

Semiotics and Graphic Design Education

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The Graphic Design Department at the Rhode Island School of Design is developing a philosophy and an approach to visual communication that reflects both an intellectual/theoretical tradition while it fosters the generation of visual experiment. This approach is based on the understanding that graphic design is visual communication design wherein the designer purposefully marks, signs, and names, thoughts events or facts, and conveys information with a definite meaning and significance. In developing communication systems, the graphic designer coordinates structural and functional relations to produce concise and clear communication for both sender and receiver. Moreover,

recognizing the social responsibility involved in this communication, as an interpreter of and contributor to human communications, the designer must be fully aware of not only what is said but how it is said, and must demonstrate a sensitivity to what is implied and consequently inferred. Thus, as a problem solver the graphic designer's qualifications must include at least a knowledge of communication and sign theory, as well as an understanding of form perception and a command of communication and reproduction processes.

In semiotic terms, the graphic designer aids his fellow man in the process of generating and digesting "signs." Semiotics is the theory of signs in which one studies problems of sign production and interpretation. A sign stands for something not physically present; it is the physical embodiment of thoughts, objects, or events to be transmitted for the purpose of clearer understanding. Semiotics becomes a significant, if not essential tool for the graphic designer, because the designer must understand the way man assigns meaning and responds to a sign, and because he must be capable of ascertaining which sign-vehicle under which conditions can carry specific communication and therefore become a sign.

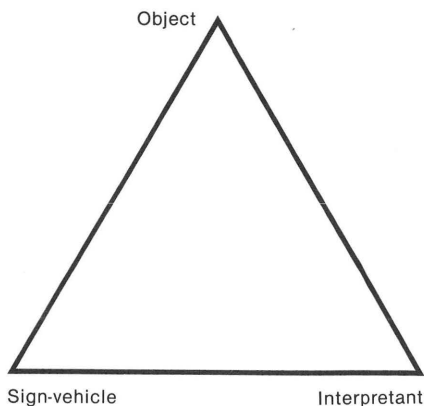
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In everyday language, the sign is understood to have a physical quality; but in semiotic terms, it is a relational concept which ties a stimulus to an abstract something. Charles Sanders Peirce formulated it most clearly when he stated that:

A sign is anything which determines something else (its *interpretant*) to refer to an object to which itself refers (the *object*) in the same way, the interpretant becoming in turn a sign, and so on ad infinitum.

It is the entire *triadic relation* which is called the sign in semiotic terms. In other words, when one uses the term sign, one denotes a *process* characterized by a stimulus (the *sign-vehicle* according to Morris, 1938) which is capable of representing an absent something (the object) in someone's mind in a certain way (the interpretant). Therefore, a sign is not a specific object or concretion. It is what it is by virtue of relations which participate in constituting it. What is of specific concern is not the concretion of the relation, the sign-vehicle, but the meaning of the relation, which is determined by the function "standing for."

The Sign Process

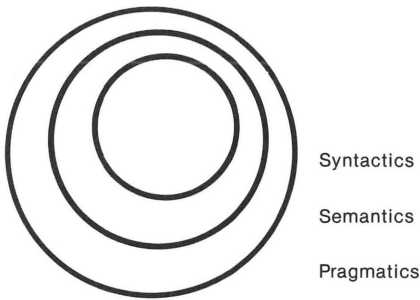


Semiotics has become an enlightening and useful tool in defining curriculum needs relative to language systems for the student of graphic design. It has not only allowed for a more scientific inquiry using the rules of combination and transformation, but it has aided us in clarifying and identifying a three year curriculum sequence. In principle we are using Charles Morris' triadic model of semiotics which specifies a breakdown of language into three basic categories: syntactics, or signs and their formal relations to other signs; semantics, or signs and their relations to the objects for which they stand; and pragmatics, or signs and their relations to interpreters.²

2

Charles Morris, **Foundations of the Theory of Signs**, Chicago: The University of Chicago Press, 1938.

Figure 1



Since the three categories are interdependent of each other (see Figure 1), their separation at any stage of the education process is only one of degree. While this artificial breakdown is not reflected in ordinary sign use, it allows one to focus more on one aspect of the functioning of a sign over the other two, and vice versa. By isolating to a degree one function, the student begins to identify and know its significance in the sign complex. Thus, the first third of instruction deals with problems of syntax, the sign-object relation in terms of the "grammar" of form (proportion, gestalt principles, symmetry, etc); the second third deals with problems of semantics, or representation with respect to sign-object as well as sign-interpretant correlation; and the last third deals with problems of pragmatics, or the sign in relation to the user/subject, and the evaluation of sign-vehicle and codes.

