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Ecology and the symbolic entropy of the object

In a physical system, when any element whatsoever experiences a change, it frees part of its energy; a part of energy which is lost forever. But as we know, energy is not created; there simply exists a limited disposable *quantum* of it. Thus, as this process of change is permanent, entropy, non-disposable energy, increases. Entropy thus tends to be maximum and irreversible, and hence one of the hypotheses of the extiction of the world and the Universe. Well, that is more or less what a person as far from physics as I am manages to understand about entropy.

It is curious, as well, to learn of thinkers who have imagined that this natural law could only be mitigated or delayed by humanity (the *Dictionary of Communication* directed by Abraham Moles refers to the early Renaissance philosopher R. Löw). Our anthropocentric culture has always tended to think that humanity would finally put unruly Nature in order. Nowadays, another kind of conscientiousness strikes us: the evidence that humanity has done no more than accelerate the rush towards maxima of entropy.

In the theory of information, on the other hand, the concept of entropy has been used in a way equivalent to its use in physics. The message is a sequential group born or constructed from a universe of disordered signs. Here, entropy is given in an opposite sense: from disorder to order (negentropy). But in the reception of the message a loss of information is produced and entropy works in the same sense as in Nature.

This introduction, perhaps too long and surely too elementary, is pertinent because we mean to talk about consumption and the esthetics of everyday objectuality, using the concept of entropy as a functional analogy. Perhaps to demonstrate, as on other occasions, the profound relationship that unites the humble task of conceiving and giving form to objects with a world that is wasting away in the midst of residues of objects and residues of consumption.

Models of consumption and environment

One of the most delicate ecologic problems that our society faces —besides entropic energy— is the model of consumption of Western countries. We do not mean consumption for production, but rather production for consumption and the final consumption itself. Thus, in one of the documents put out by the United Nations during the Rio conference, there is an insistence on

> the change in models of consumption constitutes one of the principal challenges in the achievement of environmentally healthy and sustainable development, especially because these models are deeply rooted in values and life-styles basic to industrial societies, and because they are, to a great extent, emulated by the rest of the world.[1]

This means, simply, that the model of consumption in the First World is, at least, critical for the environment, but that extending this model to the under-developed countries is not at all viable. It is easy to come to conclusions. Now, though the diagnosis of the illness is worrying, the ignorance about its cure or at least the mitigation of its effects is even more worrying. That is what is happening with consumption:

> Even though the need to examine the role of consumption is widely acknowledged when facing ecologic and development issues, this has not yet been transformed into an understanding of the nature of the issue or a concrete way of facing it.[2]

It is interesting to observe how the fields of management of resources, energy consumption, or residue treatment (production sphere) is heading towards more precise objectives and formulating mechanisms for more specific action than that of facing the problems of consumption (besides, perhaps, the indirect tax effect of ecotaxes and consumer information by ecolabelling). One explanation may lie in that the conflict of interests between public and private goods is clearer than in the production area; another in that technical, or even technocratic, imagination is better developed in the area of productive materialism than in a field where what is dominant is cultural representation and value systems. The image of well-being is, perhaps, the

1. Global Alliance for the Environment and Development, United Nations, *Guide to Agenda 21*, Environmental Department, Generalitat de Catalunya, Barcelona, 1993.
2. *Ibid.*

most widely shared element in economically developed societies. In other words, nowadays Western society is more cohesive around ideals of consumption than around ideals of production.

Here we have the problem about models of consumption to be faced from the ecologic viewpoint: on the one hand, it is not to be found in the field of physics, but rather in that of imagination; it is not matter and energy (technically «dominatable» elements), but rather psycho-social dynamics; on the other hand, these images of consumption flow transversally through practically all social sectors and conform a kind of «democratic» consensus.

Objects of consumption and entropy

The model of consumption to which we refer is made up of economic mechanisms and social behaviours that take on the form of a characteristic type of objects, under criteria of conceiving them and habits of consuming them and using them. The obsolescence and seduction of objects are key words for understanding the dynamics of consumption.

