Over Exposed

ESSAYS ON

CONTEMPORARY PHOTOGRAPHY

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Ectoplasm: Photography in the Digital Age

FACED WITH the invention of photography, French painter Paul Delaroche is supposed to have declared, "from today, painting is dead!"[1] Now, a little over 150 years later, everyone seems to want to talk about photography's own death. Tim Druckrey, for example, has claimed that the "very foundation and status of the [photographic] document is challenged." Fred Ritchin speaks of the "profound undermining of photography's status as an inherently truthful pictorial form." Ann-Marie Willis speculates about the possible disappearance of photography "as a technology and as a medium-specific aesthetic." And William J. Mitchell has asserted that "from the moment of its sesquicentennial in 1989 photography was dead—or, more precisely, radically and permanently displaced.[2]

This sustained outburst of morbidity appears to stem from two related anxieties. The first is an effect of the widespread introduction of computer-

1. Although this exclamation is one of the most repeated quotations in the history of photographic discourse, there is no substantial evidence that Delaroche ever actually made such a statement. It first appears in Gaston Tissandier's *A History and Handbook of Photography*, trans. J. Thomson (London: Sampson, Low, Marston, Low and Searle, 1876), p. 63. Contrary to this account, Delaroche was the first painter of consequence publicly to support the daguerreotype and to argue for its importance as an aid to artists. See Helmut and Alison Gernsheim, *L. J. M. Daguerre: The History of the Diorama and the Daguerreotype* (New York: Dover, 1968), p. 95.

2. See Timothy Druckrey, "L'Amour faux," *Digital Photography: Captured Images, Volatile Memory, New Montage* (exhibition catalog, San Francisco: San Francisco Camerawork, 1988), pp. 4-9; Fred Ritchin, "Photojournalism in the Age of Computers," in *The Critical Image: Essays on Contemporary Photography*, ed. Carol Squiers (Seattle: Bay Press, 1990), pp. 28-37; Anne-Marie Willis, "Digitization and the Living Death of Photography," in *Culture, Technology & Creativity in the Late Twentieth Century*, ed. Philip Hayward (London: John Libbey, 1990), pp. 197-208; and William J. Mitchell, *The Reconfigured Eye: Visual Truth in the Post-Photographic Era* (Cambridge, Mass.: MIT Press, 1992), esp. chap. 20. For further commentaries on the purported death of photography, see Fred Ritchin, "The End of Photography as We Have Known It," in *PhotoVideo*, ed. Paul Wombell (London: Rivers Oram Press, 1991), pp. 8-15, and Kevin Robins, "Will Image Move Us Still?" in *The Photographic Image in Digital Culture*, ed. Martin Lister (London: Routledge, 1995), pp. 29-50.

driven imaging processes that allow "fake" photos to be passed off as real ones. The prospect is that, unable to spot the "fake" from the "real," viewers will increasingly discard their faith in the photograph's ability to deliver objective truth. Photography will thereby lose its power as a privileged conveyor of information. Given the proliferation of digital images that look exactly like photographs, photography may even be robbed of its cultural identity as a distinctive medium.

These possibilities are exacerbated by a second source of concern: the pervasive suspicion that we are entering a time when it will no longer be possible to tell any original from its simulations. Thing and sign, nature and culture, human and machine; all these hitherto dependable entities appear to be collapsing in on each other. Soon, it seems, the whole world will consist of an undifferentiated "artificial nature." According to this scenario, the vexed question of distinguishing truth from falsehood will then become nothing more than a quaint anachronism—as will photography itself.

So photography is faced with two apparent crises, one technological (the introduction of computerized images) and one epistemological (having to do with broader changes in ethics, knowledge, and culture). Taken together, these crises threaten us with the loss of photography, with the "end" of photography and the culture it sustains. But exactly what kind of end would this be?

It should not be forgotten that photography has been associated with death since the beginning. Some early onlookers, for example, associated the daguerreotype process with black magic. Nadar tells us with some amusement that his friend Balzac was one person who had an "intense fear" of being photographed:

> According to Balzac's theory, all physical bodies are made up entirely of layers of ghostlike images, an infinite number of leaf-like skins laid one on top of the other. Since Balzac believed man was incapable of making something material from an apparition, from something impalpable—that is, creating something from nothing— he concluded that every time someone had his photograph taken, one of the spectral layers was removed from the body and transferred to the photograph. Repeated exposures entailed the unavoidable loss of subsequent ghostly layers, that is, the very essence of life.[3]

An excess of life was actually a bit of a problem for those early photographers trying to make portraits. Due to the slowness of exposure times, only a slight movement of the subject's head was enough to result in an unsightly blur. Even when this could be avoided, some critics complained that the strain

3. Nadar, "My Life as a Photographer" (1900), *October 5* (Summer 1978), p. 9.

of keeping steady made the subject's face look like that of a corpse. However, a simple solution was soon available. Those wanting their portrait taken simply had to submit to having their head placed within a constraining device which ensured a still posture for the necessary seconds. This device worked in effect to transform the lived time of the body into the stasis of an embalmed effigy. In other words, photography insisted that, if one wanted to appear lifelike in a photograph, one first had to act as if dead.

