eye to the object. He said that a painter could use this understanding of sight to construct a painted image on the surface that intersects that visual cone, as if that surface were "of painted glass". The result would be that an observer looking "at a picture, done as I (Alberti) have described, will see a certain cross section of a

visual pyramid, artificially represented with lines and colors on a certain plane according to a given distance, center and lights".

The Camera Obscura was the ideal tool to automate the creation of this mathematical space and was employed by countless painters. It has been suggested that Vermeer was so faithful to the representation of the lens that his paintings are have areas of clarity and "soft focus" as would a photograph. The chemical innovations of the Nineteenth Century served only to replace the expressiveness of painter's brush with the anonymity of chemical emulsions.

Daguerre claimed his Daguerreotype was a "chemical and physical process which gives nature the ability to reproduce itself." Or, as Francois Argot, the eminent French astronomer declared to the Academie des Sciences in 1839, Daguerre had discovered, "special plates... on which everything that the image contains is reproduced down to its most minute detail.... In a word, in Daguerre's camera, light itself produces the shapes and proportions of the objects outside it, with an almost mathematical precision." In an age of rationalism, reason and logic had transcended the fleshy corruption of manual dexterity; light itself replaced the human hand, ("the faithless pencil", according to Fox Talbot) in the construction of vanishing point and horizon line. For consumers of photographic imagery, because of its foundation as a vehicle for the expression of the "mind of God", it is still axiomatic that optics produce images which are transcendently truthful.

As a result, from Delaroches's histrionic "painting is dead", to the modern media hyperbole "unretouched photo", photography has been touted for the truthfulness of its imagery. Explorers and adventurers from Vroman and the Bison Frères to the astronauts, and scientists from Bentley and Muybridge to Harold Edgerton have used the resolving power of the lens to record the mysterious ways of foreign lands or the universe beyond the limits of human sight. The stereopticon, which created a three-dimensional image, enabled photographers such as Matthew Brady to heighten the illusion of realism. However, there is no transcendent objectivity to lenses. Even the most dispassionate documentary works of

photographers such as Muybridge, Atget, Sander or Evans are seen as objective only because the photographer's harmony with his audience's consensus of reality. It was the public's faith in the inherent realism of optics and the predictability of chemistry that made, for example, Muybridge's motion studies as startling and revolutionary as they were. Frederick Remington's exuberant paintings and sculptures romanticized the "wild west", but William Henry Jackson's understated nostalgia was accepted as fact, and gave credibility to verbal reports of otherwise incredible natural wonders.

Yet this celebration of the camera's new-found authority was not universal. Although painters had used the camera for two centuries before the discoveries of Niepce and Talbot, by painting or tracing the image it created many did not share Argot's enthusiasm for this new device. Painters such as James McNeil Whistler condemned photography's reproductive accuracy. "The imitator is a poor kind of creature," he wrote. "If the man who paints only a tree, or flower, or other surface he sees before him were an artist, the king of the artists would be the photographer."

But even the power of the Academy could not stop progress. With Niepce and Talbot's wedding of the camera obscura to nineteenth century chemistry, ethereal geometry was transubstantiated into images of silver, gold and platinum, and with the "demise" of painting, photography fell heir to the duties and traditions of fifteenth century art: the faithful recording of "reality".

The Ideological Roots of Photography

Technical innovation alone is not always sufficient to produce substantive change. The social climate, the cultural need must also be present. The social environment that was fertile for the development of a photographic process took centuries to develop and is the result of many cumulative social changes. Each century since the Fourteenth Century made unique and significant contributions to the social environment from which photography emerged.

Europe in the Fourteenth Century was economically primitive. War, depression, and plague, which wiped out one-third of the population, had weakened it considerably. In its darkest days it looked like western civilization might, indeed, collapse. Though the prestige of the Church had declined somewhat it still held sway over men and women's eternal salvation and that gave it enormous secular power.

