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Cambridge
Scholars
Publishing

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This book first published 2018

Cambridge Scholars Publishing

Lady Stephenson Library, Newcastle upon Tyne, NE6 2PA, UK

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library

ISBN (10): 1-5275-1181-2
ISBN (13): 978-1-5275-1181-1

TABLE OF CONTENTS

LIST OF FIGURES AND TABLES

CHAPTER ONE

INTRODUCTION: WHY VERACITY?

This book is about how we look at photographs and derive some notion of truth about the world from what we see in the picture. Truth and reality are enormous issues by themselves and many thousands of words—rhetorical and elementary—have been dedicated to both. So to make my task easier, I have chosen to limit my thoughts to how they relate in photographs. Broadly, I will examine if photographs depict reality and/or tell the truth. What is presented in these pages is a subject that encompasses several disciplines including photography, psychology, human behaviour and physiology which when put together draw a vivid picture of an activity most people take for granted—taking and looking at photographs. Therefore a supplementary aim of this book is to synthesise information from several disparate specialist fields for the first time to allow its accessibility to photographic practitioners and scholars, as well as those in the specialist fields encompassed, and mentioned above, to give those readers a wider perspective of the subject matter. However, my main aim in this book is to discuss the nature of a photographic world and how photographs relate to truth, or vice versa—how truth relates to photographs. In doing so we will see how and where truth and reality interconnect. I will also explain how digital imaging compares with traditional photography in this context and what truth and reality in photographs is and how viewers might regard that relationship. I will treat digital images as photographs in most of these comments but make distinctions where I think divergence occurs. In presenting this information, I hope to raise more questions in the reader's mind than I can possibly answer, particularly in relation to how you perceive the world around you.

Later in the book I will present an overview of the notions of reality and how photography handles those concepts in attempting to record reality, but in this chapter I will explain why contemplation of veracity in

photographs is important in any conversation about photography and why it is relevant, or more so, in a imaging digital era.

For most purposes, these days, a digital image can be regarded as a photograph because both have much in common in the initial stages of recording an image. One manufacturer refers to its digital products as photorealistic—meaning they are like traditional photographs in appearance and quality. Lenses and camera construction for both media are similar, if not shared, and it is only in the image-forming stage that the differences become apparent. Later in this chapter I will detail the basic differences between the two media. But first let's start by making a broad, sweeping statement: digital images can only be trusted when accompanied by an audit trail that verifies they have not been manipulated in any way; that is, in any way outside what might be regarded as 'normal' photographic controls—contrast, brightness and colour balance changes to improve the image. Even then, there should exist evidence that that, and only that, has been done. For best practice, any changes should be kept to an essential minimum and be recorded. In making that sweeping statement it is implied that digital images do not possess the truthfulness associated with their earlier photographic cousins (CGI television advertisements, music video clips and movies aid to reinforce this impression), and it should be noted that truthfulness is not an essential characteristic of photographic images at all times or in all instances. However, there has grown up over the years a belief amongst the general public and photographers that traditional photographs have a certain quality about them that relates to truthfulness, and that that certain quality is unique to photographs compared to other two-dimensional representation of the 'real world'.

I should clarify what I mean when I talk about viewers and justify how I can say certain things about their beliefs. By *viewer* I mean anyone who looks at a photograph whether that be a family portrait or an illustration on the side of a cereal box. The viewing session might be conscious or subconscious in that the viewer might be unaware they are looking at a photograph (or photograph-type picture) or it might be a more considered action such as visiting a gallery or perusing a coffee-table book. We see hundreds of photograph-like images each day—in magazines and newspapers, on the side of buses, on the Internet and on the walls of galleries—and many more of these images pass us by almost un-noticed. Here, I am using the broadest definition of what a photograph is, to include photomechanically reproduced images that derive from photographs or digital images. In this book, where it is necessary for clarity, I will specify particular types of pictures—photographs, digital

images, photomechanical reproductions, and so on. If I am not being specific, I will categorise all 'photo-like images' under the same umbrella.

To justify how I can make certain comments about viewer-beliefs, I conducted two surveys of viewers during PhD research that determined that even amongst visually literate viewers the range of beliefs in photography's veracity was polarised—from the notion that no photograph tells the truth to the notion that all photographs tell the truth. This reflects similar responses and attitudes towards this subject throughout history, as I shall show in the next three chapters. Most respondents to the surveys fell somewhere between the extremes, as would be expected from the general population, but no distinct patterns emerged from my surveys to make the results conclusive in favour or against photography's perceived high level of veracity. That is not to say, if I can be excused a double-negative (with no photographic pun intended), that these data were not extremely useful in allowing us to make general observations about photograph-viewing and about what people believe.