Portrait photographers soon took this association a step further, developing a lucrative trade in posthumous photographs or "memento mori." Grieving parents could console themselves with a photograph of their departed loved one, an image of the dead *as* dead that somehow worked to sustain the living. This business was taken to another level in 1861, when a Boston engraver announced that he had found a successful way to photograph ghosts. Thousands of photographs were produced that showed the living consorting with the dead, a comfort for those inclined toward spiritualism and a financial bonanza for those who were prepared to manipulate the photographic technology of double exposure.[4]

But not everyone benefited from photography's business success. As Delaroche had predicted, photography's introduction into the capitals of Western Europe spelled doom for many established image-making industries. Miniature painting, for example, was quickly made extinct by the magically cheap appearance of the daguerreotype's exact, shiny portraits. As N. P. Willis, the first American commentator on photography, warned in April 1839, other art practices were also under threat from the new apparatus.

> Vanish equatints [*sic*] and mezzotints—as chimneys that consume their own smoke, devour yourselves. Steel engravers, copper engravers, and etchers, drink up your aquafortis and die! There is an end of your black art....The real black art of true magic arises and cries avaunt.[5]

But it was not only individual reproductive practices that found themselves having to face a photographically induced euthanasia. In Walter Benjamin's famous essay on mechanical reproduction, he argued that photography would even, by inexorably transforming the aura of authenticity into a com-

4. For more on this genre of photography, see Fred Gettings, *Ghosts in Photographs: The Extraordinary Story of Spirit Photography* (New York: Harmony Books, 1978); Dan Meinwald, *Memento Mori: Death in Nineteenth Century Photography* (CMP Bulletin, 9: 4, California Museum of Photography, Riverside, 1990); Jay Ruby, *Secure the Shadow: Death and Photography in America* (Cambridge, Mass.: MIT Press, 1995); *The Kirilian Aura: Photographing the Galaxies of Life*, ed. Stanley Krippner and Daniel Rubin (New York: Doubleday Anchor, 1974); Rolf H. Krauss, *Beyond Light and Shadow: The Role of Photography in Certain Paranormal Phenomena: A Historical Survey* (Tucson: Nazraeli Press, 1994).

5. N. P. Willis, "The Pencil of Nature" (April 1839), as quoted in Alan Trachtenberg, "Photography: The Emergence of a Keyword," in *Photography in Nineteenth-Century America*, ed. Martha A. Sandweiss (Fort Worth: Amon Carter Museum of Western Art, 1991), p. 30.

modity, hasten the demise of capitalism itself. As a mechanical manifestation of the capitalist mode of production, photography, he argued, necessarily bore the seeds of capitalism's own implosion and demise. In his complicated tale of sacrifice and resurrection, aura would have to die at the hand of photography before any truly authentic social relations could be brought back to life. As Benjamin put it, "one could expect [capitalism] not only to exploit the proletariat with increasing intensity, but ultimately to create conditions which would make it possible to abolish capitalism itself."[6] Capitalism is therefore projected as its own worst nightmare, for its means of sustenance is also its poison. And, for Benjamin at least, photography enjoys this same dual character. Like the daguerreotype, it is a force that is simultaneously positive and negative.

Photography's flirtation with life and death does not end there. It could be argued, for example, that the very idea of photography repeats the theme. As Benjamin reminds us, the beginnings of this idea remain obscured by a "fog" of uncertainties.[7] Frequently cited but seldom seen, the photograph exercised a hallucinatory presence well before its official invention, being conceived by at least twenty different individuals between 1790 and 1839. The manner and timing of photography's conception is in fact a complex historical question. Why didn't previous generations of scholars come up with the idea? Why does it only appear in European discourse around 1800? And this appearance is itself a strange phenomenon, one perhaps best described as a palimpsest, as an event that inscribed itself within the space left blank by the sudden collapse of Natural Philosophy and its Enlightenment worldview.[8] As Michel Foucault says of this moment, "what came into being...is a minuscule but absolutely essential displacement which toppled the whole of Western thought."[9] In other words, photography's birth pangs coincided with both the demise of a premodern episteme, and with the invention of a peculiarly modern conjunction of power-knowledge-subject; the appearance of one was only made possible through the erasure of the other.[10]

A life born of death, a presence inhabited by absence—photography's genealogy is repeated in each of its individual instances. William Henry Fox Talbot's earliest contact prints, for example, also hovered somewhere between life and death; perversely, the very light needed to see them proved fatal to their continued visibility. In a sense, Talbot's struggle to overcome this short-

6. Walter Benjamin, "The Work of Art in the Age of Mechanical Reproduction" (1936), in *Video Culture: A Critical Investigation*, ed. John Hanhardt (New York: Visual Studies Workshop, 1986), p. 27.