Obsolescence constitutes a system of feed-back in the production-consumption cycle. It is not an industrial whim nor a chance characteristic. It is as important to conceive objects for consumption as to conceive their waste and disuse. However, this productive logic could not survive autonomously if it did not enjoy a permanent link to a myth system well-structured around consumption. Although the analysis of consumption is far beyond the modest intention of these lines, we cannot ignore how the mirage of abundance and immortality (or eternal youth), the seduction of a diversity of appearances, the promise of happiness, and the multiple forms with which desire is presented and its non-satisfaction in the act of consumption... all this, and still more, is permanently acting on and feeding the psychic apparatus of the economic model of consumption.

The impression of this domination of the ephemeral seems less ethereal than the experience which it proposes. One by one, all those objects conceived by industry are entering, with all their materialism, an overloaded environment in a permanent process of overloading; and one by one, with a maddening speed, they become residues. The view of consumption of the sixties was inspired by a moral and ideologic censorship, and its analysis on the concept of alienation. In the eighties, together with a re-legitimation of the market, they brought a view of the dynamic effects in society and culture of consumption (Lipovetsky). Nowadays, what mainly worries us is the ecologic effect of obsolescence on a world that is facing the idea of limits; the limits of its own physical sustainability. The paradox of consumption is that of a fatal seduction: consumption is associated with removal, with change, with the permanent restoral of life, but by consuming we hasten the aging of the sources of life, and entropy increases.

Consumption and ecologic consumption

There is no doubt that the consciousness of the ecologic crisis is providing an impulse for changes in every order of human activity. Mechanisms for regulation and self-regulation are being put into use, especially in the richer countries (in the poorer countries, regulations are generally imposed by the richer countries, too). To be sure, these regulations have no special merit because they are clearly insufficient for the problems to be faced. We could even affirm that it is an instinctive self-preservation movement of the species, more like the secretion of adrenalin in response to fear than a real change of strategy related to the environment. However, we cannot belittle these changes.

Some companies, due to pressure from laws or market strategies, or simply because of their own conviction and initiatives, are going ahead with the introduction of ecologic concepts and controls in production. At the same time, among consumers an ecologic sensitivity is taking place which, in countries with better economic well-being, is beginning to determine a great many buying decisions. This emerging phenomenon has, in fact, quite variable expressions: from a new kind of consumer who self-regulates both the quantity and the quality of consumption as a response to an environmental responsibility, to consumers who incorporate more ecologic consumption as the offer allows or as cultural censorship inspires.

The phenomenon is very significant as it shows how, beginning with consumption itself, mechanisms for redimensioning the entropic effect of consumption have been set in motion. In some countries —significantly in Germany and Central Europe— «green» consumption has become transformed into an element of pressure that hastens and even constrains the produc-

tive structure and even the government. The other element to emphasize is the fact that this counter-tendency (Morace) represents a break in the «democratic» consensus about consumption and the incorporation of new ethical referents. At the same time, however, we cannot but perceive and remark the limits of this phenomenon: it is improbable that either the rationality which exploits the ecologic discourse —which clashes with the irrational and ambiguous logic of intersubjective consumption processes— or the mistique of «green consumption» —which has little capability for becoming universal from its segment— can achieve, by themselves, a self-regulation of consumption that can affect its deepest structures.

Ecology of the artificial and the life-cycle of objects

The culture of the project has also been affected by the emerging ecologic culture. Disciplines such as engineering, architecture, design, graphics, fashion, and publicity have a very important position in the configuration of the concrete and semiotic environment. Although many decisions exist, external to the project, but which influence it, finally all the elements that determine «what will be» flow together. For this reason, the concept of the ecology of the artificial (Manzini) provides an important role for the project in the re-orienting of the technical environment towards objectives of sustainability.

