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All Photos Lie

Images as Data

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The Historical Debate

For more than 150 years, photographers have argued over the degree to which they should manipulate their subject, their viewer, and themselves and whether such manipulation is good or bad. The most obvious examples occur frequently in these days of digital photography, where the content of an image can be altered in any way imaginable. But the debate also encompasses more subtle issues about the honesty or integrity of images. When this property is thought to be lacking, the implication is that the photographer has somehow manipulated his or her subject in a way that deceives or misleads the viewer, either intentionally or unintentionally. The premise in these discussions (which can take up a remarkable amount of text for a visual medium) is that there exists some benchmark of physical or social reality that is more closely approached by one camp or another. Here's a random sampling of some of the better known quotes from the literature:

> The photograph has an added realism of its own; it has an inherent attraction not found in other forms of illustration. For this reason the average person

believes implicitly that the photograph cannot falsify. Of course, you and I know that this unbounded faith in the integrity of the photograph is often rudely shaken, for, while photographs may not lie, liars may photograph. (Lewis Hine, 1909, early 20th-century social documentary photographer)

Honesty no less than intensity of vision is the prerequisite of a living expression . . . The fullest realization of this is accomplished without tricks of process or manipulation through the use of straight photographic methods. (Paul Strand, 1917, early 20th-century modernist photographer)

Of course, the camera is a far more objective and trustworthy witness than a human being. We know that a Brueghel or Goya or James Ensor can have visions or hallucinations, but it is generally admitted that a camera can photograph only what is actually there, standing in the real world before its lens. (Hannah Höch, painter and photomontagist, quoted in Roditi, 1959)

By the precision of their instrument, by the very mechanical limitations of shutter, lens, and film, they are invested with credibility; simple honesty will render to their pictures the dignity of fact; feeling and insight will give their fraction of a second's exposure the integrity of truth. And truth, universal and applicable as a measuring stick to life, is the objective of the documentary attitude . . . Of course, the line between an "honest" and a dull photograph may be as thin as a knife's edge. There are times when you simply have to pose your model. The difference is in the *kind* of posing. It can be honest and dishonest, interesting and as wooden as a cigar store Indian. (Roy E. Stryker, 1943, head of the Depression-era Farm Security Administration documentary photography project)

"I don't care what you do with that negative, you can retouch it, you can spit on it, you can grind it underfoot. The only thing that matters is if it is honest. If [the picture] is honest, you and everybody can tell. If it is dishonest, you and everybody can tell" . . . that explains what good photography and any good art is all about. (Portrait photographer Arnold Newman, 2003, paraphrasing a conversation with American photo icon Alfred Stieglitz)

Our task is to perceive reality, almost simultaneously recording it in the sketchbook which is our camera. We must neither try to manipulate reality while we are shooting, nor must we manipulate the results in the darkroom. These tricks are patently discernable to those who have eyes to see. (Henri Cartier-Bresson, 1952, master photojournalist and founder of Magnum photo agency)

For me the true business of photography is to capture a bit of reality (whatever that is) on film . . . if, later the reality means something to someone else, so

much the better. (Gary Winogrand, quoted in Lyons, 1966, quintessential American street photographer)

Although there is nothing unprejudiced about any representation, in the modern era, attempts at a necessarily false objectivity in relation to meaning have periodically been made . . . Photography, dressed as science, has eased the path of this feigned innocence, for only photography might be taken as directly impressed by, literally formed by, its source. (Martha Rosler, 1981, contemporary artist and critic)

Of course, the counterargument has been made as well:

I believe that this whole question of some photography being "true" and some "untrue" is a non-question. Photography is not objective; it never was objective. It has never told the truth any more than any other form of artistic communication can . . . Some people accept this but still argue that the photograph remains in some way uniquely honest . . . They cling to the idea that the photograph is an inherently "real" or honest image and as such is always on a different plane from an obviously subjective form of visual communication such as painting. (Tibor Kalman, 1994, designer and editor of Benetton-sponsored magazine, *Colors*)

Nothing is more misleading than the old adage that "the camera does not lie" . . . And when it is further shown that the ability of the camera to "lie" can be controlled and used in a creative sense, one must admit that photography does provide possibilities for doing artistic work. For the word *lie* used in connection with a photograph merely means "deviation from literal reproduction" . . . That one of the greatest misconceptions about photography is expressed in the saying that "the camera does not lie," anyone who has ever been disappointed in a photograph should gladly agree. (Andreas Feininger, 1953, author of the classic textbook, *Feininger on Photography*)