7. Walter Benjamin, "A Short History of Photography" (1931), in *Classic Essays on Photography*, ed. Alan Trachtenberg (New Haven, Conn.: Leete's Island Books, 1980), p. 199.

8. Michel Foucault, *The Order of Things: An Archaeology of the Human Sciences* (New York: Random House, 1970), pp. 206-7.

9. Ibid., p. 238.

10. For more detailed versions of this argument, see my *Burning with Desire: The Conception of Photography* (Cambridge, Mass.: MIT Press, 1997).

coming was a struggle with mortality itself. Even after he had learned how to arrest his wraithlike apparitions (or at least to delay their departure), Talbot still had to explain the nature of their conjuring. What exactly were these lingering presences, these spectral traces of an object no longer fully present?

In his first paper on photography in 1839, Talbot called his process the "art of fixing a shadow," conceding that the capturing of such elusive shades "appears to me to partake of the character of the marvelous."

> The most transitory of things, a shadow, the proverbial emblem of all that is fleeting and momentary, may be fettered by the spells of our "natural magic," and may be fixed forever in the position which it seemed only destined for a single instant to occupy. . . . Such is the fact, that we may receive on paper the fleeting shadow, arrest it there and in the space of a single minute fix it there so firmly as to be no more capable of change.[11]

Photography is, for Talbot, the desire for an impossible conjunction of transience and fixity, a visual simultaneity of the fleeting and the eternal. It is an emblematic something, a "space of a single minute," in which space *becomes* time, and time space. Louis-Jacques-Mandé Daguerre explicated his process in similarly temporal terms. In March 1839, Daguerre made three identical views—at morning, noon, and in evening light—of the Boulevard du Temple outside his studio window. This series not only calibrated the passing of time in terms of changing shadows and degrees of legibility, but also presented time itself as a linear sequence of discrete but interrelated moments. By bringing the past and the present together in the one viewing experience, Daguerre showed that photography could fold time back on itself.

In stopping or turning back time, photography appeared to be once again playing with life and death. No wonder then that "necromancy" (communication with the dead) is a term used by a number of contemporary journalists to describe the actions of both Daguerre's and Talbot's processes. Some also noted photography's peculiar engagement with time. *The Athenaeum*, for example, commented in 1845 that "photography has already enabled us to hand down to future ages a picture of the sunshine of yesterday."[12] Photography allowed the return of what had come before—and with it a prophecy of future returns. Whatever its nominal subject, photography was a visual inscription of the passing of time and therefore also an intimation of every viewer's own inevitable passing.

11. Henry Talbot, "Some Account of the Art of Photogenic Drawing" (1839), in *Photography: Essays and Images*, ed. Beaumont Newhall (New York: Museum of Modern Art, 1980), p. 25.

12. *The Athenaeum*, no. 904 (22 February 1845), as quoted in Larry J. Schaaf, "A Wonderful Illustration of Modern Necromancy: Significant Talbot Experimental Prints in the J. Paul Getty Museum," in *Photography: Discovery and Invention*, ed. Weston Naef (Los Angeles: Getty Museum, 1990), p. 44.

Over a century later, Roland Barthes found himself describing photography in remarkably similar terms. In the process, he shifted his own analysis of the medium from a phenomenology of individual images to a meditation on the nature of death in general. He speaks in *Camera Lucida* of the "stigmatum" of the "having-been-there" of the thing photographed. Photography, he says, gives us a "this will be" and a "this has been" in one and the same representation. Every photograph is therefore a chilling reminder of human mortality. Pondering the recent death of his own mother, Barthes looks at an 1865 portrait of a condemned man and observes that the subject depicted there is dead, and is going to die. "Whether or not the subject is already dead, every photograph is this catastrophe." On further reflection, he takes the temporal perversity of this future anterior tense to be the ultimate source of photography's plausibility. For, according to Barthes, the reality offered by the photograph is not that of truth-to-appearance but rather of truth-to-presence, a matter of being (of something's irrefutable place in time) rather than resemblance.[13]