Traditionally, many design programs focus primarily on syntax, the formal visual structure of communication. However, if the designer is to communicate comprehensively and clearly, the semantic and pragmatic aspects of the process cannot be excluded; aspects of structure, meaning, and use must be considered in a symbiotic manner.

Special attention is paid to semantic issues during the second third of the curriculum. This is introduced through the study of semiotics in a required junior level course and is pursued in various other courses in the department and as individual research at advanced levels. The experience has demonstrated that the introduction to semiotics has been particularly helpful in clarifying the problems in visual communication and sign-production. Because of the unusual quality of this segment of the curriculum, a review of the theoretical basis of the course and projects follow. Since 1974 Thomas Ockerse and Hans van Dijk co-directed and are responsible for the thrust of these studies.³

3

Some of the following text was extracted from Hans van Dijk's unpublished thesis "The Role of Semiotics in Graphic Design," 1978.



French worm

piscalo

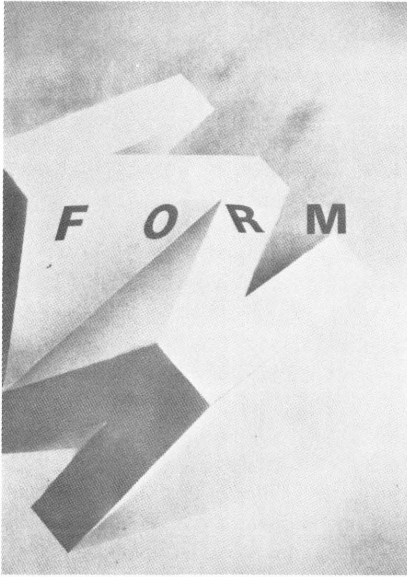
bassoon

oboe

clarinet

flute





Each of these projects deals with specific modes of *formation* and *transformation* and with the sign-object as well as sign-interpretant relationship. The types of formation and transformation these projects deal with, while considered significant, are not yet classified in a system for sign-production. The labels that identify the processes are chosen rather intuitively, although each of them deals with a specific operation or distinct combination. It seems necessary, though, to start working towards a consistent system of sign-production so that graphic designers can more precisely describe and select the operation which determines specific correlations of signs and their object and

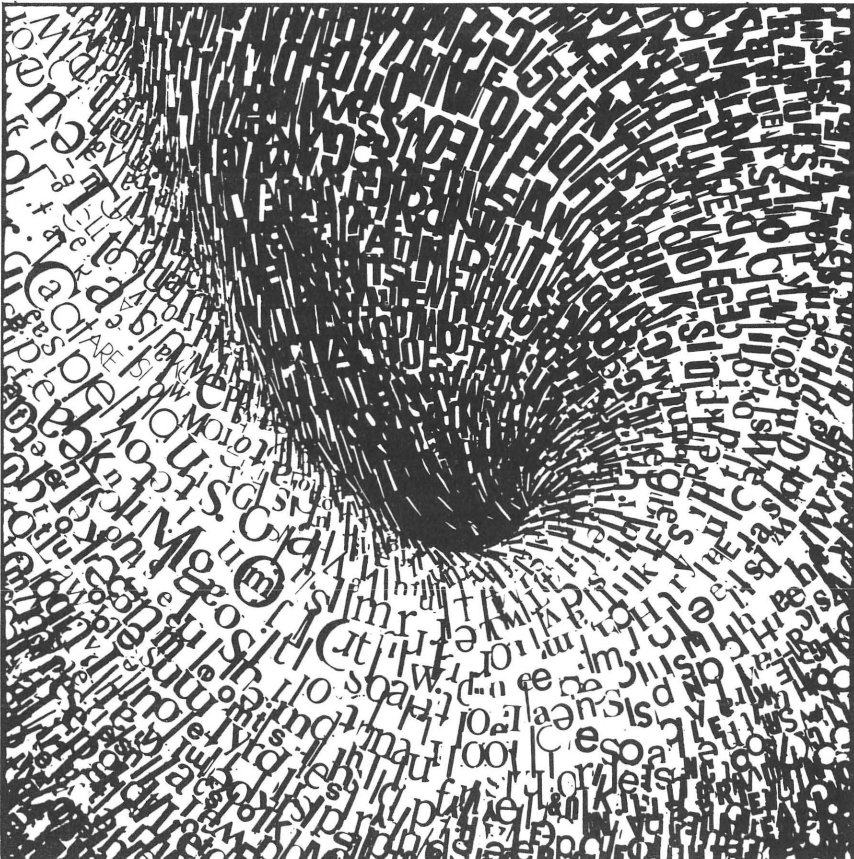
interpretant. In the given projects, these dimensions interact rather freely, although sometimes there seems to be a bias towards the sign-interpretant interaction. The relationship between sign and interpretant is a more challenging dimension which specifically supports studies of sign mode translation (such as verbal-visual equations which will be explored later), identifies the range of design decisions a student has to make, and aids the student in his creative development as well. Projects of sign-object relationships seem to be of a more traditional nature (universal signs are an example of this and will be discussed later) and become rather quickly studies of representation versus perception; the abstraction of features and their level of informational content.