We know that sensory phenomena are transcribed, in the photographic emulsion, in such a way that even if there is a causal link with the real phenomena, the graphic images can be considered as wholly arbitrary with respect to these phenomena. (Umberto Eco, 1982, novelist and philosopher)

Photographers know perfectly well that the pictures represent a small and highly selected sample of the real world about which they are supposed to be conveying some truth. They know that their selection of times, places, and people, of distance and angle, of framing and tonality, have all combined to produce an effect quite different from the one a different selection from the same reality would produce. (Howard S. Becker, 1986, sociologist)

Images as Data

Why then revisit this less-than-fertile ground? Readers might expect that I, as both a scientist and photographer, would be particularly invested in this debate, because both disciplines are clearly concerned with representations of reality. As a practitioner of the photographic craft, I fall solidly in the skeptic's camp. However, my working perspective is short and to the point: All photos lie.

It's fashionable these days to bring scientific references into the humanities, so let me begin with an admittedly unusual point of departure for an essay on photography: the laws of thermodynamics. These are sometimes paraphrased as "you can't win, you can only break even," and this can only happen at a single unobtainable state: absolute zero. If by "winning" in the photographic sense, we mean presenting some state of absolute truth, then this pessimistic view of the universe is also a fair summary of the inevitable result of these arguments. A photograph, under the most technically ideal, well-intentioned circumstances, can never represent reality. I repeat: Every photograph lies. This is for some trivial and some not-so-trivial reasons, both technical and cultural. Some time and ink may be saved by reviewing, for nonphotographers, some of the obvious and not-so-obvious reasons why this is unavoidable.

However, acceptance of the fact that "all photos lie" is neither as nihilistic nor as useless as readers may suppose, for the next question becomes "how do they lie" followed by "is this important to me, the viewer?" If we are looking at an image of soldiers at war, our tolerance for manipulation is likely to vary depending on whether we want to know what type of equipment they carry versus what happened during the conflict or how individuals respond to the stresses of combat. What we require from the image will determine how much deviation from the "truth" we're prepared to accept.

Put in slightly more academic terms, I propose that we treat photographic images in the same way a scientist treats data. No experimentalist assumes that data are perfect. Indeed, all data are assumed to have a variety of types of error (i.e., deviation from "truth"). The question then becomes not "do these data represent reality," but rather "are the deviations from reality I know to be present relevant to the question I'm asking?" In attempting to obtain an answer, scientists use their familiarity with the methodology to estimate error. They can then determine whether or not the data are adequate for their purposes or need to be reacquired using some more accurate technique. Thus, a measurement of 20 pounds with an error of ±1 pound may be sufficient to determine that your cat is overweight but is unlikely to suffice for calibrating a satellite's payload.

Quantification of error in an image is, of course, less straightforward, but the viewer's methodology can, in principle, be the same as that of the scientist. Viewers should not approach an image with the assumption that it represents reality. They should assume it does not. As has been noted, every image is the result of a large number of technical and aesthetic choices made by the photographer. Each choice introduces subjective elements into the content. Even in a completely automated image acquisition system, software and hardware choices ensure that the mapping of the world onto a two-dimensional image will create distortions relative to how our senses perceive reality. An understanding of the technical and subjective choices inherent in creating an image permits the viewer to identify these sources of error and then make the decision as to whether or not such factors are important.

Unfortunately, the process is complicated by the same effects experienced by Heisenberg's experimentalist, who influences the system he measures. This applies not only to the photographer's influence on the subject but also to the viewer's own assumptions and cultural biases. Nevertheless, the process of viewing must start with at least a minimal awareness of the technical aspects of image acquisition, processing, and presentation, followed by an understanding of the cultural context. Because the technical reasons are easy to describe and conceptually simple, I will discuss these first. The cultural context (meaning anything not easily quantified) is the topic of numerous texts, articles, and lectures. I'll touch on these but leave the brunt of these arguments to others.

