

LA POÉTICA DE LA DESVIACIÓN

Esta investigación morfogenética tiene sobre todo sentido en su utilización como instrumento de gestión de los significados. El estudio de las relaciones entre forma y significado es labor de la semántica y de la semiología, y, puesto que no hay forma sin significado, no sorprende que también la teoría del diseño, conducida sobre todo en el extranjero, haya intentado aplicar los resultados de las investigaciones semánticas. Pero, por cuanto yo sé, se ha limitado a esto, sin individuar en las evoluciones de la nueva retórica la terminología más adecuada al lenguaje diseño.

Los trabajos de Genette,¹² de Blanché,¹³ de Todorov,¹⁴ del grupo MY¹⁵ y de Eco¹⁶ han contribuido al estudio de los fundamentos lógicos de la clasificación de la modalidad de tratamiento de aquel espacio, llamado «desviación», que como todo espacio tiene una forma propia, que separa el significado de la figura del sentido primero, o, en términos del diseño, la forma poética de la función primitiva. Como es sabido, no podemos engañarnos sobre la posibilidad de una trasposición simple de las investigaciones lingüísticas verbales a las no verbales, como las de los productos, pero se puede fácilmente demostrar la presencia de figuras como la metáfora, la metonimia, la sinécdoque, la ironía, etc., en los productos de diseño.

Éstas y otras figuras retóricas también se pueden interpretar, en el diseño, como «cambios de coordenadas», es decir, como la sustitución de ciertas unidades de significación, como las indicativas de la función del objeto, por otras diferentes, menos obvias, dirigidas a obtener efectos poéticos. La nueva retórica lleva a cabo una clasificación de las figuras según los diversos tipos de desviación.

Las desviaciones pueden producirse tanto en las formas, respecto de la tipología funcional canónica en su morfología corriente, como en los contenidos, respecto del significado inherente a la función; tanto en el producto como totalidad, similar a un texto, como en los elementos particulares, similares a segmentos del texto. Un diseño que utiliza formas consuetas que remiten a contenidos banales (sin ironía) no constituye una figura retórica. La normalidad se convierte así en una medida de la originalidad. Ésta es, sin embargo, siempre local, determinada por el contexto socio-cultural y por lo tanto relativa, lo cual hace nuestra investigación infinitamente ambigua y compleja.

Estoy convencido de que la escuela de diseño puede tener un lugar preferencial para investigar en torno a esa complejidad porque, en mi opinión, el conocimiento del proceso de diseño, más que obstaculizar, estimula la creatividad.

12. Genette, Gérard, *Figures III*, Ed. du Seuil, París.

13. Blanché, Robert, *Introduction à la logique contemporaine*, Colin, París.

14. Todorov, Tzvetan, *Théories du symbole*, Ed. du Seuil, París, 1977.

15. Grupo MY. *Rhétorique générale*, Larousse, París, 1970.

16. Eco, Umberto, *Trattato di Semiotica Generale*, Bompiani, Milán, 1975 (trad. esp.: Lumen, Barcelona, 1977).

T HE SEARCH FOR DESIGN

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Long experience in the ISIA in Rome, teaching not only the operative design of the product but also its methodology, has led me here, as will be seen, to draw a rather sceptical picture of the teaching of the discipline of design.

In the following pages I will put forward my observations in an informal manner, noting only certain aspects of the problem and these without any rigorous system.

DISCIPLINARY INSUFFICIENCY

In all truth, the lack of coincidence between school and reality, between talking of something and doing it, is particularly visible in our discipline. But there is more: design itself as a profession, immersed in increasingly vast, differentiated social and commercial circuits, reveals in diverse forms, even on the fringe of idealogies, the distancing between production and the «real» demands of the users. As a result of this there arises the question: "On what foundations could the teaching of design be based and how should the contents of the diverse disciplines be joined together?"

Are we by any chance pulling users' and students' legs? Or our own? What could be a valid conclusion in so far as present-day teaching is concerned? The prospect of a closure of schools and the transfer of students to the workshops of the master craftsmen are paradoxical hypotheses, which serve, however, to underline my unease and disagreement.

