The Photograph as Post-Industrial Object: An Essay on the Ontological Standing of Photographs

Vilém Flusser

Abstract—Photos, as they are now—namely sheets of paper or a similar material carrying information on their surfaces—are objects of post-industrial culture, one in which work is done by automatic apparatus. In the not far distant future, photos will become images appearing on electromagnetic screens; thus they will illustrate a future culture of pure, immaterial information, one in which society will be busy elaborating what is now called 'software'. The difference between the two cultures is that objects will no longer occupy the center of attention in the future one. This will involve not only a transvaluation of all values but a mutation in human existence.

I. OBJECTS

The Latin term 'ob-iectum' and its Greek equivalent 'pro-blema' mean 'thrown against', which implies that there is something against which the object is thrown: a 'sub-ject'. As subjects, we face a universe of objects, of problems, which are somehow hurled against us. This opposition is dynamic. The objects approach the subject, they come from the future into the subject's presence. And the subjects project themselves into the future, into the universe of objects. The shock between subject and object occurs over the abyss of alienation which separates the two. The present tendency is to relegate this shock from human subjects to automatic apparatus. Automatic cameras may serve as an example.

Objects are shocking because they stand in our way. They are where they ought not to be. The shock between subject and object is one between 'to be' and 'ought to be', between reality and value. The subject tries to inject value into the object through 'work'. Objects changed by work are cultural objects. The present tendency is to relegate work from human subjects to automatic apparatus. The shocking objects are somehow given, they are 'data'. Cultural objects are made, they are 'facta'. To work is to process data and change them into facta. Automatic apparatus are capable of this data processing. We are witnessing a cultural revolution.

II. CULTURAL OBJECTS

Data present themselves to the subject in various shapes, 'Gestalten'. The subject tries to change those shapes so that they become as they ought to be by 'informing' the data. To do this, the subject must have them stand still (understand them) and must grasp them (conceive them). Understanding has to do with the eyes; the Greeks called this gaze which makes the data stand still 'theoria'. Conception has to do with hands and fingers; the Greeks called this kind of gesture 'praxis'. They felt a contradiction between theoretical understanding and practical action. (Kant formalized this contradiction between theoretical and practical 'reason' by distinguishing between the categories of pure reason and the 'categorical imperative'.) One seems to lead toward wisdom, 'sophia'; the other toward mere opinion, 'doxa'. Thus, in Occidental tradition, philosophy (love of wisdom) came to despise action.

As a result, the cultural objects (data changed into facta) were little illuminated by theoretical understanding. Work was, to a large extent, an empirical gesture. The cultural objects were, to a large extent, products of hands and fingers, works made by artisans and artists.

III. INDUSTRIAL OBJECTS

The fifteenth century established a dialectic between theory and praxis. One began to look in order to grasp better, and to grasp in order to see better. Theory became hypothetical: praxis could disprove it. And praxis became experimental: it applied theoretical understanding. Modern science was born.

The eighteenth century used modern science to analyse work into two elements: one concerned the shape to be imposed on data, the other the gesture of that imposition. This resulted in machines and machine tools: the industrial revolution. A given object, a datum, is introduced into a machine (a practical application of a theoretical understanding of the gesture of working). It is there impressed by a machine tool (a practical application of a theoretical understanding of shaping). Out comes a new type of cultural object, the industrial object. This has had profound consequences: artisans and artists became marginalized, and society became divided into owners of machines and machine tools, makers of machines and machine tools and servants of machines and machine tools.

Industrial objects differ from preindustrial ones in two aspects. First, they are more numerous—machines, being more rapid than humans, produce more objects than humans do; the result was object inflation, a devaluation of cultural objects. Second, they are stereotypical—the same tool impresses the same shape on a series of objects; the result was that cultural objects became equivalent to each other. This progressive devaluation of and indifference toward cultural objects is called 'mass culture'.