All projects described here are not the result of a rigorous analysis of semiotics and do not represent the process of sign-production in some hierarchical order. Although the projects are based on certain semiotic theories or conventions, their origin and relation are still vague and tentative. The modes of production require further testing and refinement. But at least the projects start to define some basic problems and stimulate many more questions than they sought to answer.

Some of the projects deal with equivalencies at the structural or semantical level as influenced by processes of substitution. In other projects, contextual manipulation determined degrees of significance. Some projects (such as the score) mainly concerned with sign-object relations and rules of logical formation in the end become supersigns. The development of a functional

signage system allowed for investigation of denotative and connotative dimensions beyond the concern for syntactical consistency. What follows is a description and visual sampling of each problem of sign-production developed thus far.

Supersign: a sign which allows for a complex simultaneity of possible interpretants.



Substitution

The student is provided with a specific photograph as a starting point and asked to substitute other pictorial elements for the main components of the picture.

The logic for the substitution is based on either syntactic, semantic, or pragmatic aspects. Consequently three series, each of at least four variations, is developed. Each variation relates in some logical manner to the sign immediately preceding it.



In the syntactic substitutions, shown in the first row of Figure 2, the changing element in each plate involves replacement of visual forms and structures with other elements which have some formal correlation: two shapes at the top (faucets, telephone poles, legs, etc.); the oval shape in the center; and the slightly angular linear pattern at the bottom. The number of elements and their spatial relation is generally maintained in respect to the preceding plate, although changes occur progressively because of the differences between the substitutes. This part of the assignment emphasizes the interdependence of structure and meaning.

The semantic variations explore the sign-interpretant or interpretant-interpretant relation. Each variation is motivated by something in the sign before it. Consequently, all variations must have some relation to the original sign; all signs could be considered interpretants of one another.

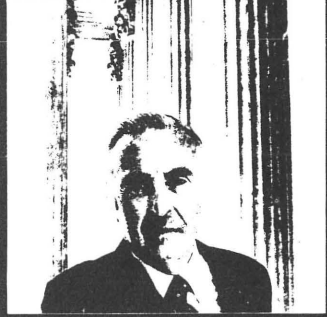
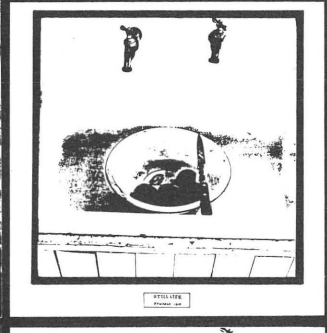
In the final series the students explore the original sign in terms of various potential uses. By superimposing some new sign on the given one, the original significance is transformed: the sign-object relation changes. The same sign can now be connected with a variety of objects.

Figure 2

Syntactic

Semantic

Pragmatic



Parallax

The kind and amount of information one can convey about a situation or object by means of a sign depends on the contextual conditions of that sign. When one changes one's point of view (physically) with regard to an object or situation, different features are perceived, while features perceived earlier appear in a changed spatial position or disappear altogether. The order in which features are perceived becomes a significant aspect in the representation of a situation taking place in time.