The ecologic perspective has brought a widening of projectual activity to the world of product design. Design, like the industrial model to which it belonged, had not gone beyond prefiguring the manufacture, consumption, and immediate use of the object, leaving, in the best of cases, what was related to disuse in silent complicity. Giving form to objects and messages has been playing on appearances and ignoring the fate of materials. Ecodesign now speaks of the need and the possibility of conceiving objects in a cycle that is not used up in its use and enjoyment while making sure that the fate of the object is not directly that of residue, but rather that of components to be reabsorbed by Nature or returned to the productive cycle. The analogy between the life-cycle in Nature and that of the artifact tends towards a greater globalization in the concept of products and new objectives in the culture of the product.

Technology and design, improving their efforts towards increasing the ecologic results of objects, open an alternative route whereby the entropic effect of consumption can be reduced. The physical overload on the environment can be lightened by ecologically thought-out products. Besides, it is probable that the the substitution of ecologically uneducated products by ecologically educated products will advance quickly if an effective synergy is produced between demand pressure (consumers) and technical and cultural qualification of the project. However, we must realize that all this modifies the ecological quality of objects, and even their over-all quality, without necessarily affecting the dynamics of consumption. The problem of quantitative obsolescence, what affects the useful life of the object, remains on the whole intact.

We may also say that at the moment alternative paths are being studied to face the problems posed by consumption quantity. The re-orienting of activities, from material productivity to service production, for example, can be the basis of a strategy for the rationalization of more plausible environmental costs. And these strategies may be given more potential by an intelligent use of the possibilities of the technology and computer revolutions.

Semiosphere and symbolic entropy

Saturation and entropy are not phenomena that affect only our physical world. There are obvious symptoms that allow us to speak in terms of saturation and entropy about significant and symbolic cultural production. We could ask ourselves, for example, if there is a ceiling for the production of information or for the capacity for receiving images and plastic perceptions. We could also evaluate the effect of disorder and chance, characteristic of entropy, that is quite definitely being found in what is beginning to be conceptualized as the semiosphere (by analogy with the biosphere). But rather than discussing both phenomena —that of physical entropy and significant entropy— separately, what we are interested in here is observing their relationship and complementarity, referred to consumer objects.

The useful life of an object is partly programmed by its being technologically up-to-date and partly by its capacity of usefulness to the user. Innovations which increase the efficiency or benefits of an object

accelerate its substitution in a definitive way. There are types of objects with great technological and useful stability (furniture and clothing). Others, on the other hand, are subject to rapid processes of technical obsolescence of benefits (consumer electronics). However, the rythm of obsolescence in consumption has no relationship to this logic.

The useful life of an object is really programmed by its significant and cultural validity. The process of object obsolescence, which in our consumer-oriented culture transforms the object into a residue very quickly, is the process of semiotic depreciation and esthetic obsolescence. From which we come to the need of planning the life-cycle of the significant and the esthetic dimension of the environment and its objects in terms of ecologic effects (both semiotic and material).

The life-cycle of the symbol (and of the sense of a form) has been transformed, in the West, into a real ecologic problem, as the temporal validity of an appearance determines, quite often, the final fate of its material support. The problem, however, cannot be faced from old prejudgements or ignoring the new realities. It is not traditional functionalism in design, committed to a mechanical industrial civilization and its transformation rythms, that can give answers to a civilization which operates at electronic and computer speeds.

The esthetic and cultural qualification of objects is an element —quite important— for altering the dynamics of consumption in an ecologic sense. We must work on the possibility of retaining and renewing the affective relationship with the object and the possibility of bringing the benefits of an artifact up to date without substituting it. The ecologically educated object is an object conceived and designed bearing in mind a long useful life-cycle, with a greater versatility and possibility of adapting, or, if you like, transvestism; with a greater capacity for interacting with the user; with a capacity for regeneration as to the validity of its sense and esthetic appreciation. Objects of this kind must contribute to and facilitate consensus about the reduction of the quantity of consumption. Design implies, from now on, imagining and creating in the light of this reduction of significant entropy. This, at least, could be the ecologic framework which could inspire the new esthetic research into the culture of the project.