THE BASIC COURSE

The distancing with respect to reality observed on the part of the schools of design perhaps begins already at the level of the so-called courses in «basic design», of Bauhaus memory, which are today offered in the first year in many schools as experiments with forms, materials and colours with the aim of sharpening the perceptive and creative sensitivity of the students and which perhaps also introduce a feeling of euphoria induced by the easy, uncommitted result. Moreover, anyone who seeks in these exercises an anticipation of the application of the theory of perception, of Gestalt, etc., is deceiving himself: in design praxis, as far as I am aware, no usable contribution has been obtained from these theories, although of course interesting explanations can be provided *a posteriori* for the tangible results of the realization of the project.

Any evolution of these courses towards a more trenchant appreciation of present day life is therefore to be favoured.

The debate must be focused on the misunderstanding of these and other subjects which make up design courses. For example, the ambiguous interpretation of ergonomics as a mere anthropometrical or physiological key will have to evolve towards a more profound analysis of the man-environment relationship (for an example of this see Maldonado's criticism of the ergonomic concept of «comfort»);¹ marketing must not be reduced to a reading of catalogues or sales outlets but must develop in a sociological or psychological direction; the history of design must be built up as an analysis of ideas, rather than as a photographic reading by means of artistic trends recognizable in the products of the masters. This critical revision of our courses is under way but we are still far from being able to state that we have solved the problem of the first two years. Despite the constant introduction of elements of design, we still witness a fall in the expectations and results of the students when the moment comes when they have to design something useful and real, in the third or fourth year of their course of study. If the student is good, if he is professional when he finishes his academic curriculum—it is time this was said—he *is* all this, in part at least, *in spite of* the school, however paradoxical this might sound.

THE INADEQUACY AND UNFEASIBILITY OF A THEORY OF DESIGN

I am exaggerating, of course. Nevertheless, to continue teaching signifies one of two things: you either close your eyes to this reality or you hope to find a positive way of overcoming it. And here we are touching on a sore point. Practice shows that there neither exists nor can exist any theory or any methodology of design, as Guy Bonsiepe affirmed as early as 1973 in an incisive article in the journal *Form*, entitled «Splendore e noia della metodologia del design». The product is always born spontaneously as the result of infinite combinations of «input» and intuition, evading all description or classification. But does the same not occur perhaps with all projects, those of architects, engineers, sociologists, politicians? Science itself, in fact, always follows discovery: investigation can be aimed in a certain direction but cannot be led with any system or certainty towards the convincing and definitive result.

The so-called methodologies of design—a classic example of which is the text by Alexander—² are limited to quantifying a set of data or to explaining the flow of decisions or the processes and to making them synoptically visible; but in my opinion they fail to reach the substance, the nucleus of what was projected and, even less, the design.

1. Maldonado, Tomas, «L'idea di confort», in *Il futuro della modernità*, Feltrinelli, 1987, p. 96.

2. Alexander Christopher, *Notes on the synthesis of form*, Cambridge, Mass., 1966, p. 15.

THE ANALYSIS OF THE PRODUCT

However, a classification of products does not appear so complicated if we compare the analysis of a product with the analysis of a natural object or being. A product has, after all, been created by man through a cognizable process, capable of being analysed, and the most complicated product seems to far less so than a mosquito, for example, the sun's rays or an earthquake, whose analysis, on the contrary, has generated whole theories. The form of products is measurable, classifiable, their function can be experienced, their price is known. Baudrillard analysed a set of products in his *Le système des objets* (1968)³ and showed how, from a sociological point of view, the product is inextricably tied to the behaviour of individuals and groups. The whole thing thus becomes more complicated and a theory of design seems destined to lose itself in countless vague limits with or superimpositions on other disciplines such as sociology, psychology, semiotics etc.

SOME SUGGESTIONS

The teaching of design and design methodology can have some sense if, starting from this recognized disciplinary insufficiency, it is directed towards the formulation of concepts by areas of relevance and towards the experimental verification of these: in short, the school as a centre of investigation progressively constructing the professional texture which until now has remained concealed in the day to day work of the designer. And, as in most present-day scientific research, the observation of reality as a system of signs lies at the centre of this didactic objective.

