

Basic Problems in Design Semiotics

デザイン記号論における基礎的な問題

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1. Mediating Sign

It is very significant for designing that a Sign mediates between its Object and its Interpretant.

1) Genetic significance: Previously, when people were not only consumers but also designers and architects, they approached objects of their activity directly through personal and social Signs. But now, the social organization has grown complex, people are related to objects only as consumers. For, designers and architects act as agency standing, partially and professionally, for people.

2) Design methodological significance: Precision (Peirce's terminology) Signs in our activity is a certain way for us to recognize methods in our activity. Reason, recognized as a Sign, can act as an element of a method, that is, can avoid acting as an element of mere apology.

The conventional concept of a sign regards it as merely representing a particular thought. Correlates of the conception in this concept is but a diadic relation. One problem with such a conception is deciding what thought should be represented or how the thought should be represented. Analysis of such conception will make clear the thought represented by the sign. But the interest of modern design methodology is in processes and tools in design thinking or the reciprocity between the designer's activity and its object, rather than in the designer's thought. Therefore it is essential that a Sign mediates between its Object and its Interpretant, in other words that a Sign has a Triadic Relation. The Triadic Relation is a module of conceptional processes. A Sign in the Triadic Relation is a tool of conception.

Usually, information is understood as equal to knowledge. In designing, though, information

evolves in design processes or through reciprocities between design activity and its object. Design methodological interests in information are modes of the evolution and the function of information which causes reciprocities. Under such conditions, Signs are vehicles or embodiments of information, and the evolution of information produces new Signs. Also such a condition is naturally represented by a Triadic Relation of a Sign.

Another interest of design methodology is, of course, how to grasp the design object. The Triadic Relation is also useful for this purpose, because our environment, which is the design object, is rich with mediating Signs. We may understand that our environment has many diadic relations of signs (i.e. signs of conventional concepts). But those which we produce through designing constitute processes of human life and social systems. The sign of a diadic relation may be only a one of many.

2. Sign Sequence

The fact that a Triadic Relation is universal confuses us occasionally. A Sign, defined by its function and performance, is a concept and is not a fixed actual existence. Every particular existence exhibits the potential to act as a Sign. That is, something can be a Sign on a certain occasion for somebody. Even a letter may not always be a Sign. If the letter is shown to a baby, it will not be more than a mere figure or object for the baby. In reality, anything can be a Sign at a certain time as well as be an Object of another Sign at another time. It is also possible that something which is a Sign on the one hand may be simultaneously an Object another Sign on the other hand. In such a situation two Triadic Relations exist. Conceptions usually consist of more than one Triadic Relation. As concerns analysis or supposition of conceptions

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such as design thinking, continuity of Triadic Relations may be necessarily referred. I call the continued Triadic Relation of a Sign 'Sign Sequence'. It may be possible to consider several different kinds of Sign Sequence according to the particular types of continuity.

(1) We can distinguish design from a designed object. Designers first produce a design by using many technical Signs, design tools. Then, a design is the first Object, or Immediate Object, for a designer. This design, the first Object, must be embodied in a Sign (e.g. draughts). And this Sign represents the designed object which is an actual existence, e.g. housing, products, etc.. Again, the designed object can act as a Sign in its actual use. As a consequence, we can find three Triadic Relations which can be connected into a sequence (fig. 1).

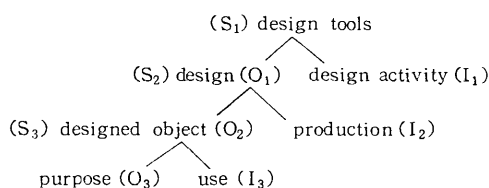


Fig. 1

This Sign Sequence represents elemental contents of a design object. That is, design objects generally contain information concerning production and usage. The three levels of this Sign Sequence may represent the genetic ones of designing. This also represents today's indirect relation between users and designers, and the complexity of today's design situation. This indirect relation has sometimes brought an isolation of the designer's activity from people's daily lives. This suggests there might be many Sign Sequences like the above in the activities of each phase related to designing (such as architecture, designing, engineering, manufacturing, use, ownership, etc.), and that these sequences might compose another Triadic Relation or Sign Sequence of higher level. In addition, there are still other significations or sign processes, e.g. the commercial sign process of catalogues. Thus, the complexity of today's design situations may be explained as a multi-phase structure of Sign Sequences.

(2) According to Peirce's definition of a Sign, an Interpretant is also a Sign because of its ability to create yet another Interpretant. Therefore, there can be said to be two Sign Sequences a) a sequence on one Object and b) a sequence on several Objects. The sequence on one Object is represented in figure 2, and the sequence on several Objects is diagrammed in figure 3. Often both of these sequences will be employed in the actual thinking process. These sequences represent diachronical sequences of actual thinking.

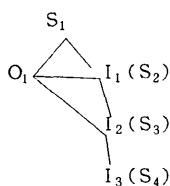


Fig. 2

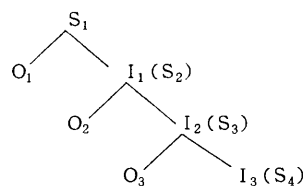


Fig. 3

(3) Sequences of actual thinking are more complicated than the above diagrams. When we evaluate an alternative design solution, we usually use some criteria. In this case, evaluation is an Interpretant of the criteria used as a Sign which evaluates the alternative, the Object of the Sign. Here we can see a Triadic Relation. As described in the first kind of Sign Sequence, a design in itself composes a Triadic Relation. Therefore we can regard the Object in the evaluation as a Sign of another Triadic Relation (fig. 4). Therefore, we can suppose another kind of sequence in which several different Triadic Relations are connected. Several modes of connection in such a sequence may be found.