Ever since the invention of photography in the late 1820s, traditional photographs have been regarded as possessing an inherent truthfulness not possessed by other two-dimensional picture methods and I will trace the origins of these beliefs later. By association, and as the next step along the continuum of photographic development, digital images have inherited that truthfulness from traditional photographs; but to a limited extent because the viewing public, digital image-makers and users know how easily manipulation or enhancement can be achieved with this newer medium. Users also understand that, up to a point, manipulation to enhance the image does little to alter the truthfulness of the image in any meaningful way. In a portrait, for instance, removing the red-eye effect caused by on-camera flash is a minor change to the reality of the occasion because humans cannot easily see red-eye effects in the external world. Doing so does not alter the appearance of the portrait subject to any great extent. The next step of smoothing over some wrinkles around the eyes changes the reality of the occasion a little more but what sitter would object, then we could remove the pimple from the cheek because that's not usually there; and so it goes on with subtle and minor alterations being made until the photograph is no longer an accurate representation of the subject—reality is no longer truth. The question then arises: At what point do we draw the line when making such alterations to images? Is that a matter for the photographer or the subject? At this point, I will leave the reader to ponder those questions.

There is, in the news and other media, particularly amongst editors and image providers, an ongoing discussion about whether or not enhanced images should be labelled as such. While this idea has merit, doing so will never disclose how much manipulation has taken placed, in what picture areas, using what methods or computer tools. A proper audit trail gives all these details and more, as I will explain in the final chapter. In everyday life these days it seems the fall-back positions is for the viewer to assume manipulation or enhancement to have taken place and leave it at that. For instance, in the advertisement for a skin-care product in the glossy women's magazine the model's face is flawless and pore-less, so heavily computer-manipulated is it. The viewer—potential buyer—knows this and ignores the fact to make a choice to purchase, or not, based on other criteria—price, availability, likely cosmetic outcomes, not because the model looked so perfect which suggests the purchaser can too.

Getting back to the main theme, the term commonly used to describe the aspect or characteristic of photographs—truth—we are discussing here is *veracity*, but there are other terms that need to be compared. Veracity is defined as *having the characteristics of truth* whereas verisimilitude means *having the appearance of truth*. A third term, *verity*, is defined as *having the quality of being true, in accordance with fact*. That these terms are sometimes used synonymously (perhaps to make the writing more florid) does not help the issue. To clarify the point, think of a crime analogy. Veracity is guilty of a robbery but verisimilitude appears to be guilty—found wearing a mask and carrying a crowbar—and has a past record of bank robbery. Verity, then, is the robber (veracity) confessing to, and being convicted of, the crime (confirmed truth). It is the term veracity that is most commonly associated with photographs and this implies that the writers are aware that verity is not the correct characteristic to be applied to photographs because they are aware of the difference between the image in the photograph and what the object looks like in the external world. (I am avoiding the use of the words *real* and *reality* because the public's understanding of these concepts can be as fluid as their understanding of truth.) The word verisimilitude has been used by a few commentators but it is not commonly applied to the subject we are discussing here, perhaps because it is not an easy word to pronounce. The crux of this book is the examination of whether or not photographs have the aspect or characteristics of truth implied by the use of the word *veracity* and, if so, to what extent these characteristics are accurately applied to the medium.

As many users of these media know, it is more difficult to alter the contents of a photograph made using traditional silver-halide technology in a darkroom than it is to alter a digital image using a computer; more difficult, but certainly not impossible. There exist many examples of manipulated photographs from the earliest days of the invention. Oscar Rejlander's *Two Ways of Life* (1857) is a good example, as is *Fading Away* (1858) by Henry Peach Robinson and the various images of Gustave Le Grey such as *Solar Effect in the Clouds—Ocean* (1856), *The Brig* (1856) and *Large Wave, Mediterranean Sea* (1857), which are all contrived photographs. They were made by combination-printing from several negatives onto one sheet of paper. With the first two examples, the scenes might just as easily have been set up and photographed as a single exposure rather than put together in a darkroom if the photographer had the inclination to do so. At the time these manipulated, contrived images were made, the viewing public responded differently to the pictorial content than viewers might today; they were seen as metaphors for aspects of life and accepted as such. And they were seen as works of art. Compare this acceptance of manipulated images with the public outrage from the 1980s at *National Geographic* magazine staff rearranging pyramids in a cover photograph for aesthetic reasons. In many cases these days, trust is lost when manipulation of an image is detected but it seems that that loss of trust doesn't affect or carry over to all photographs, merely the one in question at a given time. With regard to Le Grey's seascapes, where separately exposed negatives for the sea and the sky were later combined, this was done to render a more lifelike appearance than could be achieved with a single exposure because of the limitations in the film of the day. Photographs of the era were compared to paintings from the era in which the sky could be well depicted. Viewers, as well as photographers, wanted the sky to look correct in photographs for the sake of realism. The limitations of photographic emulsions of the time were overcome for the sake of realism.

In this digital age it cannot be assumed that an image is unmanipulated and viewers seem to pass over this characteristic and use—view and take a message from—the image in the way it is intended without difficulty. It might be that there are different levels of veracity for images based on whether the viewer is visually literate or not, or on whether that issue matters to them in the viewing context. The level of veracity attributed to a certain image might depend on its end use; that might be, for example, in an advertisement, in a court of law or in a gallery, or many other places. It might also depend on the likeness; that is, whether the object depicted looks like how the object photographed appears to the viewer in the

external world. These are issues we will come back to as we unwind the photographic mystery that is veracity.