IV. POST-INDUSTRIAL OBJECTS

As cultural objects became increasingly cheaper, and machines and tools increasingly more expensive, one tended to believe that those who owned the machines and the tools held the power of decision. This belief is one of the roots of Marxism. But as it became evident that 'shape' and 'value' are synonymous, that it is the toolmakers who shape the future of society, this belief shifted. It is now the toolmakers ('information programmers') who are believed to hold the power of decision.

Information production (the elaboration of information to be imposed on data) thus became neatly distinguished from work (the imposition of information

Vilém Flusser (educator), Rue de la Caoune, Le Vieux Village, F-84440 Robion, France.

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upon data). Work was now understood to be a mechanical motion, one unworthy of human subjects. The result was automatic machines, robots. Somewhat later it was found that even the elaboration of information has mechanical aspects. The result was automatic artificial intelligences. Thus the shock between subject and object was transferred from human being to apparatus, and the human being became a sort of judge of that struggle by programming the information to be elaborated by computers.

Post-industrial society will be one in which most people will be engaged in this programming. Post-industrial objects will differ from industrial ones in that they will become almost 'value-less' supports for programmed information. (Even now, the value of a plastic fountain pen lies almost entirely in its shape and hardly at all in its plastic material.) Strictly speaking, post-industrial objects will no longer be true 'objects'. If culture is defined as a store of values, this store will no longer consist of objects but of other forms of memories (see below).

To summarize this discussion of the term 'object': human beings are subjects to objects which stand in their way. They must change the objects. This changing of the objects becomes increasingly better understood theoretically and can be improved in practice, that is until human beings no longer need to confront objects while advancing toward the future: then humans can be replaced by apparatus. From this point on, humans are no longer true subjects.

V. PHOTOS

Photos are practically worthless supports of information. This information has been elaborated by an increasingly better automated apparatus. A critical analysis of photos (a 'photo philosophy') may therefore help us understand what is going on around us.

The information the photo carries sits on its surface and not within its body, as in the case of shoes or fountain pens. Though this would seem to be true for all pictures, it is not. Pre-industrial pictures are valuable as objects because one loses the information they carry if one destroys their body, just as with shoes or fountain pens. Photos are worthless as objects because the information they carry is stored elsewhere and may be transferred easily from one worthless surface to another.

Photos and printed matter have the following in common: both can become a nuisance by creating waste material. However, in printed matter a human subject, an 'author', elaborates the information (unless a word processor is used), while in the photo an apparatus does. A post-industrial object is objectively worthless and carries information that can be replicated and information that has been elaborated by an automated apparatus. Thus, if we are to grasp the photo (and post-industrial culture in general), we must concentrate upon the camera (and the apparatus in general).

VI. APPARATUS

An apparatus is a machine that elaborates information. A situation is more informative the less it is probable; for instance, the letter 'z' is more informative within an English text than the letter 'a', and a penguin encountered in a street is more informative than a mail carrier. An apparatus is a machine that calculates probabilities. Humans used to do the same thing, and they called it 'creation'. They used to elaborate improbable situations empirically, and they used to call their empiricism by noble terms such as 'intuition'. Apparatus do this better because they use information theories.

This gives rise to a philosophical problem. The universe of given objects ('nature') tends toward a progressive loss of information. It tends toward an ever more probable distribution of the elements which compose it. Culture is a store of improbable situations which humankind opposes against this mindless natural tendency toward loss of information, toward 'thermic death', toward oblivion. This is why information is synonymous with value. However, if apparatus can create information in the place of humankind, what about human commitment? What about values?

VII. THREE TYPES OF PHOTOS

In order to restate the above philosophical problem, one may distinguish between three types of photos: photos made by fully automated cameras (e.g. a photo made from a NASA satellite), amateur photos (e.g. a photo of the photographer's dog in front of the Duomo Cathedral in Florence) and professional photos (e.g. an experimental photo). The first type carries information programmed by humans and elaborated by apparatus. The third type carries information intended by the photographer, and this intention may be opposed to the one that programmed the apparatus. It is the second and by far most frequent type of photo which is of interest here.