Cameras Cannot Replicate Human Vision

The most trivial reason that a photograph can never represent reality is that it's a two-dimensional representation of a three-dimensional world. Even if we were to define *real* as "what our eye sees," we know that two eyes view a scene from slightly different angles. The brain interprets this information as a third dimension, or depth. This stereo effect can be very nicely simulated in either a dual stereo image (19th-century technology) or a two-dimensional screen using special glasses (20th-century technology), and no doubt this limitation will be overcome by the use of holography and virtual imagery at some point in the not too distant future. However, at the moment, photographs remain pretty much two-dimensional representations.

It is also curious that early proponents of "straight" or "honest" photography rarely mention that most of us perceive the world in color. Indeed, color perception, like depth perception, is an important evolutionary trait, allowing the identification of food sources and the tracking of objects. Again, it is

pointing out the obvious to note that, for much of the history of the medium, photographic images were rendered in monochrome.

A more subtle reason that a photograph cannot portray what the eyes see is that film and imaging chips do not "see" light the way the human eye does. Under a fixed set of conditions, the human eye and brain can discern detail over an approximately 10,000-fold range in light intensity. This is called the dynamic range. Photographers measure the amount of light in f-stops, each stop representing a twofold increase or decrease in light intensity. Thus, the eye has a dynamic range of 13 to 14 stops ($2^{13} \approx 8{,}000$). This can be increased even further by changes in pupil diameter to more than 20 stops. In comparison, with some care, reversal film can record detail over an effective range of approximately 100-fold (seven stops, or $2^7 = 128$). Slide film has an even narrower "dynamic range" (about five stops). Digital imaging chips have a dynamic range comparable to that of film. Photographers have been aware of this limitation for some time and have developed strategies to deal with it.

In digital photography, it is now common practice, particularly among landscape photographers, to acquire multiple images of the same scene. These are combined to produce an image with the appearance of an expanded dynamic range. For example, an image is recorded in which the sky is correctly exposed (Figure 3.1, left). The limited range of tonalities that can be captured by the recording medium then renders the foreground a dark, underexposed area lacking detail. A second image is then acquired with the foreground correctly exposed (Figure 3.1, right). This demands that the sky appear overexposed and featureless. The final composite image consists of the correctly exposed areas of the two component images (Figure 3.1, bottom). It is argued that such HDR (high dynamic range) composites more closely approximate what we see because they compress the range of tonalities visible to the human eye into an image capable of being rendered on some display medium—a monitor or paper, for example.

Before this technique is condemned as proof of the shameless manipulation common in the digital world, it should be noted that it has been used, in one form or another, for well over a century. As the English critic, Lady Elizabeth Eastlake, noted 150 years ago, "If the sky be given, therefore, the landscape remains black and underdone; if the landscape be rendered, the impatient action of light has burned out all cloud form in one blaze of light" (Rosenblum, 1997, p. 105).

Early photographers had even less dynamic range to play with and so employed the method of composite printing. Thus, a landscape might be printed from one plate exposed correctly for the foreground and a second plate (often from a collection) exposed correctly for the sky. Later,

Figure 3.1 Merging of two digital images to increase dynamic range.

SOURCE: © 2006 Barry Goldstein.

photographers and cinematographers employed split, neutral-density filters to compress the tonal range of images so that more detail could be recorded on film. Regardless of the method employed, photographers have been routinely manipulating images to compensate for the significantly reduced dynamic range of film relative to human vision since the inception of the medium.

Intensity is only one of light's properties. Light is usually described in photographic terms as having three additional attributes: color, direction, and quality (the latter being what we might generally refer to as contrast: the abruptness of the transition between a dark and light area). Of course, photography means "writing with light," so it should come as no surprise that the intensity, color, direction of application, and quality of the ink will, by definition, have a profound effect on the appearance of an object. This is self-evident to readers who have enjoyed the yellow tones of a late afternoon "golden hour," cringed at the appearance of their face under a bare bulb, or attended a feature film.

We have already discussed how the eye can accommodate a much greater range of intensities than our recording media. There are also very significant

differences in how the brain and eye, compared to film or digital sensor, handle color. Consider the sickly greenish cast of a photograph taken under fluorescent light. Film photographers routinely use filters and gels to adjust the color of light (technically described by *color temperature*) reaching the recording medium. The brain, which has an automatic white balance filter, renders the scene as more neutral. Modern digital cameras either automatically adjust color temperature or allow the user to do so with varying degrees of sophistication.