As we will see, veracity, it seems, is not an unalterable, quantitative, standardised fixed value but depends on the content of the photograph, how the subject is depicted, the context in which it is used and the viewer's interpretation of the image. In many cases viewers see the end product of photography, not a photograph itself. For instance, advertising posters on billboards and buses and advertisements printed in magazines, newspapers and brochures, illustrations on the side of food packaging; all these are end products of photography. The original photographs most viewers are likely to see are things like wedding photographs and family snapshots. The contrast between these two broad areas is stark. Snapshots and wedding photographs are unlikely to be heavily manipulated—snapshots not at all—whereas advertising photographs are likely to be extensively enhanced, as are nude centrefold-type pictures and images of celebrities depicted on magazine covers. By the time the photograph or digital image reaches its end product it is impossible to tell what the original capture format was and so any veracity imbued in a silver-halide based photograph as compared to digital capture cannot be carried over to the final image. However, many users of photographs rely on viewer perception of high levels of veracity in traditional photography to give their product credibility—whether that is newspaper stories, lawn mower ads, or anything else. For instance the images of certain Soviet political leaders were removed from photographs by their successors in attempts to distance the latter from the former and to rewrite history. These manipulators relied on the veracity of photographs for the subterfuge to be successful. It is a case where unmanipulated photographs support claims to veracity by manipulated photographs.

It is incorrect to imply that digital images do not possess any of the veracity that traditional photographs carry since the newer medium is merely a continuation of the photo-like processes which have been used since the mid-nineteenth-century. What marks the difference in attitudes toward digital imaging in this regard is the common knowledge that it is so easy to alter images using computer technology compared to traditional darkroom methods. It is surprising that manipulated photographs can exist alongside unmanipulated photographs without drawing the latter's veracity down to the level of the former in the perceived veracity stakes. It is an interesting phenomenon in the viewing process and within it the viewer's perception of photography generally. It is obvious that viewers can determine a difference in many cases between a manipulated photograph

and an unmanipulated one, but there must be many, many examples that go un-noticed or uncontested. Perhaps only the most outrageous examples draw attention.

While it might seem, to some readers, that it is late in the game to be discussing traditional photographs in this context in a digital era, it isn't; it's never too late because even though the use of the traditional photography medium has declined rapidly in the past decades in favour of digital imaging there remain in existence millions of traditionally made photographs that still have their use and exude a claim to high veracity. Whilst these photographs exist the inevitable comparison with digital images will always be made. So to question perceived levels of veracity for traditional photographs is useful to bring the so-called level playing field into the debate. For as long as many traditional photographs are seen to have so much veracity, digital imaging will fall short in the comparison. However, if the true state of traditional photography's veracity were determined to be lower than that currently perceived by viewers then the comparison would show digital images as being equally able to be truthful like photographs are perceived to be—when they are truthful. However, for digital images, as the sweeping statement above suggests, there are conditions that must be applied for that truthfulness to be acceptable to the viewing public. One way of doing this is to label images in the print media as manipulated, if they are. Therefore, the question must be asked: should traditional photographs have the same conditions applied—as to labelling for manipulation.

If the public perceptions of digital images are correct, that they are all enhanced in some manner, and the call for them to be labelled is heeded, as such it might be easier to reverse the way this might logically be done and label those images which have not been manipulated. This would take the label from the positive THIS IMAGE HAS BEEN ENHANCED to the negative THIS IMAGE HAS NOT BEEN ENHANCED thus less labelling would probably be required. So far, in regard to truthfulness, we have compared digital images and traditional photographs in general terms. I would now like to explain that more specific detail.

Digital imaging versus traditional photography

Although a discussion on analogue photography's level of veracity could have occurred at any time before the invention of digital imaging, it is the emergence of digital imaging which has brought the debate into sharper focus. It is difficult to compare the particular specifications of digital

technology with conventional photography because the two processes are fundamentally different after a certain point so that one should not be thought to be the same as the other; but merely similar. Initially, resolution was a major factor at issue but as digital images reached visual parity with film this factor lessened. Despite digital images rapidly attaining a more photographic-quality in accordance with Moore's Law, which states the resolution of a photo-sensor chip should double every two years, this was not happening in the research laboratories or the marketplace. At the time of writing the pixel size cannot easily be reduced because of limitations caused by Quantum Efficiency—the sensor's ability to convert light to electricity. For an effective increase in resolution to occur a pixel (scaler photosensor element in a digital camera) would have to be halved in size then halved again—this would bring digital imaging resolution closer to parity with photography. Also the development of the optics has somewhat lagged behind that of the electronics and cameras and these two characteristics of digital imaging—pixel size and optics—are important because they interact to leave the fidelity of digital images lower than for traditional film. However, having said that, the limitations associated with human vision are a determining factor is how 'good' digital images appear, in every day use, compared to traditional photographs.

Lens manufacturer, Schneider Optische Werke of Bad Kreuznach in Germany, as other lens manufacturers do, develop lenses for digital cameras specifically with a view to making them with a lower resolving power than those produced for conventional photography because digital sensors are composed of separate elements so they cannot resolve detail that is smaller than one pixel. There is, therefore, no point in the lens resolving detail to a smaller scale. Indeed if any such detail is presented, it will exist in the image only as noise, not useful picture information.