Given this historical background, what does it mean then to speak of the death of photography by digital imaging? There is no doubt that computerized image-making processes are rapidly replacing or supplementing traditional still-camera images in many commercial situations, especially in advertising and photojournalism. Given the economies involved, there will probably come a time when almost all silver-based photographies are superseded by computer-driven processes. Eastman Kodak, for example, in the mid-1990s began putting increasing research and advertising emphasis on its electronic imaging products, worried that it will soon be left behind in the ever-expanding digital industry. As a financial analyst told the *New York Times*, "film-based information is a dying business."[14]

Bill Gates has certainly come to this conclusion. In 1989, the world's richest man established a company specifically to buy and sell the electronic reproduction rights to an array of pictures so extensive that they "capture the entire human experience throughout history."[15] This company, Corbis Corporation, acquired the Bettmann Archive in 1995 and with it came control over one of the world's largest private depositories of images, sixteen million in all. Corbis's principal business involves leasing these images, in the form of data stored on digital files, to those who are willing to pay for specified electronic "use-rights." Thousands of new images are being added to the Corbis collection every week, drawn from a multitude of individual photographers as well as institutions such as NASA, the National Institutes of Health, the Library of Congress, the National Gallery of Art

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13. Roland Barthes, *Camera Lucida: Reflections on Photography* (New York: Hill and Wang, 1981).

14. See Claudia H. Deutsch, "Kodak Talks to Buy a Wang Software Unit," *New York Times*, 4 October 1996, C16.

15. This aspiration was voiced by Corbis's CEO Doug Rowen in Kate Hafner, "Picture This," *Newsweek*, 24 June 1996, pp. 88-90.

in London, the Philadelphia Museum of Art, and the Hermitage in St. Petersburg. According to its fall 1996 catalog, Corbis was able to offer its customers over 700,000 digital images to choose from. It is worth noting that when, in April of that same year, Corbis struck an agreement with the Ansel Adams Publishing Rights Trust regarding Adams's photographs, they only bothered to acquire the *electronic* reproduction rights (the traditional rights remaining with the Trust). It seems that the basic assumption behind Corbis is that, in the near future, digital images are the only kind that are going to matter.[16]

The dissemination of photographs as data raises a number of issues, not least of which is the question of image integrity. The fact is that, whether by scanning in and manipulating bits of existing images, or by manufacturing fictional representations on screen (or both), computer operators can already produce printed images that are indistinguishable in look and quality from traditional photographs. The main difference seems to be that, whereas photography still claims some sort of objectivity, digital imaging is an *overtly* fictional process. As a practice that is *known* to be capable of nothing but fabrication, digitization abandons even the *rhetoric* of truth that has been such an important part of photography's cultural success. As their name suggests, digital processes actually return the production of photographic images to the whim of the creative human hand (to the *digits*). For that reason, digital images are actually closer in spirit to the creative processes of art than they are to the truth values of documentary.

This is perceived as a potential problem by those industries that rely on photography as a mechanical and hence nonsubjective purveyor of information. Anxious to preserve the integrity of their product, many European newspapers at one point considered adding an 'M' to the credit line accompanying any image that has been digitally manipulated.[17] Of course, given that such a credit line will not actually tell readers what has been suppressed or changed, it simply casts doubt on the truth of every image that henceforth appears in the paper. This is no doubt why American publishers have been reluctant to adopt such a standard designation (*Time* magazine, for example, describes various covers it published between 1993 and 1996, all digital images, as either "Illustrations," "Photo-Illustrations," "Digital Illustrations" or "Digital Montages"). But this whole dilemma is more rhetorical than ethical; newspapers and magazines have of course always manipulated their images in one

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16. For more on Corbis and its operations, see Corey S. Powell, "The Museum of Modern Art," *World Art*, 1: 2 (1994), pp. 10-13; Steve Lohr, "Huge Photo Archive Bought by Software Billionaire Gates," *New York Times*, 11 October 1995, C1, C5; Edward Rothstein, "How Bill Gates Is Imitating Art," *New York Times*, 15 October, 1995, E3; Welton Jones, "Gated Archive," *San Diego Union-Tribune*, 31 October 1995, E1, E3; Corbis, *Corbis Catalogue: Selections from the Corbis Digital Archive, Volume One* (Seattle: Corbis Corporation, 1996); Richard Rapaport, "In His Image," *Wired*, 4: 11 (November 1996), pp. 172-75, 276-83; Geoffrey Batchen, "Manifest Data: The Image in the Age of Electronic Reproduction," *Afterimage* 24:3 (November/December 1996), pp. 5-6; and Geoffrey Batchen, "Photogenics," *History of Photography*, 22: 1 (Spring 1997), pp. 18-26.

17. See Keith Kenney, "Computer-Altered Photos: Do Readers Know Them When They See Them?" *News Photographer* (January 1993), pp. 26-27.

way or another. The much-heralded advent of digital imaging simply means having to admit it to oneself and even, perhaps, to one's customers.

