THIS IS READING!

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To read and interpret a printed message involves the accurate decoding of visual symbols and understanding their basic meaning. This is a thinking process that has been defined as the *organization or reorganization* of (Kress, 1960) *experience to form new concepts, or to aid in the recall of previously learned ones*. This statement refutes Webster's definition of the related terms "think," "thinking," and "thought" as "mental concentration on ideas as distinguished from sense perceptions or emotions." It could be hypothesized that Webster wanted to emphasize the "mental" aspect of the thinking process, rather than sensory data, on which all thinking is based. However, in reality it is impossible to separate these two. His use of the word "ideas" would imply that he recognized this third component of the thinking process. Thus, there are three essential elements in the thinking process: 1) experience (sensory and emotional), 2) the neuro-psychological ability to structure this experience, and 3) concept formation. Since our topic deals with this process as the basis of communication, it is proper to add one more element, *language*. Without language, humans are unable to communicate very much of their thinking. Most of their thinking is done symbolically and involves the manipulation of verbal material. Although some thought may be of a non-verbal nature, schematically, the process of thinking and communicating can best be represented by use of the semantic triangle (see Figure 1).

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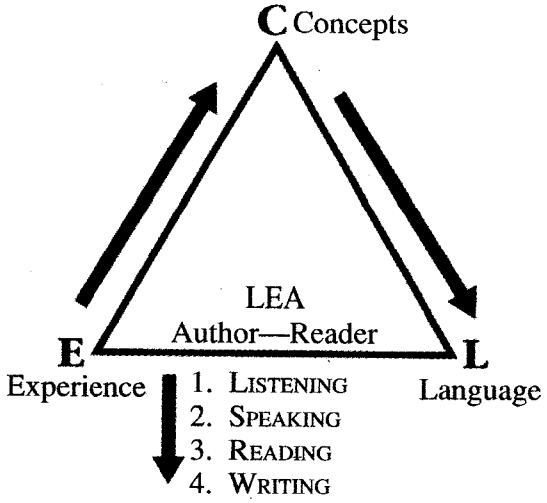
Figure I



The order of the development of language abilities is from experience to the formation of concepts and ideas, to the use of language labels to represent these ideas. Thinking involves the manipulation of concepts and ideas through the use of the language symbols. However, *both* are based upon the basic sensory experiences from which the concepts and ideas were abstracted. Thus, there is no meaning in the symbols per se, but only in the experiences upon which they are based, i.e. in the language-fact relationships involved.

Experience

Individuals' contact with their environment is maintained primarily through the functioning of their basic sensory system. Stimuli received through the various senses provide them with a basic reservoir of data about this environment. The sum total of these data at any given time in life represents an individual's life experience. It is this experience which provides the reservoir from which man and woman develop their understanding about their world. Through additional stimuli comes modification of the basic body of data and a change in the understandings. Thus the dimensions of breadth and depth are added to basic concepts by increasing the size of the reader's reservoir of experience.

Two essential factors concerning the uniqueness of each individual, and each sensory experience, are important here in understanding personal perception and concept formation. Firstly, since no two individuals are precisely alike, the manner in which two or more persons receive exactly the same sensory stimuli will differ, even if ever so slightly, among the members of a highly homogeneous population. Thus, what is added to the existing reservoir will be different for each person. Add to this, the knowledge that no two individual's previous knowledge and experience will be the same. The resultant differences are further extended. Secondly, no two sensory experiences can be precisely the

same. Thus similar sensory data received, by different individuals, cannot result in the same additive to the basic experience reservoir of each.

Organization of Stimuli

Exposure to one's environment is not in itself the sole ingredient needed to bring about the development of understandings. The stimuli received by the individual must be transformed from a mass of disorganized sensory experiences into patterns of meaningful perceptual memories for storage in the central nervous system. The organization of stimuli through identification of basic similarities and differences appears to be the most important aspect of concept formation. The ability of the individual to deal meaningfully with basic sensory data is dependent upon 1) the individual's innate neurological integration-intelligence, 2) the richness of the stimuli, 3) the individual's ability to attend to the stimuli at the time of reception-motivation, and 4) the richness of the individual's previous reservoir of similar experience.

