

A RATIONAL APPROACH TO TECHNICAL SIGN CONSTRUCTION.

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A great deal of work is presently being conducted in the area of the construction of new signs. Much of this activity centers around the need for new technical signs, particularly with post-secondary level deaf students.

As part of an ongoing research project into a new method of teaching subject-matter courses to the deaf at the college level (Isaacs, 1972), the writer with the aid of an interpreter surveyed the signs available for use in the field of introductory psychology. These include both those commonly in standard use and those recently published technical signs constructed at Gallaudet and recommended for adoption at the college level (Kannapel, Hamilton, and Bornstein, 1969).

Upon examination, it became clear that there was a pressing need for an attempt to rationalize these signs. Many essential psychological concepts did not have signs and had to be manually spelled. Too often, those signs that did exist simply did not have any correspondence with the body of knowledge from which the psychological word or concept was drawn, and occasionally even contradicted the present theoretical understanding of the processes involved. It was, therefore, decided that new signs should be

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Requests for reprints of the article, the listing of the 50 concepts and signs developed, or samples of the photographs should be sent to Morton Isaacs, College of General Studies, Rochester Institute of Technology, Rochester, New York 14623.

constructed for many of these technical concepts in such a manner that, in *themselves*, the signs would serve as an aid in the learning and retention of the concept meaning.

The basic approach to the construction of these new signs may be seen from the priority level which was assigned to each of the following criteria: (1) The new sign must be reflective of other signs likely to be familiar to the deaf students, which when combined would *serve to communicate the connotative meaning of the word as presently utilized in the field of psychology*; (2) It must not duplicate any existing sign that is used for a different word; and (3) It must not be awkward to produce or understand.

In order to accomplish this, the instructor selected a set of 50 significant technical terms that were to be used throughout the course. These were given to a skilled NTID interpreter, along with definitions of these terms taken from the glossary of the textbook (Kagan and Havemann, 1968, pp. 617-642) utilized in the course. The interpreter then created new sign combinations and explained the *connotative* as well as denotative meanings involved. These proposals were critiqued and revised jointly by the instructor and interpreter until combinations were produced that satisfied the psychologist on the first criteria mentioned above, and the interpreter on the other two. They were then distributed to other interpreters, deaf students, and to the NTID staff for further comment.

Several revisions of the proposed signs were adopted based upon suggestions which arose from this interaction. A photographer then photographed the signs produced by a live model so as to generate a double-exposure (or occasionally a triple-exposure) print, where the entire sign can be seen on a single photograph. Arrows were superimposed to show the direction of hand movements. The photographs were then reproduced on 4" x 6" cards with the name of the word or concept on the same side as the photo, and the definition of the concept on the reverse side. The sign cards were placed into unit packs based on the order in which they were to be mentioned and discussed in class, and were distributed unit by unit to the students as the topic changed (Figures 1 and 2).

To illustrate the method and its outcome, let us discuss the development of several of the signs and describe them as finally used.

The concept of "generalization" is an essential one for any student of the behavioral sciences. As pictured in the technical sign manual produced at Gallaudet, it is signed G · G---> summary (Kannapel et. al, 1969, p. 91). Yet for psychologists, "generalization" has a much more technical meaning: it is the tendency of an organism to give the same response to stimuli that are similar though not exactly alike. It is believed to be the basis for concept formation: i.e., how a child learns to say "dog" as a verbal response to many animals that are similar in certain attributes though differing in others. Concept formation is thus a key in Stimulus-Response theory to understanding the way in which an organism learns.