Yet the Fourteenth Century also saw the rise of capitalism and with it a growing interest in the material world. Italian traders sailed to the east, following the routes laid down by Marco Polo, and brought back to Europe the riches of the Orient. Coffee was imported from Mocha in southwestern Arabia. Learning began to move out of control of the monasteries and the church. Universities were founded in Cologne and Heidelberg, Grenoble, Rome, Orleans and Pisa. With the development of profitable trading routes to the east, the need for reliable and efficient navigation and sailing techniques spurred a renewed interest in the natural sciences, geometry, physics and chemistry. The construction projects, that resulted from this increased wealth, especially in Italy, unearthed the classical past of southern Europe and gave rise to a renewed interest in the philosophy and sciences of the Greeks and Romans, including Aristotle and his discourse on optics and vision.

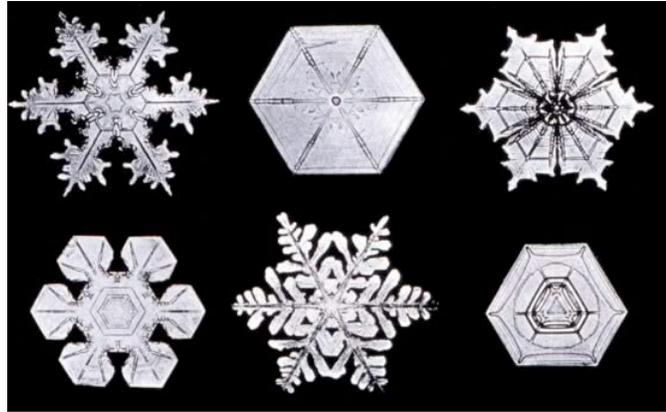
Particularly in Northern Italy, the Fifteenth Century was a period of growth, creativity and exploration. The Church was forced to concede to the emerging worldliness of its constituency or face an unwinnable contest for political and social dominance. The growing material wealth of Italy was evidenced by the fact that the church itself acquired its own banking interest. In 1414 the Medici Banking family of Florence became bankers to the papacy that had begun to amass considerable material wealth and political power. It was the religious ideology underlying the mathematical basis of perspective that allowed the asceticism of traditional Catholicism coexist to exist with a worldly and materialistic middle class.

The growing business interests of the middle class also exerted a tremendous push for scientific discoveries that would be useful to trade

and navigation. The first terrestrial globe was constructed by geographer Martin Behaim and by the end of the century, Columbus discovered America looking for a more profitable sailing route to India. In the arts it produced Renaissance perspective, and with it the belief that optics based as they were on mathematics, reflected the orderly working of the mind of God -- faith in the realism of the lens. It was this faith that mathematical geometry mirrored the mind of God that formed the basis for our faith in the realism of photography. A faith that is expressed in the very word Daguerre used for his camera's lens: "objectif".

The impulse towards reconciling the secular and the sacred, initiated by the conflicts of the Middle Ages came to full flowering with the Protestant reformation. The Sixteenth Century saw the rise of Protestantism, and particularly significant for the West, Calvinism. Here again mathematics played an important role. There was a decided attraction on the part of Protestant asceticism for empiricism, particularly empiricism based in mathematics. According to the sociologist Max Weber, "For the attitude of Protestant asceticism the decisive point was ... that just as the Christian is known by the fruits of his belief, the knowledge of God and His designs can only be attained through a knowledge of His works. The favorite science of all Puritan, Baptist, or Pietist Christianity was thus physics, and next to it all those other natural sciences which used a similar method, especially mathematics. It was hoped from the empirical knowledge of the divine laws of nature to ascend to a grasp of the essence of the world, which on account of the fragmentary nature of the divine revelation, a Calvinistic idea, could never be attained by the method of metaphysical speculation. The empiricism of the seventeenth century was the means for asceticism to seek God in nature. It seemed to lead to God, philosophical speculation away from him."