Similarly, photographers commonly manipulate the other attributes of light, and cinematographers are masters at this. The location of the light source relative to the subject and camera, and the subsequent location of shadows, will determine how the subject is perceived by the viewer. The use of Rembrandt-style lighting in portraiture speaks to the many hundreds of years that painters have understood this. The famous 1963 Arnold Newman photograph of the arms merchant, Alfred Krupp, in which the low angle of the light source gives the subject a ghoulish appearance, offers one of innumerable examples of the editorial uses of lighting. Softboxes, umbrellas, and scrims are but a few of the many light modifiers pressed into service to control how hard or soft a shadow will appear in an image. However, even decisions about whether to photograph a subject in direct sun or in shade, whether to use a polarizer filter to reduce reflections or a red filter to make clouds appear more dramatic in black and white images (a favorite of some photojournalists), represent quite conscious decisions about how to convey the photographer's own brand of reality.

The choices made in the simple operation of the camera itself offer several examples of the differences between what the camera records and what the eye sees (or, more accurately, how the brain interprets what the eye sees). The first of these concerns depth of field. This is the width of a slab of space perpendicular to the direction of gaze within which objects appear sharp. All else being equal, this width, or depth, is fixed in a photograph by the diameter of the aperture, or iris, in front of the lens. The photographer (or the software in an automated camera) must make a deliberate decision about how much depth of field to incorporate in an image. Ansel Adams and others in the f/64 school of landscape photography employed small apertures for maximum depth of field, rendering both the boulder in the foreground and the mountain in the distance sharp. However, the use of wide apertures to produce a shallow, or selective depth of field is also a common technique. The viewer's attention is focused on a particular part of the image by blurring the contents of the frame in front of and behind the point of interest.

In human vision, depth of field is constantly changing. Selective depth of field can be achieved by fixing one's gaze on a single point (for example,

your thumb placed a foot in front of your nose." However, under normal circumstances, perceived depth of field is much greater. This results from frequent changes in the direction of our gaze, accompanied by rapid changes in the aperture of our iris and other factors. Thus, the photographer's selection of a correct aperture to most closely approximate reality will immediately fix the depth of field to a limited subset of what our eye perceives.

Another basic difference between what the camera and what the eye sees is in the field of view. Without moving your head, you will be aware of objects within an approximately 180-degree arc centered on your nose. However, only a subset of this—about 50 degrees—is perceived as sharp. In normal vision, we overcome this restriction by movements of our head and gaze, accompanied by rapid refocusing. As with depth of field, this creates the perception of a wider angle of view.

The field of view seen by a camera is determined by the focal length of the lens. Lenses with short focal lengths are called wide angle lenses because they provide a large field of view. Conversely, lenses with long focal lengths (telephoto lenses) have narrow fields of view. Most people are familiar with changing the focal length via operation of a zoom lens, usually to adjust framing. What is less widely understood is the fact that, as the focal length of the lens changes, so does the relative size of near and distant objects. This is called perspective.

In vision, perspective changes by adjusting relative distances. The closer we are to an object, the larger it appears relative to its background. We cannot make large changes in the focal length of our eyes. However, the experienced photographer makes a conscious choice of focal length, not just to adjust the angle of view but also to produce the desired perspective.

A camera with a lens having a 50 mm focal length yields about the same perspective as human vision, and for this reason, it is called a normal lens. Telephoto lenses with long focal lengths diminish the effect of perspective, making near and far objects appear of similar size. This produces the familiar photographic effect of stacking, where, for example, people on a crowded street are made to appear to be walking on top of one another. More subtly, such lenses are commonly used in portraiture because the results are considered flattering. Conversely, wide angle lenses with short focal lengths exaggerate perspective, making near objects appear larger than normal and distant objects smaller. Adherents of a particular school of contemporary German photography make portraits with a wide angle lens held close to the subject. This exaggerates the features (particularly the nose) and is considered droll.

The wide angle look is also very popular today in photojournalism, not only because it crams more information into the frame, but also because of

the dramatic effects it can achieve by exaggerating perspective. Think of the trope, seen commonly in newspapers, of a cropped face looming in the foreground (a soldier?), the main action occurring in the midground (a burning vehicle?), and some content offering ironic comment on the whole affair in the distant background (perhaps a child with a toy?).

Falling back on our language of images as data, we might expect the viewer to have little tolerance for error in the products of photojournalism. However, little criticism is heard of manipulation of the truth by using wide angle lenses. This may simply be due to the fact that most viewers are unaware of the photographer's ability to manipulate perspective.