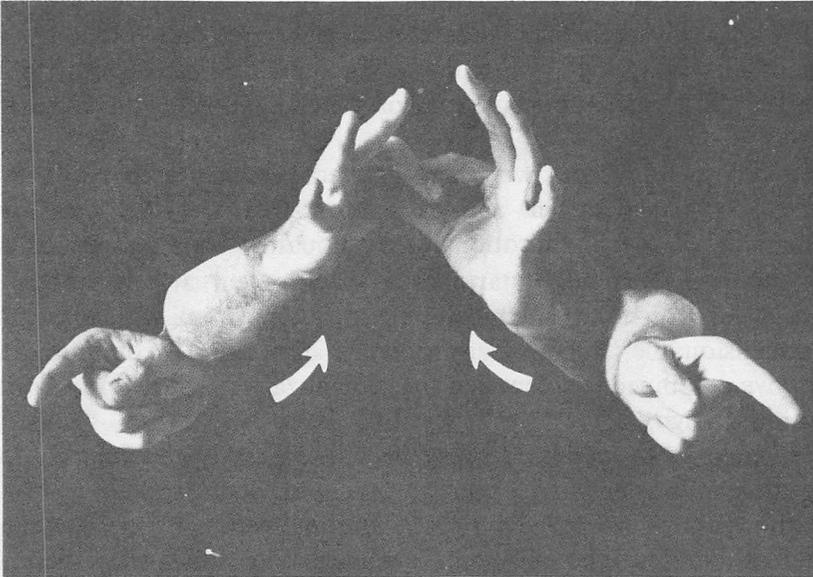


FIGURE 1

Generalization: The tendency of an organism to give the same response to stimuli that are similar though not exactly alike.

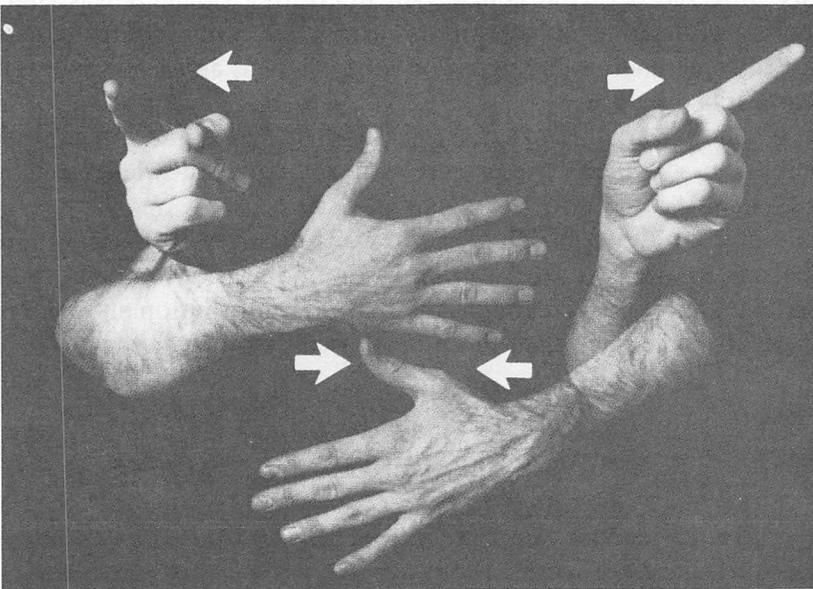


FIGURE 2

Anxiety: An emotion characterized by a vague fear or premonition that something bad is about to happen; a frequent result of conflicts among motives and a prominent factor in abnormal behavior.

The sign constructed for "generalization" incorporated this idea of the role of generalization in concept formation. It is composed of two "g" signs started with arms outspread and then brought together into the sign for joining or linking ($g \cdot g \rightarrow$ joining). The rendering of the sign itself thus implies the close affiliation and role of generalization in the formation of concepts.

Based on this sign, we then created another sign for the word "anxiety." The generation and function of anxiety is vital in the understanding of psychoneurotic and psychopathic reactions. Psychological theory holds that anxiety starts as a specific fear attached to a single stimulus event which is then transferred to other stimuli which resemble on some dimension the original fear-producing stimulus. To communicate this concept, we combined the new sign for generalization just described with the conventional sign for "fear." In this way, the word "anxiety" is communicated as "generalized fear," which is exactly the connotation the concept transmits as ordinarily used by psychologists.

Although no detailed analysis of the effectiveness of the new signs has yet been attempted, there is some evidence that shows they were found extremely useful by the students. At the end of the class sessions, reactions of the deaf students to these new signs were requested. The great majority of the students expressed the opinion that the signs helped to make the concept more easily grasped and retained. They felt that the visual image of the sign helped to reinforce the written word, and aided in understanding the new concepts introduced in the course. An interesting sidelight was that, in a mixed class of hearing students and deaf, the hearing students also gave evidence of remembering the signs and using them as an aid in understanding of the concepts discussed.

It would appear, then, that the method of creating new technical signs by combining a skilled interpreter with someone knowledgeable in the technical field to develop the technical signs based on the theoretical underpinnings of the concept offers a fruitful method of sign-generation. With the sign in and of itself carrying the connotative meaning of the word, the possibility exists of creating signs that are more rationally centered on the material to be learned than those composed by other methods.

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