Or perhaps not. The history of commercial digital imaging thus far is a seemingly endless litany of deceptions and unacknowledged manipulations. Many of these, such as the notorious *National Geographic* cover from February 1982 in which the pyramids were moved closer together or the even more notorious *TV Guide* cover from August 1985 which merged the head of Oprah Winfrey and the body of Ann-Margret, were no doubt conceived by their editors as "illustrative" and therefore not beholden to the same standards of truth as properly journalistic images.[18] *Time* magazine has continued this tradition, regularly employing digital imaging to produce catchy cover art for articles on everything from the conflict between the two Koreas to the popularity of cyberporn. In each case, the resulting illustration is clearly just that, an overtly manipulated or invented image. However, the same magazine stumbled into more controversial waters when it chose to grace the cover of its June 27, 1994, issue with a digitally darkened L.A.P.D. mug shot of O. J. Simpson. Although the extent of this manipulation wasn't mentioned by *Time*, it was made plain by the fact that *Newsweek* chose the same unadulterated mug shot for its cover that week, thus allowing a direct comparison on the newsstand. In the face of considerable public criticism, *Time*'s editor was forced to print a full-page letter in the July 4 issue to explain the reasoning behind both the magazine's

18. See Martha Rosler, "Image Simulations, Computer Manipulations: Some Considerations," *Ten.8: Digital Dialogues* 2: 2 (1991), pp. 52-63, and Fred Ritchin, *In Our Own Image: The Coming Revolution in Photography* (New York: Aperture, 1990). Incidents such as these continue to occur at regular intervals. The November 1996 issue of *Life* magazine contained a quiet apology (hidden away on page 36 at the foot of another story) for having reproduced a digitally manipulated image of a bullfight (in which an inconvenient matador's arm had been removed) in the August issue. The magazine told its readers that "such electronic manipulation of news photographs is against our policy, and *Life* regrets the lapse." But if the editors themselves didn't know that the image they used had been altered, one wonders how many other such images they and similar magazines are inadvertently printing. In a different kind of case, the *New York Times* reported on page 17 of its October 13, 1996, issue that an election race for the U.S. Senate had been "shaken up" by the revelation that the media consultant for Senator John Warner had electronically placed his political opponent's head on the body of another man. The combination image had been used in an advertisement that accused the opponent of cavorting "with the nation's most liberal politicians." The *Times* quotes an expert in political advertising as saying that this example was "particularly egregious because it's undetectable to the average viewer." When questioned, one of Senator Warner's campaign aides dismissed the head-swapping exercise as a "technical adjustment." However, under pressure from the press, Warner later fired his media consultant and canceled the advertisement. Other examples show that the Oprah/Ann-Margret merger is not an isolated case. The January/February 1994 issue of *American Photo* magazine featured a cover picture of a diaphanously clad Kate Moss. However, fearing that Southern-based distributors would refuse to handle the issue, the magazine chose to digitally erase any sign of her nipples. This sort of quiet adjustment to pictorial truth is no doubt going to be an increasingly common practice amongst newspapers and magazines. The November 1996 issue of *Ladies Home Journal*, for example, featured an image of a smiling Cher on its cover. Or was it? Cher maintains that everything below the chin in the cover photo belongs to someone else. The magazine's marketing director admitted only that "we used technology to change the dress and remove the tattoo, to make the cover more appealing to our readers." See Jean Seligmann, "Cher Gets an Unwanted Makeover," *Newsweek*, 21 October 1996, p. 95. These kinds of manipulations are also taking place within the practice of nature photography. See David Roberts, "Unnatural Acts: A Feud Over Digitally Altered Photos Has Nature Photographers Rethinking the Meaning of Their Work," *American Photo* (March/April 1997), pp. 28-30.
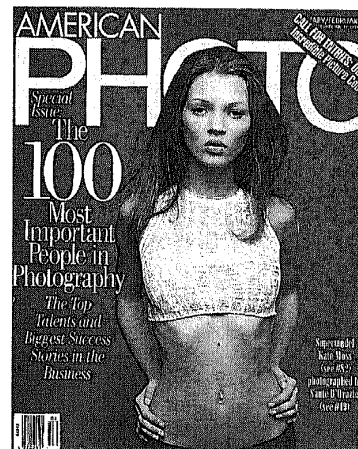
January/February 1994
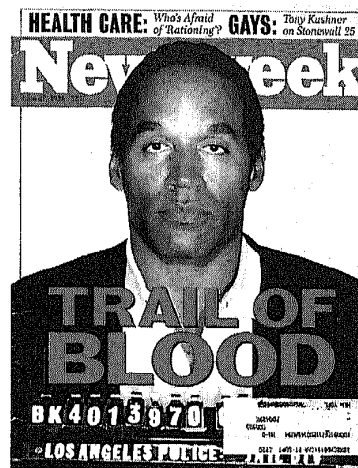
July 3, 1995