366



The students represent (by means of photographic slides) several discrete moments of an event taking place in time from as many as eight different points of view. Each different point of view addresses the same discrete moment of the event in question. Consequently, the result takes on the character of a two-dimensional interaction matrix. Along the horizontal rows of the matrix (Figure 3), the steps of the event are listed; each vertical column lists the same step as seen from eight different points of view. This result can be called, after Eco, the expression field about a certain content field. At the end of this process, the students are asked to edit from this entire expression field one sequence which most eloquently, effectively, and aesthetically represents the event.



This part of the project explores variations in the sign-object relationship. These are studied by means of manipulating the environment and focusing in on the significant features by means of photographic operations like focus, cropping, angle, and lighting. The students' editorial involvement with selection of characteristic aspects of the event is also significant. This is a pure

semiotic task because it involves identifying the potential of movements, features, and expressions to act as signs.

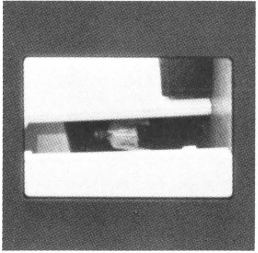
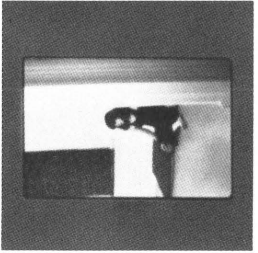
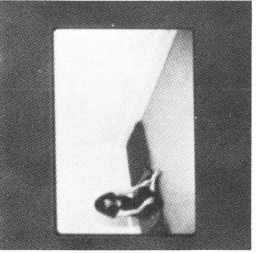
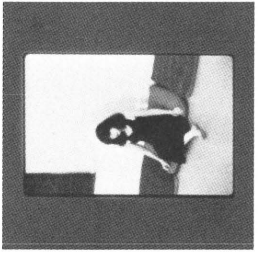
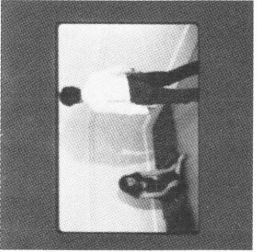
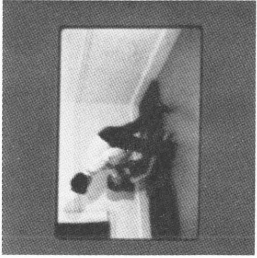




Figure 3

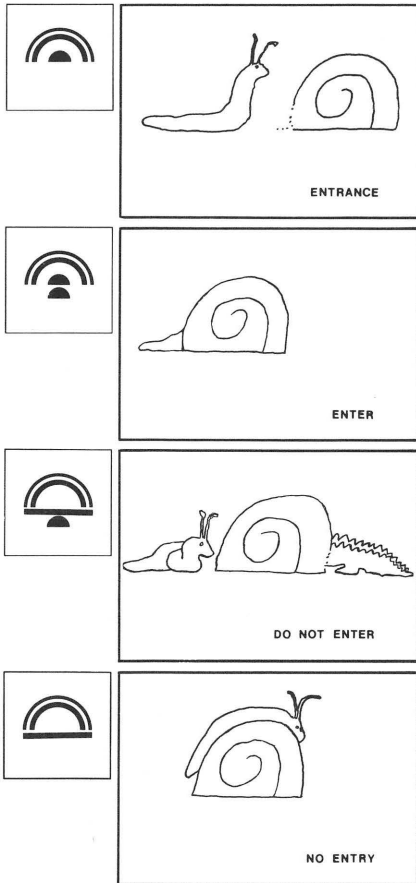


Figure 4

This project combines rules of formation and transformation. It is, as such, the beginning of the development of a logical language. The content concerns a set of international transportation situations, such as entrance, exit, no entry, no exit, enter, do not enter, exit, do not exit (Figure 4). The sign-object relation can be either iconic, indexical, or symbolic, but one mode is to dominate the system. A code which governs the sign-interpretant relation is selected or developed, and is included in the sign system itself as metalanguage.

