Photography: the Third Wave

the digital revolution and what it portends for photography

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Author's note: I debated, with myself, whether or not to add this article to the web site. The digital revolution has had a much greater effect on the medium than any one could have foreseen, so this piece might seem quaintly anachronistic. However, with some trepidation, I decided to go ahead if only to indicate one person's reaction to the early years of the digital age. (It was written in the Spring of 1989).

We are now entering the Third Wave* of photography's impact on culture and society.

"Out there," evolutionary forces and technological eruptions beyond our control are building a tsunami which is about to engulf us and which will have an immense impact on how we think, talk, write, teach and practice photography. It will have even more profound repercussions in the way images are employed in our lives. We are now entering the most turbulent period of photographic history. The Third Wave is on its way - and there is only one place to hide...

But before predicting the transformations which will be created by the Third Wave it is first necessary to take a brief look at the two earlier ones.

The First Wave occurred in 1839 with the birth of photography itself. A great deal has been written about the impact of this event on human consciousness and this is not the place to reiterate these arguments. Suffice to say that the splash sent ever-widening waves of change into the surrounding culture until no aspect of life, then or now, remained unaffected by the camera's images. But the infinite complexity of these changes can be embraced by a simple statement: photography provided evidence of a tangible, measurable standard of truth.

*I have borrowed this term, of course, from Alvin Toffler who, through books and articles, has described major changes in society with the wave analogy. Toffler's first wave was the agricultural society that prevailed all over the world until industrialization. The Second Wave was the Industrial Revolution, with its reliance on machines powered by fuel, when factories became the center of society. Toffler's Third Wave is the collapse of industrialism and the rise of a technological society dominated by electronics, computers and alternative energy sources.

Although my wave analogy comes from Toffler, my definitions do not.

This (problematic) notion is so taken for granted by our own culture that it is difficult to appreciate the revolutionary nature of the idea in the mid-19 century. For the first time in history the burden of proof shifted from the authority of an individual to the authority of a machine. A handmade illustration or a verbal description of a person or place demanded that the viewer/reader suspend cynicism and place a measure of trust in the integrity and skill of the author. The camera image was implicitly trustworthy because it, seemingly, short-circuited the experience of examining reality, by-passing the vagaries of human authorship or memory. In this sense the Victorian viewer *was* the photographer, and the directness of the experience was believable. Photography quickly became a metaphor for Truth. Newspapers, for example, were often called by photographic terms, such as The Daguerreotype, which emphasized their objective, factual contents. Books and periodicals employed the same idea. Both Sunday School Photographs, a book, and The Photographer, a periodical, concerned "the Truth" of the Christian gospel, and their contents made no connection, or reference, to the medium itself. Social Photographs was a book which contained no pictures. It was a collection of humorous descriptions of human types; it asserted the truth of these impressions by coopting the word "photographs." And there are many more examples, which merely serve to illustrate the force which propelled photographs, like silver bullets, into the heart of the Victorian culture: a single Truth made visible.

The Second Wave occurred around 1880. Up to that date, innovations and technical advances in photography had performed two functions: they either corrected deficiencies inherent in previous processes (the collodion negative, for example, allowed finer detail than the calotype and permitted multiple prints unlike the daguerreotype) or altered the presentation of the images in order to generate greater sales (such as the carte-de-visite). The social value of photography remained unaltered.

The introduction of the gelatin dry-plate created social repercussions of an order of magnitude not yet realized, or at least expressed, by even photographic historians. The new hand camera, and the ubiquitous amateur, are only discussed in reference to their effects on photographic style. It is certainly true that the hordes of "snapshot pests" and their "execrable productions" produced a reaction among serious photographic artists and led to Pictorialism, Salon exhibitions and Secessionist movements. Infinitely more significant in this context, however, were the social ramifications. It cannot be overemphasized that the dry-plate hand camera was not a mere technical advance. It produced a sudden and revolutionary change in consciousness. It is only possible, in the few words which space permits, to point at isolated examples of this radical shift in

thinking, and the all-encompassing ripples which left every aspect of society forever changed. One consequence of the hand camera was that people could be photographed without their consent, cooperation or even awareness. For the first time in the medium's history the act of photography became a moral or ethical issue. The amateur and his or her invading, aggressive camera was feared and loathed by all right-minded, clear-thinking observers of the snapshot phenomenon. In a chain reaction, this fact led to many conclusions: the social status of the photographer plummeted (a state from which the medium has never fully recovered); the photographer was again "visible" as the author - and his/her integrity was challenged; laws were introduced to protect rights to privacy as a direct result of the hand camera; the snapshot altered the visual conventions of the age and hence altered how the world was perceived; and so on.