Newtonian physics with its emphasis on orderly laws is rooted in the notions of Calvinistic predestination. For unlike the Old Testament story where Eve sinfully plucked the apple of knowledge from the Tree of Life, in the myth of Newton, that the apple, impelled by immutable laws of nature, fell innocently onto his head. His famous "Law of Inertia", also supports Calvinist doctrine making it possible for the universe to go on



For Wilson Bentley, a Vermont farmer, photographing snowflakes was a life-long passion

indefinitely once the laws of nature had been set into motion by God at the Creation. God in Newton's Protestant schema was a thing of the past, and worship became limited to the adoration and understanding of His works. With the rise of Protestantism and the emergence of a *nouveau riche* class art, too, moved out of exclusively the realm of the religious. Secular genres such as portraiture and genre painting were introduced and achieved broad popular appeal. These kinds of imagery eventually would be ideally suited to the photographic process that is entirely dependent on material reality for its subject matter.

The Seventeenth and Eighteenth Centuries saw the development of Enlightenment philosophy. The idea that science is measured and rational is a product of the Enlightenment: The Age of Reason. Its leaders included several French philosophers: Descartes, Diderot, Rousseau and Voltaire. Philosophers of the Age of Reason believed that humans have a unique advantage over all other creature because they can reason. To this end, Enlightenment philosophers explored issues in education, law, philosophy, politics, and attacked what they perceived to be tyranny, social injustice, superstition and ignorance. Many of their ideas contributed directly to the American and French revolutions in 1776 and 1789. For these thinkers, reason was thought to be the power that enables us to "see" mathematical truths just as clearly as we see material objects by visual perception. However, visual perception yields only particular or contingent truths. Reason, on the other hand, yields universal or necessary truths. Philosophers of the Enlightenment believed

that it was self-evidently true that government should protect the property of its citizens.

In the 1800's the German philosopher Karl Marx argued that this view merely reflected the perceptions of the middle and upper classes. These people own the property, Marx said, and naturally want to preserve it. A century later, Sigmund Freud stated that what we like to consider as "sound reason" for our actions are only excuses. We act the way we do, he said, because of our subconscious drives (id). We then attribute socially acceptable motives to ourselves to please another part of our subconscious, the super ego and through that, indirectly, our parents and our society. Although social philosophers such as Marx and Freud attacked the conclusions of the Enlightenment philosophers, they fundamentally adhered to their basic tenet that saw the rational mind as capable of perceiving and understanding the workings of an orderly, rational universe. Where they differed substantially was in assigning the ordering principle--Marx seeing it in economics, and Freud in the unconscious impulses of the human mind.

A belief in an orderly, rational universe, as espoused by Enlightenment thinkers still today underlies our most fundamental thinking and, not surprisingly, our belief that the lens is objective. Taken to its logical conclusion, we believe that because photographic processes are based on



Hubble Telescope, NASA; Remnants of super nova, N49.

the orderly laws of mathematics, the camera automatically records reality as the photographer experiences it. As such, the camera is ideally suited to record the workings of what is judged to be an orderly, rational universe, or alternatively documenting in a reliable and consistent way the expressions of otherwise chaotic natural, political, economic and psychological forces from war to extra-galactic phenomena.

The philosophical revolution of the

Seventeenth Century formed the basis for the political revolutions of the Eighteenth Century. As a result of the American and particularly the French Revolution, ordinary people aspired to a lifestyle that had previously been reserved exclusively for royalty and the upper classes. The French Revolution was predicted on the premise that an egalitarian democracy should be based on the democratization of the lifestyle of kings. With the Industrial Revolution and techniques of mass-production such a lifestyle became available to the common man. The mass-produced portrait, manufactured cheaply and rapidly, allowed everyone the opportunity to have an image of themselves. Today's snapshots are essentially formal portraits—representations of a post-industrial-age identification with European nobility and the aspiration of modern industrialized societies to the lifestyle of kings.