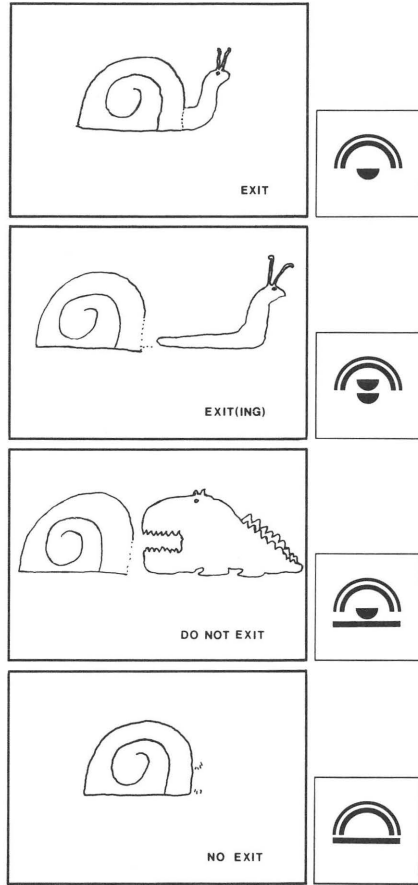
Icon: a sign which has features in common with the object, and characterizes, pictures, or imitates this object.

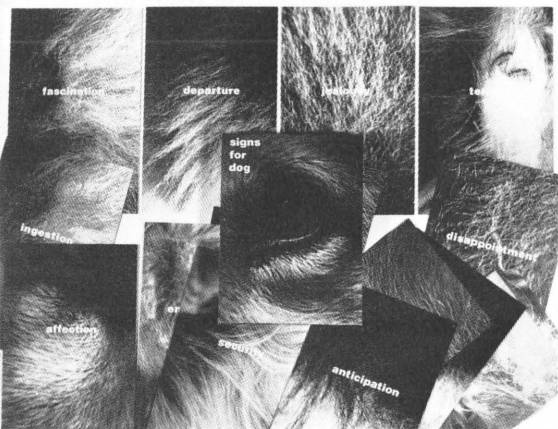
Index: a pointing sign which has direct, causal, or real relation to its object.

Symbol: a sign which does not depend on likeness, correspondence, or real connection with its object.

At first, we thought that all solutions would consist of symbolic or functional-iconic symbolic types, because they are so visible in our culture. We were surprised to find that at least one student submitted solutions with strong metaphorical qualities (not to mention the illuminating humor it brought to this downtrodden subject). We also believed that so-called universal signs could be only of a denotative nature but this series shows an entire range of connotative possibilities.

All solutions assume a fixed interpretant relation which is warranted by the pragmatic conditions of the problem of international traffic signs. The interpreter responds in only one way to a given sign; other interpretants stimulated by the sign-vehicle were considered only if they did not divert the desired behavioral response. In this respect, the cartoon-like solution is highly speculative. But since none of the solutions were tested with respect to their pragmatic qualities, this whimsical proposal is equally valid. In fact, this latter solution challenges, ironically enough, rather ingrained notions about international signs.





Continuing the exploration of sign/ language systems, another assignment asks for the graphic definition of a number of individual parts (signs) but differs from the universal sign problem in that it requires the sum total and interaction of these parts to form another mode of signification. The content is the representation of an "individual" (in this case a dog) through a series of signs in which characteristic actions, qualities, or objects are communicated. (Figure 5).

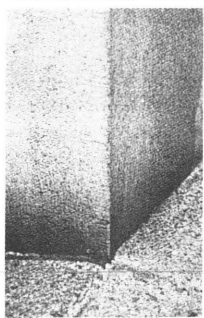
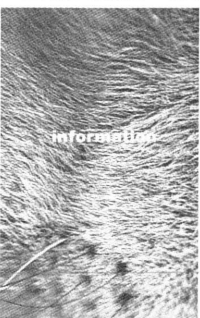
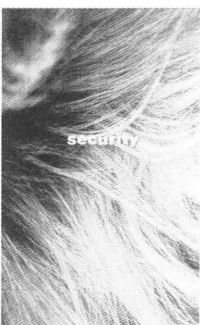
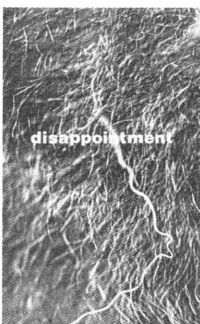