The shock waves of change produced a domino-effect in many strange directions. For example, the introduction of the hand camera coincided with a craze for bicycles (which were often sold with cameras attached). Young ladies used the healthy exercise of bicycling and the edification of picture-making in order to escape the watchful, suspicious attentions of chaperones and neighbors. But the bicycle necessitated a different costume (long skirts and crinolines were impractical) which freed the young lady to wear unconventional clothes, such as bloomers. Wider experiences on picture expeditions or at camera clubs led to greater mental, as well as fashion, freedoms. Many of these young ladies became, with the active encouragement of the photographic press, professional photographers. Census reports for 1890/1900 reveal that one-third of all professional photographers (not receptionists, printers, assistants, retouchers, etc.) were female. The hand camera, therefore, is inextricably linked to bicycling, fashion and the suffragette movement.

A myriad of other examples would demonstrate that the wave of 1880 irrevocably altered directions within photography but with even greater force altered the consciousness of its own as well as all future generations. If the Victorians were passive recipients of Truth through the camera, the Edwardians were also active promoters of social change through photography. (Compare, for example, Francis Frith with Paul Martin). It matters not if the photographer denies a social conscience. The shift in consciousness is now implicit in the medium itself - and the impact on society was devastating.

Since 1880 the single truth has given way to two truths, the objective and the subjective. Consciousness has placed its fulcrum at various points along the beam connecting these notions and the balance is continually being seesawed by circumstance. Yet no matter how much out of kilter, the notion of some sort of truth is still implicit in photography.

The Third Wave is now building and, as yet, only the earliest, gentlest ripples have reached us. However these warning signals indicate that we are about to enter the most turbulent period of photographic history so far, an event of such powerful change that the revolution of i860 will seem relatively subtle.

Like the previous wave, The Third Wave is signaled by a new piece of equipment - the electronic camera; like the previous wave, the new technology represents more than a new tool for doing the same thing with greater convenience. It is the harbinger of a new society.

Before I attempt to justify this assertion, it is necessary to briefly describe the new camera, for those as yet unfamiliar with its potential, and indicate its effect on photography.

All still electronic cameras operate on the same basic principle. The image-forming light strikes a flat wafer, which converts the image into electronic signals that are stored on a small (2 inch) floppy disk. Each disk can store up to 50 shots, which can be selectively erased and reused. The images can be viewed instantly on a television and the best ones printed onto paper. If the new technology was capable of no more than this, it would merely represent a step towards greater convenience, an electronic instant-picture system.

But . . . this is just the beginning. Now that the image comprises electronic signals, it can be stored, manipulated, transmitted and recreated in a bewildering variety of ways, only a couple of which can be mentioned because it is not the system itself but its effect on society which is at issue. Let us take, therefore, two scenarios as illustrations of the electronic camera revolution.

Scenario 1:
How you will be informed about a news event. The photojournalist in, say, Lebanon drives to a news event, and "machine-guns" the situation with 50 shots from the electronic camera, capturing 10 images per second in its "motor drive" mode. There is no need for picture making or precise framing. The images are transmitted instantly via the car's cellular telephone and are received in a newspaper office in, say,New York. Meanwhile the editor viewing the images can call up other shots taken at the scene by various photographers and also file photographs of any subject taken anywhere at any time. Decisions can now be taken to create the most dramatic picture of the event. Using all the available images, one can be synthesized. Alterations can be made by using one foreground with another's background, a smile changed to a frown, clothing

altered in color, flames made bigger and more vivid, and so on. Imagine it and you can do it. Once the final image is "there", all others are erased (which means they are gone forever). The picture is then combined with text, directly on the screen, and the pagination transmitted directly to the printing machine. Once the presses are rolling, the computer generated image is erased, leaving no evidence in its wake.