In fact, from a methodological point of view, the real process of design consists of a sequence of episodes, of searching for, of working on and of generalizing information. Little, however, is known at a theoretic level of these encounters between reality and image, of their nature and their mechanisms.

We could take as an example the search for information at the beginning of a project. Essential information which the designer must have at his disposal is that which refers to the future user of his products. Providing information about this is, in big companies, one of the tasks of marketing. Marketing, however, lacking adequate socio-psychological tools for analysing needs or motivations inherent in a purchase and for their projection into the future, usually limits itself to providing data about the market, useful but insufficient for a project brief.

THE PROCESS OF IMAGE FORMATION

The designer must therefore invent the image of the product, with or without information about user expectations and the characteristics of the products which may correspond to them. How does a designer proceed in the creation of this image? It is always free invention or do there exist objective

3. Baudrillard, Jean, *Le système des objets*, Gallimard, Paris, 1968.

links, for example, between form and function? In the second of these cases we must ask ourselves why then there does not exist a science of design, an anatomy of the products in daily use, to investigate the nature and consistency of these links.

In many sciences, problem solving starts from indications which lead on to hypothetical real states. Biology, for example, has developed a vast body of systematic knowledge about living nature, about its genesis and about its functional aspects, not only with respect to individuals but also to smaller components and their conglomeration into larger systems.

Mechanical projecting and design move inside a territory traced out by technical, legislative, ergonomic and other norms, but in which the morphological theory is scarcely defined. Engineering, for instance, consists essentially of calculation techniques and examples of construction, yet it does not possess a subject which describes the genesis of the mechanical forms, unless we wish to consider as such the occasional essay on the classification of forms that can be generated by tool-machines or on the generalization of movements with diverse mechanisms.

RHETORIC AS INVESTIGATION INTO THE MANIPULATION OF MEANINGS

118 What is surprising, on the other hand, is the quantity and quality of studies relating to image and perception, and more specifically to information and communication. It is not our intention here to give an historical explanation for the closer attention paid to those sciences which are concerned with perception in comparison to those related to the morphogenesis of manufacturing, a matter, incidentally, by no means deserving of our scorn.

The form-content or significant-signified unity perceived by the user-interpretant is already the object of linguistic and semiotic analysis, with application in such diverse fields as ethology, sociology and cybernetics. By analogy with this investigation and with the assumption of the communicative character of the product, the substance-image link can be better investigated. To this end, it is possible to carry out a classification of the mechanisms of significance on the analogy of what is proposed by modern rhetoric, which deals with the manipulation of the meanings of messages.

In fact, it is the prerogative of the designer to confer on his product a communicative connotation, which makes it interesting and original, that is to say, informative.

DESIGN AS A METAPHOR FOR THE VITAL WORLD

A product designed by a designer carries, on the «form-merchandise» plane,⁴ to the extent that it characterizes the certain «material culture» of a social group, information related to the functions and functioning of the object, the nature of the material and the production processes applied to it, its qualitative level etc. and, in a more general aspect,

4. Ricoeur, Paul, *La métaphore vive*, Ed. du Seuil, Paris, 1975.

information related to the «infrastructure» of the industrial and commercial society. The originality of the product derives from the subjective interpretation which the designer gives to this information, surpassing it in the expression of the whole and of the details of the product.

The critical re-reading and the re-working of the vital world which the designer carries out activate «an ability to recognize and take in society». Design can therefore be seen as a metaphorical reproduction of the vital world: no longer as an impoverished and instrumental mimesis of it, but rather as the object of a rite or game potentially rich in implications for the user, who can rediscover in it both his own dignity and that of others. The designer contributes, from this viewpoint, to the refounding of the relationship between man and his environment; a relationship in which the objects produced by industry, instead of multiplying and diversifying from the mere supposition of their saleability, are aimed «towards» a knowledge on the part of the user-protagonist of the meaning of his own choices.

The «product-sign» and «function-sign» set has for Baudrillard a coherence while inserted in a system of signs. Primary, secondary and auxiliary functions can be recognized and interpreted through their transposition or translation into products which assume the aspect of texts composed of signs and which, according to Baudrillard, form a coherent system. This semiotic system is manipulatable: products are potential vehicles of social strategies.