Figure 5

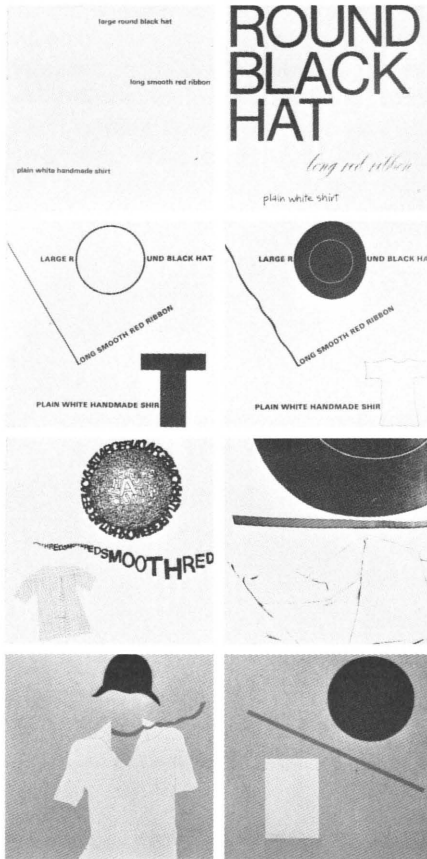


Figure 7

In this project, the students select a simple but expressive text. In a number of steps, they translate from an entirely symbolic-verbal representation, through various iconic-symbolic modes of representation, back to a wholly symbolic but nonverbal situation (Figure 7). In effect, the study explores the semiotic problem of structural correlation of different language systems.

This type of sign correlation is primarily between sign and object; denotative and connotative qualities mix freely. The main objectives are to find equivalencies of either symbolic or iconic nature, and to guide students into questioning the nature of representation. They begin to integrate aspects of sign typology with their intuitive/traditional searches for solutions. An extension of this process could be the description of the codes used in developing the various stages in the classification of the signs on the basis of some morphology as is shown in Figure 8.

word & image

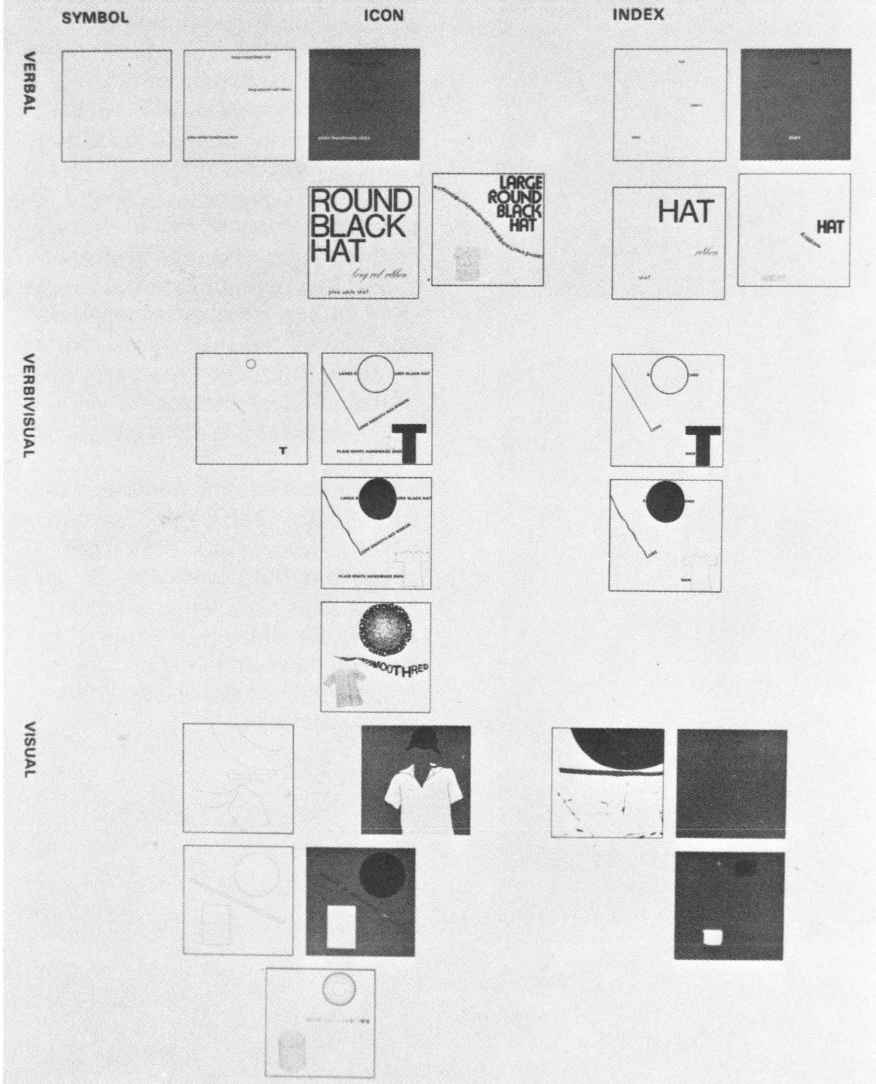
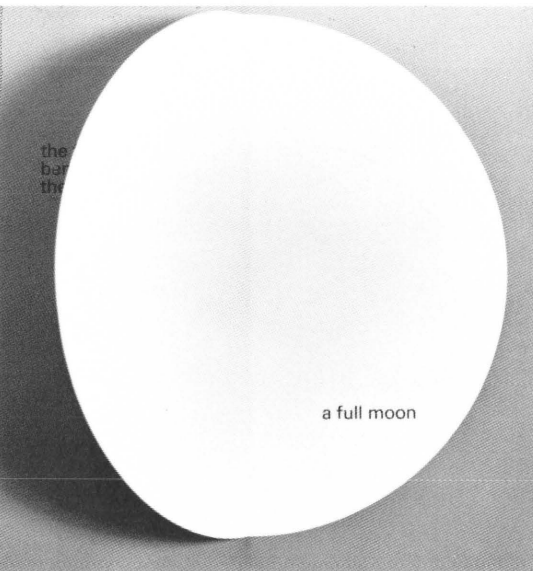