Some of the noise associated with digital images equates to neutral density in silver-halide photography (the creation of base fog in the emulsion) and 'muddies' the picture, thus it is desirable to reduce the amount of noise associated with an image to present clearer pictures. Importantly, noise adds to the file size, so by reducing the lens quality and therefore the amount of noise generated, the file size is reduced—a useful marketing feature because when file sizes are smaller, more images can be recorded on a media-card, memory stick or camera storage chip.

Nevertheless, these days even the most sceptical of photographers are beginning to regard digital images as being near-photographic in quality. As we will see, this is due in large part, to the resolving power of the

human visual system. Many of the high-end consumer digital cameras produce upward of twelve million pixels in image area—some claim more with the addition of other types of sensors, but these re not pixels as such—so a distinction yet exists between the two media because technical quality is still used to judge the appearance of an image, especially when enlarged. The continuing notion that one medium has low veracity (digital) and the other a higher veracity (analogue) seems to suggest a differentiation is required and will persist between the two media.

The idea that digital imaging can be readily equated with analogue photography is challenged when it is demonstrated that digital images need not have the same reference to the external world that photographs must have. Electronic technology is getting sophisticated to the point where images can be created purely on screen (pseudo-photographs), or can be made from non-pictorial communication signals received from satellites thousands of kilometres from Earth and when stitched together as images. These images deceive even the most sophisticated viewers into believing they were taken with a camera. Thus challenged, the distinction between the two media becomes clearer.

As with any visual medium, the quality of the image produced will vary considerably depending on the skills of the practitioner and the tools and technologies used in the working process, some seeming closer to illustration than to photography where digital imaging is concerned, a view which might equally apply to silver-halide photographs such as Rejlander's *Two Ways Of Life*. Significantly, the digital realm of image-making is somewhat predetermined for the user by the software tools that can be used. In the case of Adobe Photoshop or Lightroom and Movavi Photo Editor, for example, users can only perform actions that programmers have provided: everything is a combination of the available options, and the possible results are definitely not infinite. This fact contrasts starkly with the case for silver-halide photography, which is a much less regimented area of activity in this regard, but still with limitations. It is because of these differences that the traditional medium must inevitably offer those who master it a greater variety of creative possibilities.

There are a couple of loose ends that need clarification as we bring this chapter to a close. We have compared the materials and products of two pictorial media and now we should look, briefly, at the practitioners. In this field, there is some debate as to what digital image-makers should be called, which is relevant here so we know what name to give them; whilst most practitioners call themselves 'image makers' there are those who call

themselves ‘lens-based media artists’ but the latter obviously would not be an appropriate title for someone producing pseudo-photographs in which lenses do not figure in the production so I shall use the term image-maker for digital picture producers when I am distinguishing them from photographers. And on another matter, if the type of material used in producing an image can be detected or deduced, particularly when enlarged—and a digital image can still thus be discerned from most traditional photographs—, then the involvement of a photographer is evident in the case of the conventional photograph. Yet the same cannot be said for a digital image, especially if the comparison comes from the external world or a pseudo-photograph. In which case we are comparing the creative output of a photographer versus an image-maker or, on the other hand, a non-lens-based media artist versus a painter or graphic artist. Therein lies another valid basis for us to consider digital images as being different from traditional photographs when assessing veracity—the connection to the external world by a bundle of light as distinct from a computer generated illustration (CGI).

Finally, digitization in itself may not alter the perceived level of veracity attached to digital images—but the steps in the process can. If picture quality plays any role in determining levels of veracity then the difference in quality of digital images compared with traditional photography images is significant. Thus we come to a point where we need to determine how this situation—truth-in-photography—came about, so in the following three chapters I will examine the historical record to find the origins and causes and effects of the phenomenon.

So; Why veracity? Because if we understand the concepts and notions associated with photography and verity such as where the veracity that attaches to photographs came from and why it persists at perceived high levels then we might better determine a quantitative measure for it.

CHAPTER TWO

FROM DAGUERRE TO DIGITAL: THE FIRST 100 YEARS

In this chapter, and the next two, I will trace the historical place that the concept of truth in photography has taken. I will divide this historical analysis into three periodic blocks to better track views about veracity that were established from the beginning of photography and changed with time. The blocks will then be subdivided into either single years of significance or short eras depending on prevailing thought at the time and available written reports. In this chapter we will investigate the years 1839 to 1939, the centenary of the announcement of the invention. In the next chapter I will look at the time from 1939, which coincides with the outbreak of World War II and is a significant point in the thinking about these issues, to the sesquicentenary of photography celebrated globally in 1989. In the third chapter of this group I will examine the period most influenced by the introduction of digital technology on a widespread basis.

We can assume that the veracity of photographs hangs on an understanding of what reality is believed to be and what it should look like in a photograph. When it comes to discussing the nature of ordinary perception and how we interpret the photographic image, we have to ask what exactly it is that we refer to when we speak of the external world and, by extension, reality. We will examine these issues in more detail in later chapters. More to the point, we need to determine whether or not the real world can be photographed at all, and we can understand this better when we have examined what people believe about the idea.

The four stances from which the viewers can choose regarding photography's ability to depict the external world and reality are, that:

- photographs depict reality and the external world;
- photographs do not depict reality and the external world;
- some photographs do depict reality and the external world while others do not;
- some photographs depict the external world but not reality.