In Figure 1, this ability to organize sensory data is represented by the side E-C of the triangle. The reservoir of past experience, plus the additive to it in the form of the current stimuli, is expressed by the angle E. The individual's ability to attend to the stimuli, to abstract essential similarities and differences in terms of his past experience, and to move in the direction of attaching meaning to these stimuli, is further represented by the arrow pointing toward the top of the triangle.

Concept Formation

According to the literature contributed by the majority of the investigators in the area of concept formation, this process is primarily concerned with the following: 1) the perception of stimuli through sensory receptors, 2) the differentiation and discrimination of these percepts, 3) the formulation of a tentative hypothesis based upon this differentiation and upon the process of abstracting, 4) the setting up of some type of classification or categorization of the elements abstracted, and 5) the testing of this hypothesis against the further occurrence of similar stimuli. The entire process demands the utilization of previous experience, and reorganization in terms of the present situation or context.

In discussing the characteristics of ideas in the conscious state, Rappaport (1946) refers to the facet of *identifiability* as its "similarity to, dissimilarity from, or belonging with other ideas." For an idea to be identifiable it is not sufficient that it should have some meaningful connection to an idea which before has been in consciousness, but that this connection should also be clear. This facet of *identifiability* is usually referred to as concept formation.

Returning to Figure 1, the facet of identifiability or the ultimate attachment of meaning to stimuli is represented by the angle C. The process of concept formation is all that has preceded this encompassed in our discussion of *experience* and the *organization of stimuli* (E-C).

Rappaport (1946) further speaks of *content* and *realm* in describing the characteristics of concepts. The content of a concept is the sum totals of all the characteristics, which are common to all of the objects, ideas, or events. The realm includes all of the objects, ideas or events, which can be included in the concept by virtue of having its content in common. Thus, the realm of the concept "chair" is all the chairs, which exist or can be thought of, regardless of their color, shape, size, etc. The content of the concept "chair" is that elusive common characteristic of all chairs, which might be called "chairness." However, "chairness" exists nowhere; it is merely a verbal label, which implies a content characteristic of all chairs. Although the use of the word chair implies these content characteristics, individual differences in background experience and conceptual organization are concealed.

Symbolization

Both Vinacke (1952) and Rappaport (1946) conclude in their discussion of concept formation that the process results in a symbolic response (not necessarily linguistic) by the organism. This symbolization, whether of the verbal character, which we call language or of a non-verbal nature as described by Ruesch and Kees (1956), facilitates the manipulation of concepts by the individual. This manipulation may be intrinsic (inner thought) or extrinsic, for purposes of communication with others. In either case, the culminating act in concept formation is the association of the concept with some symbolic representation of the concept. Thinking is facilitated when concepts can be manipulated rapidly and efficiently via this symbolic medium.

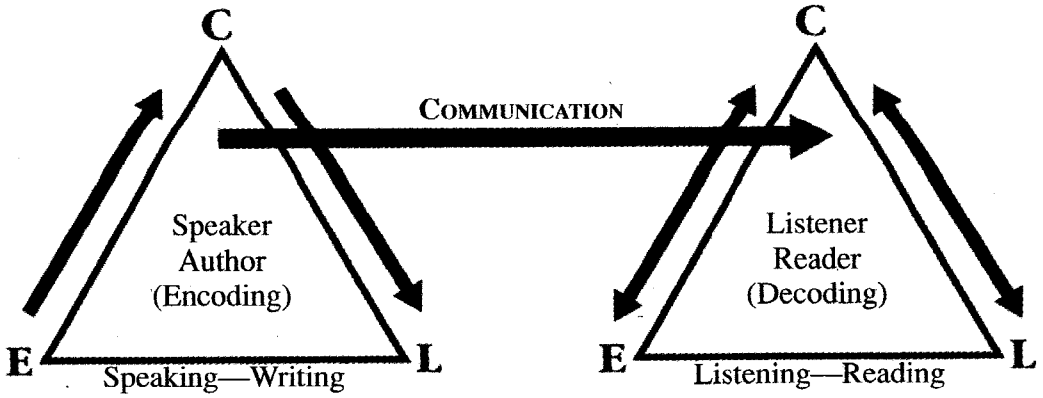
Returning to Figure 1, this association of a concept with a symbol is represented by the angle L. In the orthogenetic sense, it follows the direction of the second arrow from C to L. Closure is effected in the triangle by the base line E-L. E-L represents the language-fact relationships, which exist between the symbol and the basic sensory data from which it is derived. However, in reality, the pathway is always E to C or C to L, never directly L to E. Thus, concepts are the raw materials for thought, not symbols, nor the basic sensory experiences. It is the basic organization of the sensory data, which culminates in the formation of concepts. The symbolic resultant merely provides the medium by which these concepts can be manipulated more efficiently by the individual. In fact, according to the semanticists, it is this ability to symbolize, highly developed in humans, which differentiates them from all other animal life. Refined to its highest degree (orthography) it has made individuals "time-binders" capable of communication with other members of their species, both past and future. All other animal life found capable of communication can do so only in the present.