June 27, 1994
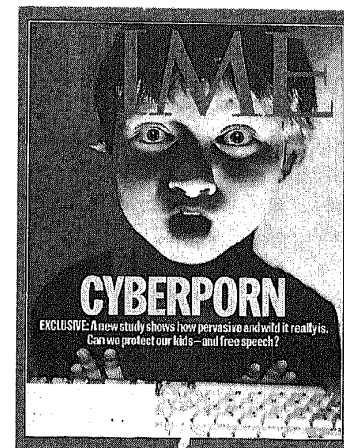
apparent racism and its decision to alter "the facts." Arguing that the digital alterations "lifted a common police mug shot to the level of art," the editor argued that such interventions had always been allowable within journalism as long as "the essential meaning of the picture is left intact."[19] Of course, this double appeal—to art and to essence—could be used to justify silently changing virtually any image in the magazine.

But all this can hardly be blamed on the advent of digitalization. The history of photography is already full of images that have been manipulated in some way or other. In fact, it could be argued that photography is nothing but that history. And I'm not speaking here of just those notorious images where figures have been added or erased in the darkroom for the convenience of contemporary

19. James R. Gaines, "To Our Readers," *Time*, 4 July 1994, p. 4. More recently, the tables have been turned. In November 1997 both *Time* and *Newsweek* featured photographs of Bobby and Kenny McCaughey, the parents of septuplets, on their respective covers. However, *Newsweek*, unlike *Time*, chose to digitally alter Mrs. McCaughey's teeth, straightening and whitening them. *Newsweek*'s editor in chief, Richard W. Smith, claimed that the enhancement was in no way analogous to what *Time* did with O. J. Simpson because the alterations were not made to "harm Mrs. McCaughey or deceive the reader." See Kenneth N. Gilpin, "Doctoring of Photos, Round 2," *New York Times*, 26 November 1997, A14.

politics.[20] I'm suggesting that the production of any and every photograph involves practices of intervention and manipulation of some kind or other. After all, what else is photography but the knowing manipulation of light levels, exposure times, chemical concentrations, tonal ranges, and so on? In the mere act of transcribing world into picture, three dimensions into two, photographers necessarily manufacture the image they make. Artifice of one kind or another is therefore an inescapable part of photographic life. In that sense, photographs are no more or less "true" to the appearance of things in the world than are digital images.

This argument returns us to the dilemma of photography's ontology, to the analogical operations that supposedly give photography its distinctive identity as a medium. Remember that Barthes has already discounted resemblance to reality as a way of defining photography. In his terms, a given person may not look exactly as the photograph now portrays them, but we can at least be sure he or she was once there in front of the camera. We can be sure they were at some point present in time and space. For what makes photographs distinctive is that they depend on this original presence, a referent in the material world that at some time really did exist to imprint itself on a sheet of light-sensitive paper. Reality may have been transcribed, manipulated, or enhanced, but photography doesn't cast doubt on reality's actual existence.

Indeed, quite the opposite. Photography's plausibility has always rested on the uniqueness of its indexical relation to the world it images, a relation that is regarded as fundamental to its operation as a system of representation. As a footprint is to a foot, so is a photograph to its referent. Susan Sontag says that the photograph is "something directly stenciled off the real," while Rosalind Krauss describes it as "a kind of deposit of the real itself."[21] It is as if objects have reached out and touched the surface of a photograph, leaving their own trace, as faithful to the contour of the original object as a death mask is to the face of the newly departed. Photography is the world's memento mori. It allows that world to become its own photographer. For this reason, a photograph of something has long been held to be a proof of that thing's *being*, even if not of its truth.

Computer visualization, on the other hand, allows photographic-style images to be made in which there is potentially no direct referent in an outside world. Where photography is inscribed by the things it represents, it is possible for digital images to have no origin other than their own computer

20. For numerous examples of predigital alterations to photographs, see Rosler, "Image Simulations, Computer Manipulations," *Digital Dialogues*, and Vicki Goldberg, *The Power of Photography: How Photographs Changed Our Lives* (New York: Abbeville Press, 1991).

21. Susan Sontag, *On Photography* (New York: Penguin, 1977), p. 154; Rosalind Krauss, "The Photographic Conditions of Surrealism" (1981), in *The Originality of the Avant-Garde* (Cambridge, Mass.: MIT Press, 1984), p. 112.

program. These images may still be indices of a sort, but their referents are now differential circuits and abstracted data banks of information (information that includes, in most cases, the *look* of the photographic). In other words, digital images are not so much signs of reality as they are signs of signs. They are representations of what is already perceived to be a series of representations. This is why digital images remain untroubled by the future anterior, the "this has been" and "this will be" that so animates the photograph. Digital images are in time, but not *of* time. In this sense, the reality the computer presents to us could be said to be a virtual one, a mere simulation of the analogically and temporally guaranteed reality promised by the photograph. And of course, when people seek to protect photography from the incursion of the digital, it is this reality that they are ultimately defending.