The amateur presses upon the shutter release as often as possible, becoming in fact an automatic shutter release. The amateur photographs everything the camera can photograph and tries to exhaust the camera program. As a result, the information these photos carry has not in fact been intended either by the amateur or by the camera programmer; they were mere virtualities within the camera program, which became real through an automatic releasing gesture. This creates pure terror: an apparatus has escaped from human intention and now realizes all of its virtualities automatically (including the one to destroy itself, see Goedel's theorem, which states that every system contains its own destruction)—an apocalyptic vision if applied, for example, to the thermonuclear or the political apparatus.

Snapshots carry little information. They are probable. But some of them are highly informative, difficult to futurize; and for a curious reason: they are bad photos. They owe their information to an error, to a deviation from the camera program. We are familiar with this sort of information that results from error. New biological species arise through errors in the transmission of the genetic program. In fact, this deviation from program through error is responsible for every information produced by nature. An apparatus that has escaped from human intention, realizes all its virtualities automatically and deviates from its program by error, works like nature. This implies that a society dominated by uncontrolled apparatus will be thrown back into the terror of blind, absurd automaticity, into a pre-cultural situation.

The challenge is to control the apparatus. This is shown in the third type of photo. When the experimental photographer deviates from the camera program, it is done intentionally, not by error. But the problem remains that despite the intention to deviate from the program, the photographer can only photograph what is contained as a virtuality in the camera program. This is the aspect of the famous 'inner dialectic of freedom' we shall have to face in the post-industrial future.

To summarize this discussion of the photo as an example for the post-industrial future: objects tend to become worthless supports for information. Most of that information is elaborated by automatic apparatus according to an (originally) human program. Apparatus tend to escape from this (originally) human intention. Human commitment is therefore no longer dedicated to the elaboration of programs but to the deviation from programs; it is no longer dedicated to the creation of values but to the deviation from values.

VIII. ELECTROMAGNETIZED PHOTOS

Photos are about to emigrate from their material support into the electromagnetic field, to abandon their chemistry: they will no longer be seen on paper but on screens. This is a technical revolution, and basically all cultural revolutions have a technical basis. For instance, the Neolithic revolution was based on agriculture, and the industrial one on machines. We are in the midst of a cultural revolution.

The new photo can be distinguished from a chemical one in three ways: (1) It is practically eternal; it is not subject to entropy, to the second principle of thermodynamics. (2) It can move and sound. (3) It can be changed by its receiver. This is true of every electromagnetized information (e.g. video or computer synthetizing), but in the photo one can see how information abandons its material basis.

(1) Memory

Objects are bad memories: paper falls into ashes, buildings into ruin, entire civilisations into oblivion. Humans are committed to preserving the information they create; they are committed to struggle against entropy, against oblivion. In their search for immortality, humans have always tried to find something 'aere perennius', something that might resist entropy better than bronze. It has been found: silicon (and even better, wet memories of the immediate future—ones made of nerve fibres) will assure that all created information should outlast the human species. The new photos may be stored in this kind of memory.

(2) Total art

Ever since the fifteenth century, Occidental civilisation has suffered from the divorce into two cultures: science and its techniques—the 'true' and the 'good for something'—on the one hand; the arts—beauty—on the other. This is a pernicious distinction. Every scientific proposition and every technical gadget has an aesthetic quality, just as every work of art has an epistemological and political quality. More significantly, there is no basic distinction between scientific and artistic research: both are fictions in the quest of truth (scientific hypotheses being fictions). Electromagnetized images do away with this divorce because they are the result of science and are at the service of the imagination. They are what Leonardo da Vinci used to call 'fantasia essata'. A synthetic image of a fractal equation is both a work of art and a model for knowledge. Thus the new photo not only does away with the traditional classification of the various arts (it is painting, music, literature, dance and theatre all rolled into one), but it also does away with the distinction between the 'two cultures' (it is both art and science). It renders possible a total art Wagner never dreamt of.