Those four stances cannot be true simultaneously, so we'll examine the extent to which the external world and reality are perceived and conceived as identical in a photograph as well as in every day life? In what I call a retrospective survey I 'asked' the question: Do photographs depict reality? of the many practitioners and commentators who, over time, have expressed a view on this subject and I did this by examining the written word of those surveyed, who, naturally, were not aware I was asking them anything. More accurately, it was the question I had in mind as I searched their work for answers. Interestingly, by conducting a retrospective survey in such a manner, any biases as to why the question is being asked, which might arise in face-to-face surveys, is negated. What follows, in chronological order, is the result of that retrospective survey.

This overview begins before the announcement of the invention of photography to establish that photography inherited some of its veracity from pre-existing processes and opinions.

Before 1839

It is interesting to speculate that early humans may have observed the effect of the camera obscura on the rear wall of a cave if light penetrated a suitably sized hole in hides hung to cover the entrance. But it was the Arabs from the eleventh-century who probably first used a constructed camera obscura to observe solar eclipses. Alhazen Ibn Al-Haytham, an Iraqi who lived in Cairo, wrote the first clear description and correct analysis of the camera obscura. During the seventeenth- and eighteenth-centuries the camera obscura was made small enough to be portable and was fitted with a lens at one end to give a brighter, sharper image on the ground glass at the opposite end. The image formed of the outside world gave the artist an image to trace and draw upon (literally) to reproduce the scene more correctly than was possible before the camera obscura—even when it was room-sized, first described in 1553, like the one still extant in Edinburgh, Scotland and many other places. The instrument allowed even the unskilled to make pictures of the external world—the use of these cameras for making pictures was described by Giovanni Battista della Porta in 1589. However, without artistic skills, the operator could not accurately reproduce the colours, textures and shading of the natural world.

The *camera lucida*, invented by Wollaston in 1807 provided another aid to drawing the external world but, again, required skill to render the subject well, as WHF Talbot discovered on the shores of Lake Como. Concurrent

with the development of these instruments was an increasing demand amongst the burgeoning middle class for images, particularly family portraits, which indicates that the prevailing view at the time was that the images produced by the cameras obscura and lucida created a craving for such pictures that spurred-on the drive to *fix* the images of the camera obscura. These images and the belief that they were formations of reality provided the seed from which grew the belief that the first photographs showed the same reality as the camera obscura. Yet the images on the ground glass screen of the camera obscura were not accurate renderings of the external world. Lenses concentrated the light vignetting the image and sometimes made the image brighter and colours more intense, and with other cameras obscura the image might be dull and the colours muted and motion is seen on the screen as well but not in the still picture. It seemed to be inconsequential to the viewers of the time that the blurry, soft focus, grey and white pictures on photographic paper, or the shiny, hard-to-see daguerreotypes created, when the image of the camera obscura was finally fixed, appeared nothing like the external world they observed with their eyes.

It should be recalled here that photographically-realistic paintings were already being produced before the invention of photography proper. Before photography, the camera obscura allowed painters to reproduce the geometric perspectives, shapes and depths later displayed by photographs. From the fifteenth-century, marked by the publication of Leon Battasta Alberti's *On Painting* in 1435, drawing and painting produced perspective pictures. For examples, *Townscapes* from 1470 showed accurate linear perspective; Canaletto's street scenes from the mid-1700s, *Polishing the Granite Bowl for the Lustgarten* by Johann Erdmann Hummel painted in 1831 and John Constable's *Wivenhoe Park, Essex* painted in 1816, all predate photography. The latter two are examples of photo-realistic paintings before that term was first used. It is also significant that these latter two paintings are in colour, whereas the first photographs were greyscale images (in today's terminology). There existed a pre-photographic desire to photograph dating from the late 1700s, and while this notion is attractive in a rhetorical sense, it is nonsense in a practical sense because photography describes a specific set of actions and outcomes relating to the production of pictures by light and chemical action, the first of which was officially announced in Paris in 1839. The potential for the process dates (optically) from the Renaissance and (chemically) from 1727 but the experiments to fix the action of light on chemically treated substrate did not culminate into anything useful until the mid-1820s with the experiments of Niepce. However, we can say that

photography was an inevitable outcome of developments in painting and drawing which began at the time of, or before, the Italian Renaissance period.

The oldest known photograph is by Nicephore Niepce, made about 1824, and is a copy of a printed page; the *next* oldest known photograph taken a year or two later by the same photographer is a view from an upper window at his house at Le Gras. Unfortunately for him, Niepce had financial problems and sold his method to Daguerre so it is the year 1839, and the announcement in France of Daguerre's efforts, that is taken as the introduction of photography.

1839

Daguerre called his version of the fixed image an imprint of nature and said the daguerreotype was not merely an instrument that served to draw Nature but a chemical and physical process which gave Nature the power to reproduce herself. WHF Talbot also announced his method of fixing the image from a camera obscura in London in 1839 and both announcements established a high level of veracity for photography as claimed by the inventors.