There is one last difference between what we see and what the camera records. It may seem obvious, but it probably has the most profound effect on the medium of photography; indeed, this difference defines the medium. Thus, I'll set this property off by itself:

A photograph records a brief moment in time.

This may seem self-evident but bears some thinking about. Consider an artist working in a two-dimensional medium who wishes to convey impressions about something. For simplicity, let's pick an obviously time-dependent event—say, a boxing match. Painters might go to a number of matches over the course of days, weeks, or years and later produce a work that integrates their impressions over time; a summation of experiences over a potentially lengthy period with the intent to capture some property that is important to the artist.

Photographers may do the same thing but are limited to capturing a two-dimensional image over a period somewhere in the range of 1/1000 of a second to 1 second. Of course, photographers can capture as many of these images as they want, but the practicalities of presenting the work would limit their ultimate choices to a few tens of images, at most. In the middle of the spectrum, videographers might capture segments that are many minutes or hours long (although the segments may be chosen over any period). Even in the case of so-called static subjects, changes in the environment (such as the direction, intensity, and color of light) will not be captured by the still photographer.

Not only is this static view of the world vastly different from what our visual system processes under normal circumstances, it can be argued that this is wholly alien to how our brains evolved to perceive the world. For example, we are much more sensitive to, and stimulated by, movement in our field of view. Yet, it is widely argued that the temporal limitation of a photograph is one reason that such images are so compelling. Whereas our immediate perceptions consist of three-dimensional, ever-changing views,

photographs are seen as metaphors for our long-term visual memories. Thus, a static image has the power to evoke very strong emotional responses. The relationship between photographs and visual image processing and storage is the subject of a large literature. For now, however, we'll just consider an important corollary of this time-freezing property of photography.

The "Decisive Moment" Is Really the "Decided Moment"

The photographer Henri Cartier-Bresson (who died recently at the age of 95) is widely known. Associated with his name is the concept of the "decisive moment," that is, that single point in time that captures some truth/essence/jene sais quoi about the subject. The photograph that is often used to illustrate this idea (*Place de l'Europe, Paris, 1932*) shows a man jumping over a puddle, caught by the shutter in midair (Figure 3.2, center).

Figure 3.2 The "decided moment," before and after (with apologies to Cartier-Bresson). Center Image: Henri Cartier-Bresson *Place de l'Europe, Paris, 1932*. © Henri Cartier-Bresson/Magnum. Left and right images © Barry Goldstein.

This is a compelling image, for many reasons, and has been extensively analyzed. However, consider the moments before and after the image was taken (Figure 3.2, left and right). Did the man stand at the edge of the dry ground and ponder thoughtfully his next move, or did he take a running leap with abandon? Did he land gracefully or slip comically? Neither of these moments was of interest to Cartier-Bresson. His *intent* (more on this term

later) was to capture the particular moment between these events, in which the subject is figuratively (and literally) suspended in time. This moment was not so much deci*sive* as deci*ded*. Any photograph represents a choice by the photographer to depict one among an infinite number of moments. This choice may be made during the moment of capture (consider even this language) or during editing. It may be conscious or unconscious, but a choice it is.

Temporal and Spatial Editing

The choice of the decided moment might itself be considered a subset of the process of editing—in this case, the choice of one moment over another—that we might refer to as *temporal editing*. A more familiar form of temporal editing is the process of selecting one image over another—each, of course, representing a different moment in time. We might contrast this with *spatial editing,* the selection of one portion of an image over another. Photographers call this cropping, and those concerned with truth fight wars over the subject.

Why this occurs is a puzzle. The act of making an image is itself one of cropping or selecting a subset of the field of view to record. Thus, cropping begins with the choice of where to point the camera. However, the term usually refers to the postacquisition act of removing a portion of the frame that has already been recorded. This is often discouraged, and in more extreme cases, it is considered cheating. This is the reason some images are shown with the film border preserved in the print, a form of saying, "I did this without cropping." The vilification of cropping goes well beyond the sensible encouragement of beginning photographers to carefully consider all elements within the viewfinder before acquisition. It is as if the 35 mm film frame had somehow become a sort of standard for photographic reality, which, once all acquisition choices have been made, is never to be altered. The paradox created by this mode of thinking is illustrated by the following *gedanken* experiment.