One of the trappings of royal lifestyle was the ability to possess a portrait of oneself such as the ones that became popular with the wealthy classes of the Sixteenth Century. The desire for this kind of luxury created the potential demand for the mass-produced Daguerreotype portraits that appeared within months of the publication of the process. Within a decade, elaborate portrait palaces produced over 3 million Daguerreotype



Hans Holbein:
Henry VIII, 1540



A. Disderi: Emperor
Napoleon III, carte-
de-visite, ca. 1859



Photograph of the
actress, Adelaide Ristori
c. 1860

portraits annually. The cheapest were mass-produced using steam driven machinery and were sold to waiting customers for as little as a quarter apiece. In their heyday, there were thousands of Daguerreotypists plying

their trade across America, and Europe. Although the mass-production of Daguerreotypes brought them within the reach of almost anybody the association of artistic quality to price was clearly evident in the following advertisement by Matthew Brady, proprietor of one of the best known Daguerreotype studios.

"Address to the Public -- New York abounds with announcements of 25 cent and 50 cent Daguerreotypes. But little science, experience, or taste is required to produce these, so called, cheap pictures. During the several years I have devoted to the Daguerrean Art, it has been my constant labor to perfect and elevate it. The results have been that the prize of excellence has been accorded to my pictures at the World's Fair in London, the Crystal Palace in New York, and wherever exhibited on either side of the Atlantic... I wish to vindicate true art, and leave the community to decide whether it is best to encourage real excellence or its opposite; to preserve and perfect an Art, or permit it to degenerate by inferiority of materials which must correspond with the meanness of the price."

In the Maoist vision, on the other hand, the peasant lifestyle is the point of social reference, and "democratization" in that context meant the re-education of an entire middle class. In the west, although millions are economically unable to achieve even a prosthetically enhanced life of luxury we are daily encouraged to aspire to it. In our homes machines replace servants; lawns are symbolic estates, etc. Until Daguerre, only royalty and the extremely wealthy could afford images of themselves. The presence of icons, however, whether of Jesus or Lenin, is a tradition that survives intact from the shamanistic association of art, religion and magic. For the financially, culturally or psychologically alienated, participation in the middle class egalitarian fantasy is unrealizable and is replaced with aspirations to earthly paradises or spiritual afterlives. The transmutation of scavenged media image into icons is an expression of this and typified by Walker Evans' image of the Coke drinking Santa, and the graduation couple in his "Interior detail of West Virginia Coal miner's House, 1935."



The political revolutions of the Eighteenth Century laid the groundwork for the democratization of the photographic image. The art of the late Eighteenth Century established the neoclassical moral imperative of *exemplum virtutis*, which held all classes to be of equal status on the basis of moral character as opposed to a stratified hierarchy based on inherited social position. The Industrial Revolution, which climaxed at the end of the Nineteenth Century, provided the technical means for

fulfilling that aspiration; it also created the social environment in which mass-produced store-bought, machine-made items were valued and even preferred to their hand-made counterparts.

As photography was “invented” in France, it is natural that it embodies nineteenth century French philosophical and artistic traditions. As a consequence, two belief systems emerged within the aesthetic framework of nineteenth-century photography. The first was rooted in the Enlightenment's faith that true, immutable, timeless, objective laws govern the universe. It holds that because photography is an automated perspective system, derived from the unchanging laws of mathematics, physics and chemistry it automatically and exclusively produces images that are truthful. The second belief system, echoing in some respects pre-Renaissance religiosity, was Romanticism's angry challenge to what they saw as the impoverishment of Enlightenment thought and which attempted to restore an emotional/spiritual element to society and art. It rejected the idea that the universe of optical detail recorded by the camera represents everything worth recording, and held that eternal truths are sourced within the heart of a turbulent, tempestuous, mysterious natural universe. Both this universe and its truths can be approached and appreciated only through one's intuitive, emotional faculties. Photography, like the other arts can be used to express these emotions and communicate discovered truths. In the Nineteenth Century,

these two ontologies were embodied in two distinct approaches to photography: the former given expression by scientist/explorers, the latter by artists. In the twentieth, they merged into a single, synthetic aesthetic that has reshaped not only the way we look at photographs, but at reality itself.