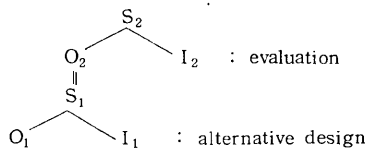


Fig. 4

These types of Sign Sequences are variations of Peirce's universal Triadic Relation of a Sign. Or, it can be said that the Triadic Relation of a Sign is universal in these Sign Sequences. Thus, the concept of Sign Sequence will effectively explain the universality of the Triadic Relation of a Sign. But how is a Sign Sequence useful? Is the

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concept of the Triadic Relation sufficient, because of its universality? Is the concept of the Sign Sequence unnecessary for more research? To study Sign Sequences in designing will be, I think, necessary for an examination of the characteristic elements of the Triadic Relation and relations within them in designing.

At least, here, I should refer to characteristics of designing based on the above description. That is, designing is neither mere communication nor mere signification, but rather it is a complex process of both which creates new Signs and new Triadic Relations.

3. Approaches of Design Semiotics

For about two decades designers and design researchers have been working very hard to apply many theories and methods which were developed in fields other than design. These theories and methods being very attractive, most designers and design researchers forgot to transform them with reference to the characteristics of design information. This resulted in examinations of these theories and methods to the neglect of design science.

If we apply semiotics to design, we should try to develop a semiotics of design and designing. Sign is a modular concept of design thinking. Therefore I think that it should be reasonable to develop design semiotics as a science of design thinking and a part of design methodology.

When we think of the universality of the Triadic Relation of a Sign, we may doubt the possibility of future developing (design) semiotics. In general the universality of the Triadic Relation may not be doubted, but it will require many studies on its usefulness in design and designing. It might require slight modifications or individualizations. In this sense, research concerning the relationship of elements within the Triadic Relation of a Sign and their sequences will bring feedback to the universality of Peirce's Triadic Relation and sign classification.

Logic was Peirce's main interest in semiotics. Logic can be very useful for designing. Even distinguishing Sign, Object and Interpretant from

one another, will be useful to check and develop thought. But, as design is not equal to logic, the logical characteristics of Peirce's semiotics must not be the single determining factor in designing. For then we might reasonably think of the universality of Peirce's Triadic Relation as the universality of a Sign, a modular concept in logic, rather than of the universality of designing. We should search specifically for logic in designing rather than logic in general.

If, in spite of these situations, we can find more significance in semiotic approaches than in traditional ones, they may consist in a 'triadic'. The object of architectural design science has traditionally been monadic architecture or a diadic relation between architecture and its users. Difference between traditional approaches have been differences of approach to the monadic or diadic object. On the contrary, characteristically semiotic approaches have Triadic Relations with their objects (i. e. mediate a Sign between its activity and its object, or refer to a Sign mediating between them).

This approach is suited to characteristics of design information. A Sign is an embodiment of information. Information has its function and performance, in accordance with the particular Sign. The function of information is to make possible reciprocity and process between activity and its object. And the performance of information is its evolution to new Sign. Semiotics is a science, as it were, which deals with such a mechanism of information revolution. Designing consists of such a mechanism.

4. Function, Performance, and Representation

A concept of function may be very significant to an understanding of modern architecture. One architect claimed that form followed function, another that function followed form. One architect approached function, while another architect began with function. We may be able to say that most recent architecture is the result of these approaches to function. The concept of function is now very common, so that it appears that the particular name 'functionalism' is already unnecessary.

The concept of function seems very useful but is, in fact, ineffective architectural design. The

concept of function calls for a new concept of 'performance'. Performance is a concept concerned with whether a design actually performs as it is or not. This concept has been useful as the industrialization of housing and architecture develops. This concept is, in itself, relative. For we cannot unconditionally determine performance. It is determined on particular conditions in practice. On the contrary, function can be unconditionally determined as possibility. Therefore, I suppose that function is a Firstness and performance is a Secondness.

In spite of the new concept, the engineering of architectural design has not been very fruitful with respect to the realization of (high) quality housing. It may take considerable time to clarify this

problem. Perhaps one key to resolve this problem is Thirdness. With design semiotics we have just such a Thirdness (i.e. representation).

The categories—function as Firstness, performance as Secondness, and representation as Thirdness—are, as matters now stand, mere supposition. However, I believe, it will be worth researching.

(Manuscript received, September 27, 1976)

Reference

Peirce, Ch. S., *Collected Papers of Charles Sanders Peirce*, (Hartshorne, Ch., Weiss, P., and Burks, A. W., ed.) Harvard University Press, 1965-1966, Cambridge.

[This paper is based on research on which I collaborated with Mr. Teruyuki Monnai, a doctoral student, at Ikebe Research Laboratory.]

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way to avoid apologies for our activities is to find a Sign, Object, and Interpretant in the activity. If, however, a reason is given as an apology, it can be treated as a problem of method by regarding the reason as a Sign whose Object is the aim of the activity which is an Interpretant of the Sign in its situation.

Peirce's thought concerning characteristics of his semiotics as logic appears, for instance, in the sign classes: according to the third trichotomy, a Sign may be termed a Rheme, a Dicisign or Dicotenon Sign (that is, a proposition or quasi-proposition), or an Argument. It may be doubtful whether these traditional classes are also useful to design science, though it should be significant that he included deduction, induction, and abduction in the Argument.

Abduction is a point where Japanese Marxist scientists blame Peirce for his unscientific approach. But certainly design thinking can not be adequately explained simply in terms of deduction and induction. (Manuscript received, September 27, 1976)

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- (2) Ogden, C. K. & Richards, I. A. (1923) *The Meaning of Meaning*, 10th edn., Routledge & Kegan Paul Ltd., London

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