LEGITIMATIZATION

It is doubtful if in a postmodern perspective, twenty years after Baudrillard's essay, with the decline of the great ideologies, it is still possible to talk of a coherent system of signs. Rather one can affirm with Lyotard⁵ that the semiotic system of product-function and social interactions consists of linguistic games and local and provisional legitimatization with the only real aim that of optimizing the relationship between «input» and «output», in other words, that of «performativity». The sign function of the products is, then, confirmed but not the coherence of the semiotic system. For us, however, it is a question not only of optimization with incoherent features but also, surpassing the semiotic vision, of communicative expressions. Joachim Krausse⁶ makes this limit of semiology explicit, with particular application to design, when he says that «it has not succeeded in clarifying the characteristic relationship of interchange between the material supports of the messages and the messages themselves».

A SEMIOTIC POLARITY

Any theory of design is inevitably based on this double reality: on the one hand the structure and form of the product and on the other its informative manipulation. No artistic

5. Lyotard, Jean François, *La condition postmoderne*, Paris, 1979.

6. Krausse, Joachim, «Black box», *Form und Zweck*, n. 2,3,4 and 5, 1989, East Berlin, p. 46.

spontaneity refutes, for example, the evidence of the product as a prosthesis between man and the environment. It is precisely in this functional polarity that the great complexity of the reality of design resides. The pole of man reflects all the ambiguity of use, and that of the environment the systematic difficulty of the vital world. In the governing of this relationship the creativity of the designer intervenes, generally by shifting and transforming the weight of the meanings towards the surprising and unusual, perhaps also at the expense of simple functionality. In this respect I wish to make it clear that the designer may perhaps contribute through his creativity to the solution of practical problems, real problems, for example those of an environmental or social nature, but this activity is not a characteristic of his profession but is a more general problem solving activity; the real work of the designer consists of manipulating meanings by means of intervention in the image of the products.

THE MENTAL PROCESS

In the mind of the designer something happens which I find interesting and which could be better analysed. The process of designing is carried out with a pencil or with a model, by experimenting with different forms until, by a series of successive steps, a solution is found which seems satisfactory. Perhaps we have not taken into sufficient account the fact that these operations are preceded by reflection; reflection which, overcoming initial situational problems generally of a verbal type, will also be of a morphological nature. Having reached this point, we can venture the hypothesis of the existence in the designer's mind of some imagined matter on which he intervenes mentally, composing it, bending it, stretching it, cutting it, and which I propose we should call «Mental Design Model» or MDM.

Our attention is attracted by the perhaps not so fortuitous analogy with biology, which deals with forms and their transformation in the most complex context of living nature.

We are referring specifically to morphogenesis, which deals with the growth of organisms, as formulated at the beginning of the century by D'Arcy Wentworth Thompson⁷ and later, in the fifties, developed by the embryologist C. H. Waddington, to be subsequently studied in depth by Jean Piaget in the field of psychology⁸ and in that of mathematics by René Thom in his «catastrophe theory»⁹ and now brought up to date in science and philosophy in the works of Michel Serres¹⁰ and Gilles Deleuze.¹¹ These two writers find a common and inspired starting hypothesis in the intuition of Leibnitz (1646-1716), in which all forms, living or non-living, are at one and the same time similar and diverse, and determined by actions of «plastic» or «elastic» forces.

Thompson says in this respect: «The form of any one part of matter, living or dead, and the changes in form that are

evident in its movements and growth can always be described as a result of the action of forces. In short, the form of an object is a «diagram of forces», in the sense that from it we can judge or deduce the forces which are acting or have acted.» The play of these internal and external forces finds in the forms a more or less stable equilibrium, which is well exemplified by the embryo and its differentiated development, whether globally as a genotype or locally as a phenotype.

Waddington applies this plan to the development of the egg, considered as «a homogenous mass prepared to be crystallized», which goes through a series of predetermined states in the morphogenetic or «creode» field, a development controlled and regulated in space-time by «homeothesis», which corrects, within certain limits, deviations caused by the environment.