1840

Frustration with his limited success in reproducing scenes with the cameras lucida and obscura led William Henry Fox Talbot to develop his method of fixing the images created on the camera obscura (Talbotype and calotype). He described the image on the ground glass of the camera obscura as showing an inimitable beauty of the pictures of nature's painting and that is what he tried to fix on a light sensitive emulsion. Yet to say that the blurry grey tone images, which were subsequently produced, where like those images seen on the glass of the camera obscura is difficult to understand when the external world was seen in colour and with movement. Likewise, the daguerreotype reproduced fine detail of its subject, not always available to the unaided human eye or from many cameras obscura. Many commentators of the time favourably compared the early photographs to paintings of the external world. For example, Edgar Allen Poe, writing in 1840, said that the daguerreotype was *infinitely* more accurate in its representation than any painting and he expands his claim by adding that the variations in shade, and the gradations of both linear and aerial perspective are those of truth itself.

That the detail in some early photographic images was perceived to be more precise than anything painted is partly what led to the belief that photographs are accurate depictions of the external world. While this is true, it is not the whole picture.

1853

After about 1853 the photographic paper-print process became popular. With the ability to reproduce copies of photographs, as distinct from the one-off daguerreotype, the demand for photographs increased. This development also meant that the alignment of the image surface with a light source to correctly see the image, as was the case with daguerreotypes, was eliminated and photographs became very much easier to view. The removal of a difficult viewing condition may have added to the perception that photographs are accurate depictions of the external world.

In the early 1850s, Berend and Diamond were consistently using photography in medicine and in 1855 Berend euphorically revealed his reaction to the development of photography when he exclaimed that he understood now that the method had been found which would make the long-perceived defects of limited, unrealistic images, by which he meant painting and drawing, impossible. Likewise, Diamond wrote in 1856 that permanent records thus furnished by photographs are at once the most concise and the most comprehensive. Ironically, even in the twenty-first-century, medical artists are called upon to draw and paint medical illustrations that the camera cannot match for accuracy due to characteristics of photography; namely depth of field and focus limitations.

1857

Lady Elizabeth Eastlake, writing in 1857, granted the photograph the position of the most truthful pictorial report of fact and observed that the daguerreotype gave a representation which was exquisitely minute and clear in detail, capable of copying nature. She did add that photography was yet subject to certain distortions and deficiencies. She attributed these to the quality of lenses and the shortcomings of the processes available at the time but was adamant that photography's business was to give evidence of fact as only an unreasoning machine can give.

1858-1860s

Oliver Wendell Holmes said that the very thing which an artist would leave out or render imperfectly, the photograph took infinite care with, and so made its illusion perfect. On the other hand, Baudelaire considered men fools to believe in photographs as mirrors of physical fact and he posited that it was poor madmen who believe that photography provides us with every desirable guarantee of exactitude. Unfortunately, he did not indicate why he thought that, nor does he elucidate those characteristics of photographs, or human perception, or whatever it is, which drew him to that conclusion, so that if he was correct we do not know why. From comments like these, we can conclude that in the nineteenth-century we encounter the notion of the unmediated agency of nature and note that writers, including Daguerre, Samuel Morse and William Henry Fox Talbot, dismissed the human operator and argued for the direct agency of the sun.

In 1858 Henry Peach Robinson used combination printing to create scenes that never appeared in front of a camera—mostly subjects photographed as set-ups in a studio, as had Oscar Rejlander in 1857. Robinson produced a photograph called *Fading Away* (1858) which stirred critical attention at the time and bought his work to public notice. On this issue, Robinson said that some viewers saw photographers as mere mechanical realists unable to produce interpretive pictures. Robinson explained that a pure unadulterated machine-made (man and instrument) photograph was the most perfect specimen of realism the world could produce and he believed that, before photography, no one could have conceived of a method to so accurately reproduce nature. Robinson himself was a pictorialist and inspired many who followed him, but whether the viewing public thought his pictorialist images any less real than straight photographs is difficult to determine from available evidence. Robinson reminded his readers that it is often said that photography cannot be art because it had no capacity for lying—lying about nature, lying about reality yet he disclaimed this by adding that the saying was wrong as regards photography. He called photography a humble liar; not the guileless innocent that some people suppose. But others, like Jerry Uelsmann, Moholy-Nagy, John Heartfield (Helmut Herzfelde), and many more have raised the status of photography to that of a more-than-humble liar. Robinson was not against altering a photograph and described how he once moved a clump of trees from the left side of a photograph to the right side by double printing to improve the composition because he did not want a mere local view. Taking such alteration a step further, Alexander Squire, a surgeon in England, wrote

between 1864-66 noting that greater accuracy and more lifelike representations were obtained by means of photography of the disease that were coloured from life by a good artists—thus hand colouring of black-and-white photographs is used to obtain what this medical practitioner considered more accurate renditions of the external world.

1880s

There was a change to photography occurring about 1887 when amateur photographers were able to concentrate on content rather than technique because emulsions that were easier to use had been introduced by the company that later came to be called Kodak.

