

Entries in *The Encyclopedia of Semiotics* (P. Bouissac, Ed.). Oxford/New York: Oxford University Press, 1998: Max Bense (pp. 72-74), Ernst Cassirer (pp. 108-110), Computer (pp. 136-138), Eugen Coseriu (pp. 148-150), Interface (pp. 319-321), Parallelism (pp. 465-467), Structure (pp. 601-603)

## Design

Exceptionally rich in connotations, *design* (as verb or noun) suggests the activity of marking out, of conceiving a plan in one's mind, of devising means for a specific function. It also has the connotation of creating and calculating for a predetermined end (a definition of particular relevance to engineering design). It also covers such apparently unrelated activities as to *designate* for office and function, to generate an undercover scheme or plot of disputable intent, to have a purpose (artistic or not) in mind. There is, nevertheless, something that brings all these connotations into some focus. The word (with its roots in Latin) points to an activity that centers on the sign. Indeed, the word *design* could mean "from the sign," "on account of the sign," "concerning the sign," according to the sign," "through the medium of the sign." All these possible understandings imply the semiotic nature of design activity. This might be a meaning conjured after the experience of modern semiotics, but nevertheless experientially grounded in the nature of the activity (to design) and of the products (designs) the world labels. It is no surprise then that designers were among the first to show interest in the modern revival of semiotics, an interest that continues unabated. In search of a theory for a field of human practice characterized by a lack of conceptual discipline, designers were (and still are) willing to adopt semiotics as their theory (or metatheory), provided that semioticians pay attention to critical problems of design, and do not extend a language-based model where image-based understanding is expected.

Initially seen as a form of applied drawing, design evolved to integrate messages, artifacts, and events. "Nearly every object we use, most of the clothes we wear and many things we eat have been designed," observed Adrian Forty in his historic overview. The examples mentioned (fashion, products, food) need to be expanded in order to integrate design engineering, architecture, interior design, interface design, and the design of ceremonies and political events, all in extension of the practical activity of imagining things before we make them happen. Preliminary drawings by painters, sculptors, architects, even preliminary schemes conceived by poets, novelists, or playwrights are defined as designs. They are executed well before the work and sometimes do not lead to any further effort. Based on how the activity defined itself since the inception of the profession (in the eighteenth century), a good definition of design will have to show how a new designed reality emerges from what is possible and indeed desired.

Current distinctions are made between graphic design, advertising design, industrial design, product design, and fashion design, to name a few areas. They seem to express specializations rather than the awareness of a common denominator. It is clear that the persons who created the elaborate heraldic signs of the Middle Ages, or those who worked on identifiers for businesses (what is today called signage), or those who conceived of tools, weapons, or household utensils shared a sense of visual quality and understanding of how form, material, and desired function are related. When, only as recently as 1944, one of the first designer groups (the British Council of Industrial Design) identified its field of interest, design entered an age of commitments and

self-definition that led to the many design organizations and publications dedicated to various current aspects and practices of design. This process can be better understood as a change from the amorphous status of the Arts and Crafts movement to the status of a profession in search of its concepts, methods, and tools. Art Nouveau, the German Jugendstil, and the Bauhaus, are some of the stages in this development. Among those with considerable impact on the definition of design and its growing self-awareness (semiotic awareness included) are C.R. Mackintosh, P. Behrens, F.L. Wright, W. Gropius, A. Rodchenko, L. Mies van der Rohe, El Lissitzky, Le Corbusier, A. Aalto, and M. Breuer.

To design means, among other things, to plan, to anticipate according to a devised course of events in view of a goal, of material and technical constraints, and under the influence of the environment. Design reflects the awareness of quality (of objects, actions, representations) and the expectation of functionality within a framework of shared values. The environment of design is that of culture. “Engineering, medicine, business, architecture, and painting are concerned not with how things are but with how things might be – in short, with design,” noted Herbert Simon.

The observation implicitly states that all fields mentioned are subject to design activity. It is probably appropriate to state that design is one of the major human activities that shapes the future. Designers work towards a goal to be attained with the help of representations of this goal. These representations, whether drawings, models, or computer simulations, are semiotic means. In the course of its evolution, design acknowledged some representational conventions (perspective, section, rendering, among others), while continuously searching for new expressive means. Design requires a great deal of system (or method), especially in precise areas such as typography (which bears the heavy load of tradition), signage, specialized communication, or engineering. However, elements of inventiveness, spontaneity, even randomness confer “life” upon design. The human touch (dominantly the indexical sign of the designer or of the craftsman) makes perfection (of machine drawing or execution) more bearable. In the design representation, rationality, imagination, sensitivity, and invention coexist and interact. While pragmatic requirements are in the end decisive for any design endeavor, designers frequently pursue semantic goals or syntactic procedures. Semantically driven design tends to equate the representation with the function. Consequently, designs in the semantic mode are illustrative of what they emulate. This is why semantic design never took root in graphic design but were widespread in theories oriented towards product design. Syntactically based design mimics appearance under the assumption that functions will emerge from similar syntactic patterns.