Suppose a photographer (in this case, W. Eugene Smith, in his famous 1948 *Life* magazine photo essay, "Country Doctor") set up several stationary cameras of varying common formats, all having a lens of the same focal length and linked to the same shutter control. At the same "decided moment," he records a scene (Figure 3.3). If, after examining all images, he selects one over the other, is this cropping? Does the act of recording all the images simultaneously require that all be displayed? It is interesting to me that those who do all of their cropping "in camera" rarely feel compelled to

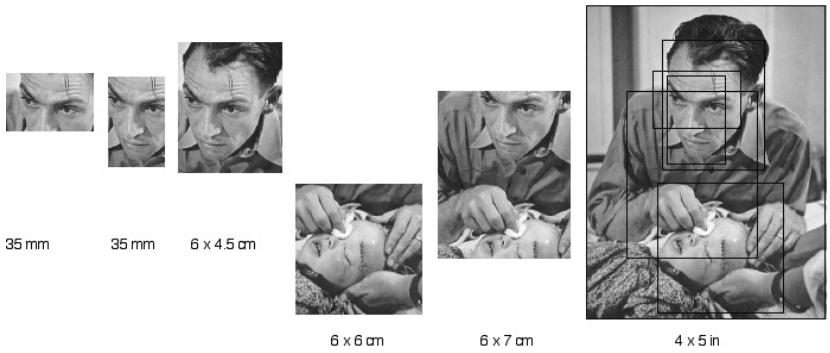

Figure 3.3 A gedanken experiment: spatial editing using different film formats. Original image: H. Eugene Smith. Untitled (Dr. Ceriani with injured child) 1948, From "Country Doctor," *Life* Magazine, September 1948 © The Heirs of W. Eugene Smith.

mention that the image displayed is one of many from a contact sheet or memory card. Temporal editing is generally more permissible than spatial editing.

However, if a photographer is fortunate or unfortunate enough to have produced an iconic image, all editing becomes fair game. Thus, much is made of the fact that Diane Arbus's dour boy with his toy grenade is seen in other images on the contact sheet to be behaving like, well, like a boy. It is as if the recording and display of the more famous frame required that the 10-year-old subject spend his entire life posing as a sociopath.

There is no question that postacquisition editing, whether subtle or massive, will influence our perception of the particular reality that was recorded. To offer another famous example, consider Nick Ut's 1972 Pulitzer Prize-winning Vietnam War photograph of Phan Thi Kim Phuk, the "napalm girl." The version that is most often published and displayed is shown at left in Figure 3.4. The full frame is shown at right in Figure 3.4, revealing another photographer on the right-hand edge of the frame who, according to a gallery talk by Ut in January 2001 at the George Eastman House, was reloading his camera.

Both images are horrific, although perhaps for different reasons. However, is one more real or more honest than the other? Those who argue that the full frame should be displayed might also argue that a larger format should have been used, so that even more of the subject's context could be recorded. Why not argue that only motion picture film should have been used so that

Figure 3.4 Spatial editing via cropping.

SOURCE: Photograph: Trang Bang 8.6.72: Vietnam Napalm, © 1972 Nick Ut/AP.

we could see a larger subset of the infinity of decided moments? But would a motion picture without sound be doctrinally permissible in this case? Any witness to such events will also tell you that smell is a significant component of the horror—a sense whose recording is mercifully beyond current technology. The *reductio ad absurdum* of these arguments quickly becomes apparent.

Every Photograph Results From a Series of Choices

We have considered perhaps the most important choice a photographer can make: when to trip the shutter. We have also considered the choice of aperture and focal length, as well as postacquisition editing. However, any number of other choices are also made.

I've not addressed any of the other postacquisition manipulations that are common in both traditional and digital photography: toning, contrast adjustment, dodging, burning, sharpening, color balance, and a host of other possible modifications. One example may suffice; the now notorious case of the June 27, 1994, *Time* and *Newsweek* magazine covers showing O. J. Simpson's mug shot at the time of his arrest for killing his wife and her companion. The *Time* image was vignetted and adjusted to a darker tone and different hue relative to that used on the cover of *Newsweek*. A great deal of discussion addressed the manipulations used in *Time*'s version, as well as the fact that this made the subject appear more threatening. Of perhaps equal

interest was the tacit assumption that the *Newsweek* cover was a better reference to the "truth."