Although, the technological sophistication and complexity of modern photographic processes obscures its medieval ideological origins, the quest of early photographic experimenters was entirely consistent with the Renaissance's ecumenical intent. Because it used chemistry to make the image created by the lens permanent, independent of the hand of the artist, photography was seen as a process that reflected the mind of God more completely than the Renaissance's original perspective system.

The *modus vivendi* arrived at by the Renaissance bourgeoisie and the Church forestalled a possibly catastrophic confrontation. It did not, however, resolve the underlying conflict. As the medieval bourgeoisie moved into the secular world they brought along with them the duality of sacred and profane, worldly and spiritual, and which three hundred years later again found expression in the conflict between an orderly universe and a chaotic one: Enlightenment and Romanticism. This duality was present in photography from the very beginning: in the detailed clarity of M. Daguerre's Daguerreotypes and the painterly Talbotypes of Hill and Adamson. As nineteenth-century photography evolved, each of these ideologies gave rise to a separate approach to the medium, one adopted by scientists and explorers such as Jackson, Muybridge, and Brady, and the other by artists, those for example in the Pictorialist movement, such as Cameron, Rejlander and Mortimer.

The Renaissance's ideological framework, gave the camera a tautological authority to certify that the content of its imagery, simply by being the product of physics (the lens) and chemistry (the emulsion), is transcendentally and eternally true—a modern reflection of the mind of an Enlightenment deity. This caused no problem as long as there was a consistency (as there was in the Nineteenth Century) between the intentions of the photographers and the expectations of the audience: that

they believed the same things about the photographic process and its relationship to the world. In such a case the ideological framework is factored out and photography, like the telegraph, performs as a tool of communication; the message it transmits can consist of either emotions or facts.

However, with the Photo-Secessionists the equation was dramatically altered. Their transformation of technical criteria into aesthetic criteria resulted in the end of photography's role as the innocent "faithful witness". In the Thirteenth Century, the renewal of interest in the physical world necessitated that the religious conflicts over good and evil be shifted onto the material world. Nineteenth-century photography, with its two distinct approaches, that of the artist and the scientist, was an expression of that shift. Unfortunately, industrialization made the modern, material world for many, spiritually uninhabitable. At the turn of the century, the Photo-Secessionist movement and its progeny, Straight Photography, despite their enthusiasm for detail and clarity, represented a movement away from the physical world. However, before these photographers could find refuge in the safety of inner realities they had to disassemble, at least in the aesthetic arena, the device that allowed the medieval mind to emerge into and embrace the secular world in the first place. Only then could the artist return to the safety of his inner cloister. Yet, at the same time that this created a sanctuary from an increasingly alienating modern world, it also brought a return to the original ideological conflicts associated with medieval ideologies. As a result, the camera today is no longer (as it was in the Nineteenth Century) simply a tool for objectively recording worldly matters, or an instrument for the public performance of private visions. In large measure contemporary photography certifies, for both photographers and their audiences, that any personal vision of an idiosyncratic, private heaven or hell that the photographer finds more in conformity with his or her wishes, is universally and objectively real.

In this way photography not only gained recognition and acceptance by the new, post-industrial art world, but provide at the same time a way of investing any object, person or event in the material world with psychological value that is distinct from or even contradictory with



In 1869 Edward Muybridge photographed Yosemite National Park (left). His interest was exclusively in the facts about the landscape that the camera recorded. A hundred years later, Ansel Adams photographed the exact same landscape. Adams, a Romantic, however, was interested in communicating his idea of what the landscape means, its spiritual power, its mystery.

objective reality. And out of this merger also grew advertising and propaganda, two powerful tools for social engineering and control.

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