Graphic design is often driven by syntactic considerations (a clear subset of design formalism). Encouraged by the analytical resolution of a semiotic approach to design, designers hoped to eventually integrate semiotic thought in their activity. Among the most controversial issues of a generative semiotic theory and of a semiotic practice of design are the dynamic aspects of designed artifacts. The “form follows function” paradigm that dominated until the seventies unequivocally expressed an obsession with function. The experience of designing that followed functionalism repositions the subject of semiotic process. It accounts for the many changes that take place in the process of designing and for the fact that many contexts (of understanding and use) replace each other: from the preliminaries of the design sketch until the result of design activity renders the actual artifact. One of such contexts is evaluation (internal, in terms specific to design, or external, in terms of the commissioned work). As a context of understanding,

previous exposure to a design concept turns out to be a design code. This is illustrated in the continuity implicit in interactions with everyday designed artifacts, such as radios, television sets, automobiles, coffeemakers, newspapers, television programs, and a host of home and office appliances and equipment. As a context of use, the appearance of new designs does not affect the user's understanding of them, but rather requires a continuous relearning of the "language" of newly designed artifacts. Increased performance and broader functionality of new designs demand an effort to comprehend their new semiotics (of more complex commands, of new functions, or of programmed use). Successful designs become fashionable and act as models throughout the period of success.

Design understood broadly as problem solving relies on the expectation that a neat distinction between the problem and the solution can be made. As we go through more and more practical experiences, many design answers to the problems we faced – in transportation, energy use, communication, social life, for example – turned out to cause new problems – pollution, waste, social fragmentation, educational inadequacy. Even built-in obsolescence, once a revolutionary concept, is now regarded as at least problematic. The new ecological awareness of design is but a reflex of the inadequacy of the problem-solving paradigm, but not yet the answer to a better notion and improved experience of designing.

Sign operations – substitution, insertion, omission – and sign typology – icon, index, symbol – can together constitute a "language" of design. In the semiotic component of design education in the United States, they became part of the vocabulary taught. Nevertheless, design is not reducible to "correct" semiotic "sentences" that result from a mechanical or electronic composition of signs. As opposed to language and its implicit expectations of correct grammar or precise orthography, design does not confirm rules, but continuously investigates new possibilities. Its visual determination places design investigation in the open-ended realm of experiment and innovation. Constraints pertaining to materials, processing technologies, and social and economic expectations are elements of challenge. Design creativity, as opposed to art, is quite often the result of overcoming constraints rather than of formal innovation. The material substratum of the sign is probably more relevant to designers than to many other semiotic practitioners. When people relate to designed artifacts, they ignore or are unaware of the underlying semiotics (involving the commissioned aspects of design) and interpret the artifact for what it is supposed to be, or for what they make of it in a given pragmatic context. For designers to be aware of semiotics, or to apply it, means to understand, in addition to technological, social, physical, and other aspects, that the sign process embodied in design continues in the use of what was designed. This forces into the equation of design the future user as a component of the design semiosis.

Design and design products can be interpreted as signs. But as products, regardless of their concrete realization, they are *not* semiotic entities, but rather the result of human needs and desires. Accordingly, while the symbolism of a certain design might be an important factor in the user's decision to buy it, the most important factor will be the product's performance. This raises the issue of design value and criteria for evaluation. During the documented history of design, various criteria were acknowledged: formal qualities, utility, functionality, adaptability, among others. It is impossible to define universal measures for successful design. The trade-off involved

in all design is determined in each particular evaluation context, and thus it seems that design as a projection seems to carry with it the “design yardstick” by which it should be evaluated.

Economic considerations that reflect a design’s intrinsic value, as well as the potential for its production (in limited or large-scale series) affect this yardstick.

The semiotic functions of design – its practicality, aesthetics, the theoretic aspect, and the symbolism ascertained through the convention of design – were suggested from a structuralist-based dualistic semiotics (elaborated by Mukarovsky). Taking process into consideration, these functions need to be complemented by heuristics (the inquisitive aspect of design interaction), cognition (what we learn in interacting with designed artifacts), and expressivity (the originality of design). If we look at design as applied semiotics, then design is, in the final analysis, the process through which signs appropriate to intended contexts of interpretation and use are generalized and integrated in new practical experiences. Contemporary design expresses this new condition in many ways, making extensive use of new technologies in order to model various contexts.

Systematic attempts to look at design from a semiotic perspective are on record in the Saussurean semiological applications of the French School (Roland Barthes contributed many interpretations of architecture, clothing, food, and photography), in the text-based cultural models (for which Yuri Lotman is celebrated), and in the Peircean tradition. The Ulm School of Design adopted a semiotic framework (in the 1960’s); Tomás Maldonado, Theo Crosby, and Guy Bonsiepe made initial contributions through their own design and in teaching design. Many contributions to semiotics followed both in the practice and theory of design in the United States, France, Germany, Ireland, Italy, and recently in Russia. Seduced by the powerful techniques of deconstruction, architects pursued their own semiotic concerns as these apply to the underlying design of their work. Integrated in the design of post-modern projects, deconstructionist strategies led to the juxtaposition of architectural signs of various historic and pragmatic contexts. Generally speaking, the post-modern is the embodiment of a semiotic-driven design intent on showing signs and sign operations, as well as integrating the user in the semiosis of the designed artifact. With the emergence of technologies supporting interactivity (in particular interactive multimedia as a design tool and medium), design faces new challenges that correspond to the new nature of the pragmatics of human activity. New tools, such as virtual reality environments, new means of communication, such as digital carriers and high-definition image displays, and new strategies of interaction, such as those facilitated by broadband networking, affect the condition of design as an integrative human activity involved in shaping the present and the future. As a computational activity, design reaches a new stage within which the dynamic component can be integrated through modelling or simulation. This new universe demands more sophisticated evaluation criteria that consider how new designs can be executed, as well as how the value of built-in obsolescence can be accounted for.

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