(3) Dialogue

Totalitarian society is discoursive: it emits information, like the daily press or the television system. Democratic society is dialogical: it permits the exchange of information, like the telephone. Both forms overlap at present, but discourse dominates. The new photo will change that. Cables and other reversible channels will carry information both ways. The new photo may be changed by its receiver to be sent back, thus changed, to the sender. Everybody will become capable of collaborating in the elaboration of information (within the limits imposed by automation). Democracy has become technically possible for the first time since the industrial revolution.

To summarize: the new photo will differ from the chemical one in that it will be practically eternal, it will render total art possible and it will permit democracy to function.

IX. *"LES IMMATERIAUX"*

The purpose of the recent exhibition organized by Jean-François Liautard under the title *Les Immateriaux* at the Centre Pompidou in Paris was to show what the future society of pure information will look like. It consisted of various types of electromagnetic images: moving photos of Jupiter's satellites, of particles, of intestines during digestion as well as images of mathematical equations and 'impossible' objects, such as four-dimensional cubes, exchangeable holograms. All this was bathed in synthetic sound with comments by synthetic voices. There was no object present, just immaterial information. From the point of view of industrial culture, all this was entirely useless. It cannot be consumed, only contemplated. If in the future people concentrate upon producing such useless information and relegate the production of useful objects to automatic machines and artificial intelligences, then we shall have a useless culture.

But if one changes one's point of view, the exhibition suggests that it is precisely this uselessness of pure information that will permit humankind to lead a meaningful life for the first time. The ancients thought idleness ('schole') was the purpose of all action ('a-scholia'). Thanks to the automatic machines, humankind is becoming unemployed and thus free to pursue the useless dialogical elaboration of pure information. This, of course, is called 'play', and the present cultural revolution may be seen as a mutation from 'homo faber' into 'homo ludens'. All serious business will be relegated to apparatus, and the new generation will play its games and look back with contempt on the animal seriousness of past generations.

X. INTERSUBJECTIVITY

The future culture of immaterial information, as exemplified by the new photo, will hold objects in contempt: it will consume them without paying any attention to them. In this sense, the human being will no longer be subject to objects. No longer facing the universe of objects, the individual instead will be linked, through numerous channels, with other people, and together they will exchange information. This togetherness will stand outside space-time: all the others, wherever they may be, will always be present with the individual. One may call this sort of existence 'intersubjective', to distinguish it from subjective existence. It is impossible to formulate as yet the categories of such an existence. If one could, one would have negotiated the abyss that separates the old form of existence from the new one.

The new photo is thus an example of the emerging culture of immaterial information. All useful activities will be executed by apparatus. The individual will become free to elaborate pure information in dialogue with all the others. This information will be stored in unperishable memories. It will be total art, and every human being will become, potentially, a universal artist. The human being will no longer exist as subject to an objective universe but as a knot within a social network which transcends space-time. This is, of course, utopian. Catastrophies may be relied upon to prevent it. Still, it has become a technically feasible utopia.

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This paper is based on four essays, two of which I published in Brazil, "Natural:mente" and "Pos-historia", in Portuguese; and two in Germany, "Fuer eine Philosophie der Fotografie" and "Ins Universum der Technischen Bilder", in German. It also contains elements of an essay on the future of writing which is in progress.

The section dealing with objects is influenced by Heidegger's analysis of 'Ding' and 'Zeug', by Abraham Moles's work on the theory of objects and by Adorno's critique of Marxist dialectics.

The section dealing with chemical photographs (the usual type) is in part an answer to Roland Barthes' arguments on that subject and a continuation of Walter Benjamin's reflections. In part it is an application of information theory to the problem of creativity, experimented with, for instance, in Strasbourg. The last part of this section is an attempt to incorporate Adam Schaff's and Ernst Bloch's intuitions into the argument.

The last section dealing with electromagnetic photos (the new type) is a synthesis between the 'new criticism', as initiated by Sedlmayer and others, and Martin Buber's analysis of intersubjective existence. I wrote its last part in preparation for a discussion between Jean Baudrillard and myself on German television, scheduled to take place on February 26, 1986.