Prophetic fiction? No. Everything mentioned above can be, is being, done in newspapers and magazines right now. National Geographic, Radio Times, Rolling Stone, Country Life, Picture Week, and scores of other periodicals and newspapers have used image manipulation to produce "better" cover pictures. Even photographic books have employed this system. The cover of A Day in the Life of Canada, for example, changed the dandelions in the background to green grass. The cover of A Day in the Life of America, a cowboy on horseback silhouetted against an evening sky, was composed not in the camera but in the computer. Only the photographer would know. And if no one knows, who can care?

Scenario 2:
How your life will be remembered. Although the electronic camera and "darkroom" of the previous scenario are here and now, their application in the home is, at the time of writing (Spring 1989), still to come. (Four electronic still cameras for the amateur market are due for release this year, by Canon, Sony, Konica and Fuji.) But it does not take a great leap of imagination to foresee the advantages of the electronic system to the snapshooter. No film to buy, no processing/printing delay, previewing images either through the camera or the television, instant hard copies (prints) if needed, and transmission by telephone of images to friends and relatives anywhere in the world. And the image can be "improved" in any way imaginable: closed eyes magically open, frowns are converted into smiles, colors changed selectively (even the color of someone's eyes), relatives included in the group (or eliminated), backgrounds changed, locations enhanced (using magazine illustrations, for example), wrinkles washed away, hairstyles updated and so on *ad infinitum*. The photographic record will comprise images which depict what it should have been like and not what it was like. Wishful thinking and fantasy will be the factual evidence of the future.

This is postmodernist appropriation of real significance.

Only two factors are delaying the complete and utter transformation of amateur photography from chemistry to electronics: cost and sharpness. The cost of an electronic still camera is around $1,000 which is not petty cash. However it should be noted that the cost was $7,000 just two years ago. (As a point of comparison it might be remembered that digital watches were once $150.00; they can now be bought for

$1.50). It should also be noted that the hand camera of the second wave was also expensive, initially. The Kodak camera cost $25.00, almost a month's average wage. In buying power, the cost of the electronic camera is almost the exact equivalent.

The sharpness of the electronic image is totally dependent on the individual photocells or "pixels" in the disk (the equivalent of grains in the film). A disk contains less than half a million pixels; the average 35 mm film frame contains the equivalent of 18 million pixels. So there is a long way to go. Industry representatives predict that the electronic image will be as sharp as 35 mm film in three years, and vastly superior in 10 years. Kodak has already made a disc with 1.4 million pixels and, it is rumored, one has been made which is producing a legible image of a newspaper at half a mile by starlight! Certainly, all engaged in this field see no reason why such sharpness, at speeds of several million "ASA," will not be achieved, and soon.

To some readers the above information will be redundant or irrelevant, but, it was necessary to sketch some of the potentials of the electronic image in order to create a foundation for several speculations of broader significance.

The future:

Photography as we know it (the reaction of silver halides to light) is now obsolete. That's not a cry of despair, but merely an observation. To future generations our present process will seem as laborious, intractable and messy as the wet-plate process now seems to us. There is no point in sticking our heads in the sand on the issue of electronic imagery because the medium is already undergoing far-reaching changes.

One of the instantly apparent changes is reflected in the availability of present materials, like film and paper. We know, but do not realize, that fine-art photography is, with few exceptions, totally dependent on an industry which was not designed for it but for the convenience of snapshots and rapid-processing machinery. When film and paper is no longer required by these services then *our* source of materials will be gone. Major manufacturers are already beginning to phase out of production certain black and white materials and this trend will accelerate in anticipation of the public/professional switch to electronic imagery.

Will fine art photography utilizing silver salts die out completely? No. It will, though, rapidly become even more irrelevant to society and culture than it is at present. In the beginning I said there is only one place to hide from the Third Wave. That place is the fine art photography area of a college or university. In an exactly analogous situation to the fine-art reaction to snapshots, future art photographers will emphasize the handmade nature of their productions, but now this will be a matter of necessity as well

as choice. In the absence of freely available materials there will be a return to the craft of individually preparing papers in all manner of silver and non-silver processes, and there will be a rise in small cottage industries catering to this specialized market, as is already happening with, say, platinum paper. Ironically, any silver print will be Art because of its rarity and the fact that it was hand made. The situation can be compared to lithography from the stone. In the 19 century this was a commercially viable and common trade in popular demand. Today, lithographers are artists and practically the only place you will find one is in a university art department. Photography (the chemical kind) is moving in this direction.