Jean Piaget extends this theory to the development of the intellect in his *Biologie et connaissance* and affirms, after showing the numerous analogies existing between morphogenesis and the evolution of the cognitive processes, that diversity resides above all in the possibility of abstraction, which characterizes the «higher cognitive functions» with the possibility of dissociating form from content. This possibility becomes reality, according to Piaget, precisely with the development of «a formal logic in the sense of an organizing structure applicable to any content».

DESIGN AS A SCIENCE FICTION STIMULUS FOR THE «BASIC» COURSE

Having reached this point, we can now venture a hypothesis. of a somewhat science fiction nature, about man, the most highly evolved stage in biological development: in order to conceptualize and design, he uses mental models which repeat in many aspects his own evolutionary process. The MDM, in fact, develops from the simple initial basic form, under the influence of the intellect, and passes through successive phases of increasing complexity until it arrives, also with external «input», at the definitive concept of the form-function of the product. Design products can be considered, from this viewpoint, as final stages in the biological processes.

The MDM is, thus, a structure which is formed in the imagination and which assumes apparent characteristics, be they physical, functional, formal or aesthetic, by means of formal events, catastrophes, provoked by mental forces with the object of hypothetically solving the problem of the design of the product. This intuition of ours will be able to contribute to the transformation of the teaching of the «basic» course so that the student learns to consciously model forms, structures and colours, right down to their details, even on the fringe of mechanistic schematizations or Euclidean geometry.

THE POETICS OF DEVIATION

This morphogenetic investigation makes sense above all in its use as an instrument for the management of meanings. The study of the relationship between form and meaning is the job of semantics and semiology and, since there is no

7. Thompson, D'Arcy W., *On Growth and Form*, UP, Cambridge, 1959.

8. Piaget, Jean, *Biologie et connaissance*, Gallimard, Paris, 1967.

9. Thom, René, *Modèles mathématiques de la morphogénèse*, UGE, Paris, 1974.

10. Serres, M., *Passage au Nord-Ouest*, Ed. de Minuit, Paris, 1980.

11. Deleuze, Gilles, *Le pli*, Ed. de Minuit, Paris, 1988.

form without meaning, it is not surprising that the theory of design, above all abroad, has tried to apply the results of semantic investigations. But, as far as I am aware, it has been limited to this, without establishing in the evolution of the new rhetoric a terminology more suited to the language of design.

The work of Genette,¹² Blanché,¹³ Todorov,¹⁴ the MY group¹⁵ and Eco¹⁶ has contributed to the study of the logical foundations of the classification of the way of treating that space called «deviation», which, like every other space, has a form of its own which separates the meaning of the figure from its first sense, or in design terms, the poetic form from the primitive function. As we know, we cannot deceive ourselves about the possibility of a simple transposition of linguistic investigation that is verbal into a non-verbal type, such as that of products, but we can easily reveal the presence of figures like metaphor, metonymy, synecdoche, irony etc. in design products.

These and other rhetorical figures can also be interpreted in design as «changes of co-ordinates», that is, as the replacement of certain units of meaning such as indicators of the function of the object by others that are less obvious and aimed at achieving poetic effects. The new rhetoric carries out a classification of figures according to the different types of deviation.

Deviations can occur both in form, with regard to the canonical functional typography in its current morphology, and also in content, with regard to the meaning inherent in the function; both in the product as a whole, similar to a text, and also in individual elements, similar to segments of the text. A design which employs well-worn forms which refer to a commonplace content (without irony) does not constitute a rhetorical figure. Normality thus becomes a measure of originality. This is, however, always local, determined by the sociocultural context and therefore relative, which makes our investigation infinitely ambiguous and complex.

I am convinced that the school of design can occupy a place of preference in the investigation of this complexity because, in my opinion, a knowledge of the design process, far from being an obstacle, stimulates creativity.

12. Genette, Gérard, *Figures III*, Ed. du Seuil, Paris.

13. Blanché, Robert, *Introduction à la logique contemporaine*, Colin, Paris.

14. Todorov, Tzvetan, *Théories du symbole*, Ed. du Seuil, Paris, 1977.

15. MY Group, *Rhétorique générale*, Larousse, Paris, 1970.

16. Eco, Umberto, *Trattato di Semiotica Generale*, Bompiani, Milan, 1975.