

LOCAL ANTHROPOGENIES – SEMIOTICS

PHILOSOPHY OF PHOTOGRAPHY

Part 2 – PHOTOGRAPHIC INITIATIVES

Chapter 10 - The initiative of nature

In temperatures up to 40 million degrees that reign at the core of pre-stellar collapses, hydrogen runs out by being converted into helium, at the same time a gamma ray photon is released. Its energy dwindles at every step, and the photon undertakes its heroic journey: it will take a million years for it to reach the surface and to soar into space in the form of light, visible at last. A star is born.

CARL SAGAN, *Cosmos*

Nature is at work in all instrumentation. Clocks activate the laws of mechanics, and ink activates those of chemistry. However, in the majority of cases, natural laws are hidden, and all we can see is artifice.

In the photograph, by contrast, light is eminently present and explicit; as such, it marks its own naturality. Moreover, it unveils nature in its most basic aspects. In fact, light not only has the more or less localized naturality of water, air or rock. It takes on the structures of the universe in what is most wide and thin, in its transmissions from afar and in its minimal energies. This means that light contains and shows the two cosmic constants, i.e. c and h , coming across the photographer in a pronounced way.

10A. Constant c

In its lenses, the photographic process gathers and makes use of the main messenger of the universe, i.e. electromagnetic waves. These have remarkable characteristics. Their movement is linear, apart from an enormous gravitational effect. Their refractivity, when

passing from one environment to another, is governed by fixed laws. Their interference fringes are continuous and calculable. They are isotropic: in a vacuum, their speed is constant in every direction. According to the theory of relativity, this speed is insurmountable and gives rise to the cosmic constant c . Because of this, simultaneities are created and thus also a coordinated space and time, a space-time. Through the electromagnetic waves between the space-time islets prodigiously moving away or drawing closer, a kind of unity is instituted which ensures that any event belongs to the Universe, to the turn-towards-One. Working on this set of features revolving around c is, for the lens engineer as well as for the photographer, in itself already a remarkable way of connecting with the nature of things.

Furthermore, the solar system privileges particular electromagnetic waves. As the sun's surface temperature is 5800 degrees Kelvin, its most intense electromagnetic radiation has a wavelength of about 2.9 μm (the length of a privileged wave of a black body at 1; Kelvin) divided by 5800, or in other words, 500 nanometers. Thus, Evolution selected the human eye for its adaptation to waves between 400 and 700 nanometers; 500 for green at the centre, 400 for blue, 700 for red. As a consequence, and in return for other optic capabilities, man captures light in a most balanced and integrating manner. This remarkable ability is one of the elements - together with the standing posture, the hand, the larynx, the neocortex, and the omnivorous diet - contributing to his transformation into the signifying animal, this mammal where analogical and digital signs blossomed, or, in short, humankind as the place where signs originated. The *integrating gaze* is the fundamental practical, scientific, and aesthetic experience bespeaking the concord between humankind and the solar system, and beyond. In other words, these abilities render man the cosmic and universal animal.

Every photographer loves to stress that photographic equipment, with its shutter, diaphragm, lenses and light sensitive film matches the apparatus of the eye, with its eyelids, iris, crystalline lens and retina, which are all organized in accordance with the 500 nanometer wavelength and the isotropy of light. In this sense, the photograph is also solar. However, instead of shaping the Universe according to our Cosmos-Mundus, it opens the Cosmos to the Universe and in some respects dissolves it. Its technical initiatives have shown us that it not only makes use of the concordances between light and the human eye, but also of their conflicts, which forces us to thematize them. Being techno-logical, the photograph is thus also cosmo-logical.

10B. Constant h

The photograph is cosmological in a second sense. The moment the light of the prospective (*éventuel*) spectacle crosses the lenses in an undulatory and continuous form, and when it reaches the light-sensitive film, discontinuities, granularities and therefore aleatory effects of every kind are introduced. And the vagaries and grains are as fundamental to nature as figural rigidity.

First, halide crystals are placed in vain as regular as possible in the fixed emulsion on the inflexible base, as their position and orientation can never have the regularity of the light waves that make contact. The crystals are affected by the light waves according to the discontinuities that give rise to a first type of fractionation, or graining.

Chemically speaking, the luminous waves carrying out the transformation of silver grains into black grains of silver, thereby creating the photographic negative, obtain this effect through the injection of luminous energy. However, the latter is a discontinuous phenomenon, unlike waves. As with all energy, it can only appear as a multiple of the second cosmic constant, h ; it is granular, corpuscular and *quantic*. The moment the continuous light waves affect the silver halides, they will have, with regards to this crystal, an amount of energy equal to an integer of h so as to be sufficient to induce the transformation, otherwise it is not possible. Crystals are affected discontinuously.



Une nébuleuse. Et deux développements, l'un direct (à gauche), l'autre physique (à droite), dans un document Kodak, E.U.

On the other hand, the transformations thus attained in particular crystals are so weak that they will be invisible, and only provide a *latent image*. Therefore, one must make sure that the transformed crystals induce transformations in those neighboring crystals that have not yet been transformed. This operation of colonization is called developing. As it yet again concerns

chemical alterations and energy transfers, this action now gives rise to a visible image, the negative, in which new discontinuities join those of the latent image.

As we are still dealing with halide modifications, and therefore also with chemical energy, a fourth granulation will set in that subsumes the three previous ones when the negative is finally inverted into a positive image on paper. This is the grain of the print, the grain we think of first when speaking of a photograph, and which is all the more manifest as it contains further enlargement.

Thus, after having affected the figural continuities linked to the cosmic constant c , the photographic process now thematizes and puts into play the other fundamental aspect of the universe, i.e. its quantic, granular, and aleatory character, and hence also its irreversible modifications, its true historicity, which are all linked to the second cosmic constant h . The successive granulations of shot, developing, and printing give rise to predictable allocations along statistical distributions, but this does not cancel out the figural peculiarities that are triggered by the modifications of a few crystals subordinated to sudden energy jumps in some of the grains. There is hardly a more telling example of how, everywhere and at all times, microscopic events that are insignificant in themselves can give rise to both noise and meaningful macroscopic phenomena, and to possible new directions.

Certainly, mankind also encountered the aleatory in painting and sculpture. The brush thickened, the chisel swerved and the clay showed unforeseen protrusions. But all this was carried over into corrections that were invariably subsumed into an ultimate intentionality. Only the ruin introduced the unforeseen and the crack in ancient oeuvres, and this is precisely what constituted its sacrality. In the photographic process, the aleatory does not depend on human slips or ruin; it is there the moment when the luminous waves granularly affect the halide crystals.

To sum up, one could say that in its exercise of c and h , the photograph connects cosmology and technology so closely that it is undoubtedly the place where artifice and nature, reality and the real interbreed most conspicuously towards a *median reality*, befitting any advanced industry.

Henri Van Lier