We have also not discussed the medium and method the photographer chooses to display the image: electronic or print, framed on a wall or flat on the page, as a single image or part of a series. But even if we consider only the purely technical decisions, we've seen that they are numerous. Thus, we come to a great truth about photography:

Every photograph is manipulated.

Try as I might, I can conceive of no photograph that is not manipulated in some way, simply by dint of the many choices that are made between image capture and presentation. Every photograph represents the photographer's choices, hence his interpretation of reality. Even if the photographer wants to capture some absolute reality (which, of course, many do not), we've seen that, for purely technical reasons, this is unobtainable with current technology. However, when critics or theorists talk about the honesty or integrity of work, they are rarely referring to the purely technical aspects of the process. In fact, many ignore the process altogether, a stunning omission given the fact that these technical choices can represent a large component of the artistic interpretation. However, it is certainly true that technical choices are not the only factor that will determine the viewer's response to the image. The photographer's choices will determine content. The viewer's response will depend not only on content, but on context and assumptions about intent.

Content, Intent, and Context. Oh My!

When looking at a photograph, it is useful to first consider all of the technical choices made by the photographer. All of these result in the content of the image: what's in the frame (or, more accurately, what's before us, since the frame itself may be an important part of the image). However, the more interesting question is often why the photographer made these choices. Were they conscious or unconscious? What did he or she intend that we notice, and why? Do we see something that was perhaps unintended? If we decide that a certain intent is present, does it work effectively, or could other choices have been more effective? What makes these questions interesting is that they often have more than one answer, or no answer at all. Nevertheless, volumes are written about this because the relationship between content and intent is at the heart of this question of honesty.

We've seen that every image results from manipulations (i.e., choices) on the part of the photographer. These produce some response from the viewer. The question then is, did the photographer intend the viewer to be aware of these manipulations when responding to the image? We tend to feel pretty clever when we respond to something, and, after some thought and analysis, can say why. This may be a gratifying experience. We can also enjoy responding to something without having a clue as to why. However, viewers tend not to react kindly when they're fooled. If we respond in one way (say, compassion for war refugees) and then find that the image was staged (the war refugees are out-of-work actors, requiring a wholly different form of compassion), we tend to be pissed off. Here the photographer intended that we remain unaware of his or her choices, and we may interpret this as deception. Of course, being fooled can itself be a positive experience, as long as we're in on the joke.

The issue of deception in photography is, of course, most often raised in news and documentary work. To what extent did Mathew Brady rearrange corpses in his Civil War photography? Was Joe Rosenthal's image of the raising of the American flag over Mount Suribachi on Iwo Jima staged? Does it matter? Again, the question can be reframed in terms of the photographer's intent, the viewer's interpretation of that intent, and the viewer's reaction to any discrepancies between the two. Theorists talk about our expectation of *indexicality* in a photograph: that the subjects were, at some point, as they appear in the image. Nor does this question apply only to obvious manipulations of the image or subject. Can a photographer from Background A (pick one: privileged, urban, male . . .) adequately/effectively/honestly represent subjects from Background B (poor, rural, female . . .) is a question that generates a great deal of critical ink. Again, the question reduces to that of the degree of mismatch between photographic intent and viewer interpretation.

Last, we shouldn't forget that the lens has two sides. We've discussed how the photographer's intent may lead to manipulation of the subject, either via technical choices, literal staging, or more subtle influences. However, the subject will have an intent of his or her own, and depending on the power relationship that exists, the subject's intent may easily lead to manipulation of the photographer. Anyone who has photographed the rich and famous understands how the photographer may end up subservient to the demands of the subject.

Is it possible to find any image in which the intent is straightforward, the level of manipulation well defined, and the viewer's interpretation entirely consistent with the photographer's goals? Consider Figure 3.5. As you may recognize, this is a mammogram, a technical image obtained using a

Figure 3.5 An objective image?

SOURCE: © 2001 Trustees of Dartmouth College.

controlled set of highly standardized choices (subject position, light [x-ray] and camera properties, recording medium, post-processing, etc.). The first viewer is generally the photographer, that is, the radiologist, whose intent also seems well defined: obtain diagnostic information about the presence or absence of a tumor. The fact that the patient, another highly interested viewer, has subjected herself to this procedure also suggests that she understands the photographer's intent.