Communication—Comprehension

An individual's ability to communicate develops as soon as exposure to life occurs. This is when conceptualization and symbolization begin to take place. The speed with which this occurs, and further matures, is primarily dependent upon an intact sensory system. Humans are able to generalize from repeated sensory contact with their world. Understanding of the symbolic manipulation of concepts matures first as a listening skill in which communication is purely a one-way street, speaker to listener. Later, as the listener's language abilities develop further, a second lane is laid down and the process can go both ways—speaking and listening. However, the exactness with which one individual understands another is always dependent upon the degree of similarity found in their reservoir of life experience, in the content of their concepts, and in their agreement upon the symbols used to represent these concepts. They must be in agreement about the language-fact relationships involved in the realm and content of the concepts employed in their attempt to communicate.

In Figure 2, the semantic triangles illustrate the problems of communication. The listener understands the speaker when there is a relative degree of similarity in the following: 1) their experience background, 2) their ability to organize this experience and form concepts 3) their agreement about the realm and content of the concepts employed, and 4) their use of the same language labels to stand for these concepts. Of course the entire process is also influenced by either participant's ability to attend to and concentrate upon this experience of speaking or listening. In face-to-face conversation, speakers may be able to modify their communication and enhance understanding as a result of

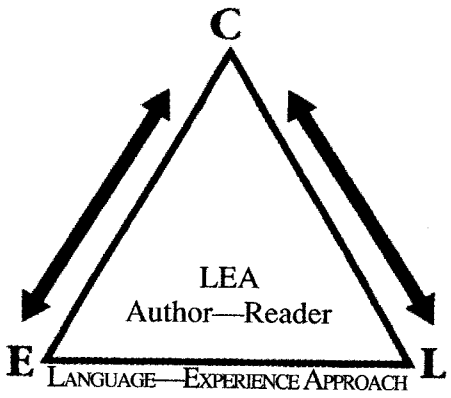
Figure 2.



non-verbal communication in the reverse direction, i.e. posture, facial expression, gesture, and attitude. In radio, television, recordings and the like, such modifications are not likely since the speaker cannot see his listener. Similarly, communication through the medium of systems of writing, orthography, may be represented using the same schema by substituting for "Speaker" *Author*,

and for "Listener" *Reader*, in the triangles. However, as in recordings and films, time may become an important barrier to the similarity of experience, concepts and symbolization, i.e. *The Old Testament* or the *Rosetta Stone*.

Figure 3



The process of reading may be defined as *thinking stimulated by written symbols*. However, the ability to think when stimulated, involves the same processes indicated in the foregoing discussion: experience, organization, concept formation, and symbolization. For elementary school children, the refinement of thinking abilities in reading situations is preceded by mastery of the same basic skills when listening to language and when using it orally.

Language Experience Approach

The preceding discussion should clearly indicate the advantage of the Language Experience Approach, especially in beginning reading (Stauffer, 1980).

In this approach the child is both the author and the reader, eliminating the usual barriers to communication. The dictated story for reading comes from the child's experience, concepts, and language. The only barrier possible is the time frame, usually, at most, no more than twenty-four hours.

Summary

The comprehension basis of thought and communication could be said to lie in the richness of the life experience of the individual, in the ability to differentiate and categorize this experience to form concepts, and in the skills using commonly understood symbols for the purpose of manipulating these concepts. Agreement among men and women about the realm and content of their concepts will enhance their ability to communicate more precisely with each other and understand, even when they do not agree.

The major role of the educator seems to lie in the acceptance of the responsibility for bringing each individual up to the full realization of their potential, and for being able to communicate with their world. That world is made up of more than those who live around the individual. It encompasses all who ever lived and recorded a message for anyone of any age to interpret and understand. Experience-concepts-language: this is the eternal triangle that differentiates humans from all other forms of life.

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