Figure 8

Transcription



Following the morphological investigation of word and image equations, the continuing phase of that project focuses on connotative possibilities. Transcription of a message (in this case a haiku poem, Figure 9) into an appropriate and more visually concrete language, without altering content is the goal. Development of a single sign in which the syntax of form, space-time structure as well as materials are all considered as essential devices (signs) for communication, and where the resulting atomization of words and images create an increased dependency on visual literacy. In other words, all components involved work holistically in a meaningful way.

The result is a rather complex sign which, in this particular case, can be called a "super-sign." This is *not* because of the sign's syntactic complexity but rather because of the various possible interpretant relations it allows and the opportunity for personal interaction and alternative response.

Figure 9

Independent Projects



In conclusion, we show a project by an advanced student, Hilda Stauss Owens. This study develops a visual stimulus system for beginning readers (Figure 10). By using the environment as a source book, it resolves the problem of discrimination between verbal and visuo-kinesthetic learners.

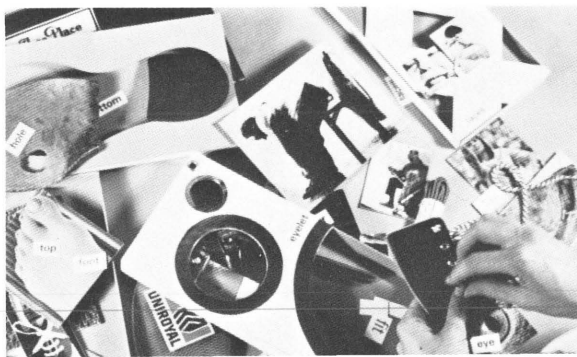
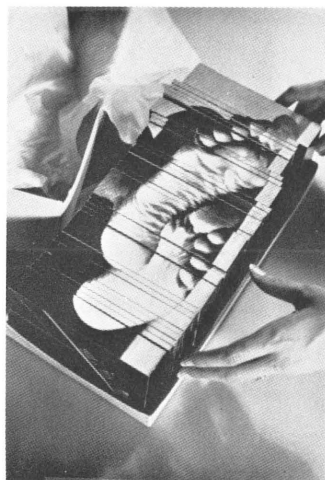


Figure 10



Figure 10



Conclusion

While these studies identify a structural basis from which to view the world of signs, and point a way to implement semiotics in a design education curriculum we realize the tentativeness of our solutions. Problems regarding the sign-interpretant relation and problems of sign-mode equivalency need more close study. Developing strategies for sign usage, with regard to the concept of multiple readings of texts, should be considered in depth, especially concerning functional texts. But at the very least, besides its didactic potential, systems of sign-classification, and methods of sign-production, semiotics provides us with an attitude toward human communication. We are forced to consider with renewed interest our everyday utterances, gestures, and scribbles.