Photography departments will have to decide how to respond: either entrench and deliberately exclude electronic imagery from their programs or start incorporating the new system *now*. Several fine-arts programs around the USA are offering classes in electronic still camera systems but not one, as far as I know, has gone as far at The Polytechnic, London. Every photography major is *required* to take courses in electronic imagery (and desktop publishing) in the first year of study.

Photojournalism areas are, for obvious reasons, moving faster towards electronics. At the institution where I now teach, the photojournalism department is small - one faculty member and 25 majors. Yet it has two electronic camera systems and has been teaching classes in their use for the past several years. The fine-arts department, by contrast, has eight full-time photography teachers and 300 majors, but the area has not even begun to think about electronic imagery. This must change if only because the fine-arts students are taking classes in photojournalism in order to get their hands on the new technology. It is the enthusiasm and willingness for change among the young which will eventually force major changes in photographic education.

These eager young artists, for whom computers hold no mysteries, already know more about electronic imagery than their teachers, who do not have the knowledge, experience or even interest to deal meaningfully with this new work in critiques and tutorials. Something has to give...

All that can be asserted with any assurance is that the new electronic image-maker will, perforce, alter the way we think, talk about, and teach photography. The *only* alternative is that we become increasingly irrelevant and are relegated to being "photographers of the Old School", as collodion workers were dubbed by hand camera enthusiasts in the 1880s.

And, yes, I am talking about myself. I do not even own a word processor...

But the problems posed by electronic cameras in photographic education is esoteric and of minor importance compared to the effects of the Third Wave in society. All I can do at this stage is ask questIons because the answers, I feel sure, will be of greater significance and impact than anything I can yet imagine.

What will be the status of photographers in the field when all the creative work is carried out by electronic "darkroom" operators who were not at the scene and cannot possibly know the truth?

What are the ethics of electronically "retouching/airbrushing" a photograph or combining several images, under the guise of reality, for publication in a newspaper or magazine?

In the above case, who will own the copyright of the final image, or be credited, when it has been assembled from the work of several photographers?

What proof will there be that such a thing ever existed if the used image is erased from the computer in order to make storage "space" available for future images?

If even the best images are erased, what will be the historical record?

Will museums view images which only exist electronically as collectable "items"? If so, how will they be seen, stored, retrieved, displayed - and with what assurances that they are fact rather than fabrications?

Will the very notion of evidence seem an archaic idea in the future, when images will be presumed fabricated rather than factual?

If so, will there be no such thing as photographic evidence in a court of law, at the scene of a crime, of a news event, as scientific/ objective/ proof of existence of anything?

Will this be of any concern to the public who will be cheerfully altering, manipulating reality in order to "improve" home snapshots?

And if such falsifications of reality are so commonplace, and everyone assumes manipulation of information is the rule rather than the exception, will we be left with any standards of truth?

Will we be returning to a pre-First Wave idea that we must rely on the authority and integrity of an individual who asserts Truth but cannot prove it, and, if that is coming, will we be living in a world where the philosophy of situational ethics (all matters of right and

wrong depend on circumstance) reigns supreme?

If the First Wave led to objective truth and the Second Wave led to objective/subject truth, will the Third Wave lead to no agreed truth but all truth being relative?

Is that bad?

Will the electronic image hasten the demise of the written word (and hence clear thinking) when pictures become so ubiquitous in every conceivable situation, both personal and professional?

Will this trend lead to a commonly agreed picture language replete with a profusion of instantly understood symbols, like Victorian allegorical paintings?

What will be the point of travel (even to work) when the individual can have access to all known information/images from anywhere in the world while sitting at his/her electronic desk?

Is this the end of our faith in direct, personal encounters with real world experiences?

I do not know the answers to these and scores of other questions which I could pose. We are moving into that area of photography/ culture/ consciousness which is called *terra incognito*. All I can do is point towards a couple of peaks and a river or two, easily spotted from the border of the future.

But what I can say (with only a slight fear of contradiction) is this: the future is here, it is electronic imagery, and it will impact on every aspect of culture and consciousness.

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