1890s

Prominent in this era was photographer Robert Demachy who in 1894 first showed his gum bichromate prints. Although not a new process, his was a simplified version which involved painting the emulsion for development, and because of this method the technique was eschewed by many photographers because it was too painterly and insufficiently photographic. Demachy also used the Rawlin's Oil Process and his photographs while looking like paintings showed detail that many painters did not achieve. Demachy describes a ‘straight print’ as one with no local shading (referring to the photographic technique of dodging and burning-in during print exposure), and normal development. He was more concerned with the nature of photography as art than its depiction of reality but he implied in his writing that photographs do not depict reality.

During the same era, Alfred Stieglitz also argued for the interpretative nature of photography. He said the contemporary verdict was that the production of photographs was purely mechanical, and he made that remark despite the creative controls he knew photographers had over subject, pose, lighting, exposure, image development, choice of lens, plate and camera, and so on. At the time, people generally supposed the photographic apparatus was not a pliant tool in the same way as was brushwork on a paint-covered canvas.

1900s

On the subject of printing, Demachy differentiates between straight prints and a work of art. A straight print as he describes it, and as the term is

understood to mean, is one made from a negative without any photographic manipulation. The exposure, development and printing are, without exception, to manufacturer's specifications. Demachy, writing at a time when photographic material was not manufactured to today's precise specifications, said that this sort of straight print could not be regarded as a work of art thus implying that straight photographs were a true representation of reality but that this reality can be rendered artistically with manipulation of the image.

The rise of Pictorialism from straight photography was followed by the reaction against Pictorialism by the Photo-Secession Group in the USA. Some photographers—Alfred Stieglitz, Frederick Henry Evans, Clarence Hudson White, Adolf de Meyer—were known as purists who eschewed manipulation while their contemporaries—Frank Eugene, James Craig Anna, Robert Demachy—went so far as to scratch their negatives and use brushwork. The pictorialists had unanimously rejected unadorned reality, viewing it as unartistic whereas the Photo-Secessionists and later the documentary photographers, photojournalists, and others strived for more realism. The synonymous use of the words *reality* and *truth* in these writings shows their implied reference to the veracity of photographs. Also evident is a belief that realistic representation is unartistic. The photography-as-art debate runs parallel with the depiction of reality debate throughout the history of photography.

There are three positions that photographers and others have taken so far in this brief history on the relationship between photographs and reality: i) that they believe all photographs depict reality, or ii) that they believe some photographs depict reality while others don't, or iii) that they believe photographs don't depict reality. Yet whether this was the case for all viewers is not documented but could well depend on the viewer's perceptions of reality based on the extant knowledge during the pre-1939 era, just as it is today.

In the first third of the 1900s, Lewis Hine was making photographs of life in the United States and is particularly remembered for his documentary photographs exposing the exploitation of child labour. A contemporary of the members of the Photo-Secessionist movement, he came down firmly in support of the argument that photographs accurately depict reality although he does not single out photography as having more veracity than painting but by using photographs instead of paintings or other two-dimensional representations, he appears to favour a higher veracity for photography.

Meanwhile, the first colour photographic images existed from about 1861 when James Clerk Maxwell demonstrated three-colour projected lantern slides at the Royal Institute in London by mixing varying amounts of red, green and blue filtered light. Three negatives had previously been made by Thomas Sutton of a tartan ribbon through the same three filters used for projection. The resulting image was a fair resemblance of the original tartan colours. By 1892 Frederic E Ives had developed a devise (the *Kromskop*) which not only showed images made through this three-filter technique but did so stereoscopically—thus combining 3-D and colour in the photographic image. Similar methods were employed by Sergei Mikhailovich Prokudin-Gorskii, a Russian photographer for the Tsar. From 1909, over 2,700 glass plates exist of three-colour filtered negatives depicting the twilight years of the Russian Empire that were subsequently shown by projection. Prokudin-Gorskii's subject matter was mostly still life or people not moving but even so there is some colour fringing where the subject has moved between one of the three exposures needed, as plates and filters were changed. Colour photographs of this type had an effect on contemporary understanding of the veracity of the photograph generally but clearly an insufficient effect to render monochrome photographs short of veracity.

1913

Marius De Zayas called photography the plastic verification of a fact as opposed to Art (read: painting), which he believed was the expression of the conception of an idea. He believed that the camera was a means to penetrate the objective reality of facts.

1920s

In support of the argument that photography accurately depicts the external world, Jed Perl noted that nineteenth-century photography had been an omnivorous experiment in sight, that the camera was all-knowing, the ultimate arbiter of truth. He described this scenario as the catalyst that set the mood for coming change brought about by Man Ray's (Emmanuel Radnitsky) work. About which Ray himself said that he did not photograph nature, but his fantasy. Ray certainly shook conventional photography out of any complacency for depicting reality by producing montage images, solarised images, and Rayographs, which are his non-commercial *oeuvre*. Ray believed that photography is a marvellous explorer of aspects that our retina will never register, and if he only related

that to his Rayographs he was accurate in his assessment. It cannot be discerned from his writing if he would say the same thing about his straight commercial portrait or fashion work, but it might be extrapolated that, like Emerson, Ray is hinting at more than one truth to nature. Commenting on Ray's work, Perl said that looking at the daguerreotype, we bear witness to the birth of photographic verisimilitude; looking at Man Ray's photographs, we experience the rejection of that same photographic verisimilitude, so Perl is placing Man Ray at the heart of the change in beliefs about photography's veracity and places the occurrence of that in the early 1920s. But as has been shown, with more yet to come, photography's veracity was challenged before Ray's time and since Ray's time and is yet to be rejected totally by the public.