But how is it, or photography for that matter, threatened? It should be clear to those familiar with the history of photography that a change in imaging technology will not, in and of itself, cause the disappearance of the photograph and the culture it sustains. For a start, photography has never been any one technology; its nearly two centuries of development have been marked by numerous, competing instances of technological innovation and obsolescence, without any threat being posed to the survival of the medium itself. In any case, even if we continue to identify photography with certain archaic technologies, such as camera and film, those technologies are themselves the embodiment of the idea of photography, or, more accurately, of a persistent economy of photographic desires and concepts. The concepts inscribed within this economy would have to include things such as nature, knowledge, representation, time, space, observing subject, and observed object. Thus, if we do have to define it for a moment, we might say that photography is the desire, whether conscious or not, to orchestrate a particular set of relationships between these various concepts.

While both concepts and relationships continue to endure, so surely will a photographic culture of one sort of another. Even if a computer does replace the traditional camera, that computer will continue to depend on the thinking and worldview of the humans who program, control, and direct it, just as photography now does. As long as the human survives, so will human values and human culture—no matter what image-making instrument humans choose to employ.

But are both "the human" and "the photographic" indeed still with us? Technology alone won't determine photography's future, but new technologies, as manifestations of our culture's latest worldview, may at least give us some vital signs of its present state of health. Digitization, prosthetic and cosmetic surgery, cloning, genetic engineering, artificial intelligence, virtual reality—each of these expanding fields of activity calls into question the presumed distinction between nature and culture, human and nonhuman, real and representation, truth and falsehood—all those concepts on which the epistemology of the photographic has hitherto depended.

Back in 1982, the film *Blade Runner* looked into the near future and suggested that we will all soon become replicants, manufactured by the social-medical-industrial culture of the early twenty-first century as "more human than human," as living simulations of what the human is imagined to be. Deckard's job as a Blade Runner is to distinguish human from replicant, a distinction that, ironically, is only possible when he allows himself to become prosthesis to a viewing machine. At the start of the film he thinks he knows what a human is. But the harder he looks, the less clear the distinction becomes (like him, the replicants have snapshots, triggers for memories planted by their manufacturer, memories just like his own). Eventually he has to abandon the attempt, unsure at the end as to the status of even his own subjectivity.[22]

The twenty-first century is upon us. And already there is no one reading this who is a "natural" being, whose flesh has not been nourished by genetically enhanced corn, milk, or beef, and whose body has not experienced some form of medical intervention, from artificial teeth to preventive inoculations to corrective surgery. Zucchinis are being "enhanced" by human growth hormones. Pigs are now bred to produce flesh genetically identical to that of humans (replicant flesh).[23] Who can any longer say with confidence where the human ends and the nonhuman begins?

Not that this is a new dilemma. Like any other technology, the body has always involved a process of continual metamorphosis. What is different today is the degree to which its permeability is a visible part of everyday life, a situation that surely insists on a radical questioning not only of the body but also of the very nature of humanness itself. We have entered an age in which the human and all that appends to it can no longer remain a stable site of knowledge precisely because the human cannot be clearly identified. And if "the human" is under erasure, can photography and photographic culture simply remain as before?

If this be a crisis, then its manifestations are all around (as well as within) us. Contemporary philosophy, for example, would question the conceptual stability of the index on which photography's identity is presumed to rest. As we have already heard, photographs are privileged over digital images because they are indexical signs, images inscribed by the very objects to which they refer. This is taken to mean that, whatever degrees of mediation may be introduced, photographs are ultimately a direct imprint of reality itself. The semiotician who devised this concept of the index was the American philosopher

Charles Saunders Peirce.[24] However, as Jacques Derrida points out in his own examination of semiotics, the whole Peircean schema "complies with two apparently incompatible exigencies." To quickly summarize Derrida's argument, Peirce continues to depend on the existence of a non-symbolic logic, even while recognizing that such a logic is itself a semiotic field of symbols. Thus, "no ground of non-signification...stretches out to give it foundation under the play and the coming into being of signs." In other words, Peirce's work never allows us to presume that there is a "real world," an ultimate foundation, that somehow precedes or exists outside of representation ("signification"). Real and representation must, according to Peirce's own argument, always already inhabit each other. As Derrida points out, in Peirce's writing "the thing itself is a sign ...from the moment there is meaning there are nothing but signs."[25]