Have we finally found, in technical imagery, the closest we're likely to come to the absolute zero of truth? As Malcolm Gladwell (2004) points out, despite ever improving technical accuracy, a content-intent mismatch still exists. It turns out, not surprisingly, that different viewers (radiologists) see different things, and even when they do agree on what they see, they will often differ about its significance. As Gladwell notes,

> Would taking a better picture solve the problem? Not really, because the problem is that you don't know for sure what you're seeing, and as pictures have

Figure 3.6 Viewer response depends in part on context.

SOURCE: Reprinted with permission of United States Holocaust Memorial Museum.

> become better, we have put ourselves in the position where we see more and more things that we don't know how to interpret. When it comes to [breast cancer], the mammogram delivers information without true understanding. (p. 80)

In fact, one can take the argument further and note that, even if one removes the camera entirely from the equation, two individuals observing the same reality may disagree. One need only consult the literature on the unreliability of eyewitness testimony.

Of course, some would argue that it is meaningless to even consider the relationship between the photographer's intent and the viewer's interpretation because the latter will change according to the viewer's time and culture: that is, context. Everyone these days is acutely aware that the interpretation of content depends on context. Consider an image of men dressed in doctor's gowns working over a supine body on a hospital gurney (Figure 3.6). Our response to what appears to be a rather uninspired example of medical documentary photography changes dramatically when we learn that the picture was taken in Buchenwald. The fact that the intent of the photographer was merely to document a scene, while not irrelevant to our response, is probably not central to it.

Despite the fact that our interpretation of content will always rest on the shifting sands of context, I would argue that it is always a useful exercise to question the intent of the photographer in creating content. At a minimum, it makes us question our own background and biases and thus broadens our point of view. Furthermore, it may help add some precision to terms such as honesty, integrity, and deception. Most important, it makes us think about what we're looking at, and this is the greatest compliment we can pay any work.

Looking at Images as Data—and Not

To summarize my arguments:

1. Every image is manipulated, thus no image represents reality.
2. Content depends on a large number of technical and aesthetic choices made by the photographer, based on his or her intent.
3. The response of the viewer to the image will be based on
   - Content
   - Perception of intent
   - Context

How to make use of this photographic worldview? When looking at an image, first and foremost, I note my emotional response: disgust, envy, heat, sensuality—my first eye–brain impressions. I then catalog as best I can the choices made by the photographer, technical and aesthetic, before, during, and after image acquisition, and I ask myself how these contribute to my response. From a professional point of view, I may note some of the techniques employed, with an eye toward copying them myself. Based on these and any other available information (text, context), I question the photographer's intent. Is my response consistent with the perceived intent, counter to it, or a combination of the two? In other words, how am I being manipulated? Again, I assume that the data (i.e., the image) have some limits of error (i.e., deviates from reality as I might have perceived it) for all the reasons discussed above. My only concern is how I feel about this. In more analytical terms, is the degree of error acceptable based on what I require from the image? The answer will differ depending on whether the photograph hangs on a gallery wall, appears in a newspaper, illustrates a scientific journal article, or is presented in any of the innumerable other ways in which images confront us in life. What I will never do is ask, is this photo real? I know it is not.

Awareness of these factors does not disappear when my role changes from viewer to photographer. Indeed, intent and the craft to execute it are recruited to convey, not reality, but some consciously transformed version of it that I want the viewer to experience.

Having offered this rather dispassionate prescription for looking at images, I will make a confession. Despite my potential knowledge of all of the methodology employed, the intent of the photographer, and the context in which the image was made and despite my assumption that photographic truth, like absolute zero, can be approached, but never attained, I now admit that some images strike me as far more honest than others. How can this response coexist with my arguments that photographs can never represent reality? The cynic will argue that what I am responding to is the appearance of honesty—a combination of masterful technique and advantageous context that simultaneously draws attention away from technical artifice while encouraging a perceived intent on the part of the photographer to remain invisible. On the other hand, this begs the question as to whether honesty has anything to do with reality.

Having occasionally made light of others' attempts to address these questions, I now admit to offering little in the way of an alternative. In the end, I am convinced that theorizing about photography is similar to theorizing about sex—one can indeed come up with some creative and useful insights, but a bit of practice will tell you much of what you need to know. I therefore encourage all who engage in the debate to occasionally pick up a camera and make your own truth. The exercise may provide some fresh insight into a medium that, at least for me, still retains a few mysteries.

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