Ray, along with Moholy-Nagy, Christian Schad and others using camera-less photography, twisted the belief that photographs depict reality, or represented truth or some other commonly-held belief, but their work was seen as separate from mainstream photography and therefore the same rules and beliefs need not apply to them. Thus the veracity of *most* photographs was maintained. Laszlo Moholy-Nagy described the nature of photography as being stagnant from the time of Daguerre (1840s) but that modern artists (1920s) had changed that situation. That is when he (Moholy-Nagy) and his colleagues introduced the photomontage style of image-making as well as the photogram, and a reasonable deduction from Moholy-Nagy's statements is that he believed nature and reality to be synonymous.

Photograms are made, principally, by laying objects onto light sensitive surfaces, usually photographic paper, and exposing the layout, commonly, to controlled light from an enlarger, but any light source will do. The processed image consists of variations in density along with shapes and forms, based on umbral and penumbral shadows, to produce a visual array unavailable to the human eye in the external world.

Moholy-Nagy pointed out that photography viewing and film watching (cinema) had an influence on the way people see the world but that no plastic expression can ever be more than a residue of an experience, meaning that viewing a photograph (or seeing a movie) can never be as enriching as viewing the same subject for one's self in the external world—modern psychologist would agree. It is not possible, however, to always experience the world first-hand and photographs (and film) are a useful substitute but it is important for the viewer to be aware of the difference between the two experiences.

Alexander Rodchenko wrote that one had to take different shots of a subject, from different points of view and different situations, as if examining the subject in the round; as opposed to a single view. He said that history will only know an important figure (Lenin, for instance) from many photographs and snapshots of him, not from a single oil painting. This gives two insights into photography: the first is that the equivalent of walking around the subject photographically is required for the viewer to know the subject well and second, that (like many famous figures who predate photography and who are known only from paintings) many different photographs contribute to a better understanding of the person. But Rodchenko also said letters, journals and memoirs from associates are key components to knowing an historical figure (or anyone) so he obviously feels photographs alone were not up to the task.

In 1927, before he became the first director of the Museum of Modern Art in New York, Alfred Barr travelled to the Soviet Union where he met several artists—including Rodchenko and Lissitzky—both of whom had abandoned painting for photography. Their preference was for reporting over abstraction and disliked painting's relationship to public ownership of property (in solid form and creative idea) which characterised the post-revolutionary thinking within the art community. These artists believed in the objective veracity of photography over the subjectivity of painting. Of course, those painters who did not see things in this way—fact versus fiction—either abandoned painting altogether or emigrated to Western countries where the views were less concrete than those of Soviet Russia.

1929

Art critic, Franz Roh said that by a photograph we can gain a more accurate notion of the articles offered than by ever so suggestive a drawing, yet he realised that a photograph was not a mere print from nature, for it was (mechanically) a turning of all colour value presumably, although he does not state it, into shades of grey. But it could also equally apply to the colours of the external world turning into patches of colour dye on paper, which is almost as unrelated to the visual image of the external world as are shades of grey.

Early 1930s

H. P. Lovecraft called attention to photography's veracity and while suggesting the use of photographs as evidence, he concedes that they

would be doubted because of the great lengths to which clever fakery can be carried. Also in this era, H G Wells suggested that by the end of the nineteenth-century painting would lose the need for exact representation because photography was taking over that role with its circumstantial precision. Meanwhile, Francis Brugiere suggested that the circumstantial precision of photography was a characteristic that could be used for creativity. For Bruguiere, *realistic* is an antonym for *abstract*. However, his most prophetic thought summarised the hypothesis of this book: he said that a photograph was said to look just like nature, but no one had agreed just how nature looked and it may, therefore, be questioned whether a photograph really looks anything like nature.

At the same time, Roy Stryker—head of the Farm Security Administration—was reported as telling Arthur Rothstein, one of his photographers, to "bend the truth" by pointing his camera at the rural side of the state fair and not the urban tinge. Some people in the wider photographic industry were obviously aware that there existed a general view that the camera never lies while at the same time encouraging practitioners to make it lie.

Late 1930s

By 1930, Edward Weston, not content with previous explanations, introduced a new concept: that of super-reality. This again implies more than one reality exists; it implies realities of differing intensity. It also allows that, although photography re-creates the external world that most viewers would concede is reality, the photograph transforms that reality into something which is influenced by the photographer. It may also be argued that the photographic process alters the original reality. Weston described images which can sublimate things seen into things known, which he said leads to the fusion of inner and outer reality. More specifically he says that a photograph may approximate reality but cannot attain unqualified realism.

In this era, French essayist Paul Valery described photography as an objective process of illustration, mirroring physical facts. However, Valery seemed to recognise that photographs and reality are not identical when he said he admired the altered perception of reality which photography had given man and he praised the capacity of these images to contribute valuable information to man's knowledge of the universe. Valery also said that with the coming of photography, human's way of seeing began to change, and even his way of living altered. People had their portraits done, scenes from around the world were available to show different cultures,