So those who look to Peirce for pragmatic evidence of an extra-photographic real world (the "thing itself"), will, if they look closely enough, find in its place "nothing but signs." Accordingly, if we follow Peirce to the letter and rewrite photography as a "signing of signs" (and therefore, it should be noted, recognizing that photography too is a *digital* process), we must logically include the real as but one more form of the photographic. It too is the becoming of signs. It too is a dynamic practice of signification. Any extended notion of photography's identity must therefore concern itself with the how of this "becoming," with the "tracing" of one sign within the grain of the other. In other words, photography must be regarded as the representation of a reality that is itself already nothing but the play of representations. More than that, if reality is such a representational system, then it is one produced within, among other things, the *spacings* of the photographic.[26]

This shift in photography's conception obviously has ramifications for the entire epistemological edifice on which our culture is built. As Derrida puts it, "this concept of the photograph *photographs* all conceptual

22. For more on the role of the photograph within *Blade Runner* (Ridley Scott, 1982), see Giuliana Bruno, "Ramble City: Postmodernism and Blade Runner," *October* no. 41 (Summer 1987), pp. 61-74; Elissa Marder, "Blade Runner's Moving Still," *Camera Obscura* 27 (September 1991), pp. 88-107; Kaja Silverman, "Back to the Future," *Camera Obscura* 27 (September 1991), pp. 108-33; and Scott Bukatman, *Blade Runner* (London: BFI, 1997).

23. See Laura Shapiro, "A Tomato with a Body that Just Won't Quit," *Newsweek*, 6 June 1994, pp. 80-82; and Lawrence M. Fisher, "Down on the Farm, a Donor: Genetically Altered Pigs Bred for Organ Transplants," *New York Times*, 5 January 1996, C1, C6.

24. See Peirce's "Logic as Semiotic: The Theory of Signs" (c. 1897-1910), in *Philosophical Writings of Peirce*, ed. Justus Buchler (Dover, 1955), pp. 98-119. The erasure of fixed origins of any kind that one finds in the work of both Peirce and Derrida would seem at variance with the distinction Victor Burgin maintains between the digital photograph (a copy with no original) and the photograph (which, he implies in the quotation below, is a copy that does indeed have an origin). "The electronic image fulfills the condition of what Baudrillard has termed 'the simulacrum'—it is a copy of which there is no original. It is precisely in *this* characteristic of digital photography, I believe, that we must locate the fundamental significance of digital photography in Western history." See Victor Burgin, "The Image in Pieces: Digital Photography and the Location of Cultural Experience," in *Photography after Photography: Memory and Representation in the Digital Age*, ed. Hubertus V. Amelunxen et al. (Siemens Kulturprogramm, Amsterdam: G + B Arts, 1996), p. 29.

25. Jacques Derrida, *Of Grammatology*, trans. Gayatri Spivak (Chicago: University of Chicago Press, 1976), pp. 48-50.

26. Derrida calls *spacing* "the impossibility for an identity to be closed in on itself, on the inside of its proper interiority, or on its coincidence with itself." See Jacques Derrida, *Positions*, trans. Alan Bass (Chicago: University of Chicago Press, 1981), p. 94.

oppositions, it traces a relationship of haunting which perhaps is constitutive of all logics." [27]

Photography, it appears, is a logic that continually returns to haunt itself. It is its own "medium." Accordingly, each of my examples has been part of a photographic ghost story. Each has pointed to the enigmatic quality of photography's death, or, more precisely, each has posed the necessity of questioning our present understanding of the very concepts "life" and "death." Given the advent of new imaging processes, photography may indeed be on the verge of losing its privileged place within modern culture. This does not mean that photographic images will no longer be made, but it does signal the possibility of a dramatic transformation of their meaning and value, and therefore of the medium's ongoing significance. However, it should be clear that any such shift in significance will have as much to do with general epistemological changes as with the advent of digital imaging. Photography will cease to be a dominant element of modern life only when the desire to photograph, and the peculiar arrangement of knowledges and investments which that desire represents, is refigured as another social and cultural formation. Photography's passing must necessarily entail the inscription of another way of seeing—and of being.

My essay has suggested that photography has been haunted by the spectre of such a "death" throughout its long life, just as it has always been inhabited by the very thing, digitization, which is supposed to be about to deal the fatal blow. In other words, what is really at stake in the current debate about digital imaging is not only photography's possible future, but also the nature of its past and present.

27. Jacques Derrida, "The Deaths of Roland Barthes" (1981), trans. Pascale-Anne Brault and Michael Naas, in *Philosophy and Non-Philosophy since Merleau-Ponty*, ed. Hugh Silverman (New York: Routledge, 1988), p. 267.