GESTALT MNEMONICS

MAX SHEROVER *

GESTALT MNEMONICS is a name given to a *method* of memory training which emphasizes the importance of perceiving "wholes" rather than "parts" in any task of memorization. The principles of gestalt mnemonics can be best understood in the light of what is scientifically inferred about the nature of memory.

The possible ways in which the ten billion odd cells of the human brain can be interconnected are so many that the mind cannot conceive any meaningful image of their number. This number might be greater than the total number of electrons in the universe. Were we to remember every sensation, its time of occurrence, and the accompanying associations, the ten billion cells would never suffice to integrate and coordinate the sensations and events that crowd upon our awareness every wakeful second of our lives. Also during sleep, when we are only partly or intermittently conscious, we still receive impressions which fit together into the crazy-quilt of our escapist dreams and nightmares.

One may well wonder how our brain, with its practically infinite capacity for receiving impressions and signals from within the body, is able to make sense of them. It would seem that the organism must have the capacity to shut out this constant inrush of stimuli. It must possess a defense mechanism against the overwhelming flood of impressions; it must have the capacity of selective screening of what to remember and what to discard or forget.

Forgetting, therefore, is as necessary as remembering. Forgetting protects us from becoming over-charged with data to the extent of complete mental anarchy.

There is reason to believe that forgetting is not confined to a passive state of indifference to stimuli but occurs also as a wilful activity. As a metaphorical model of the forgetting mechanism, we might take a photo-electric cell such as is used to open and close doors. We may conceive of such a mechanism guarding the door of our memory. The door swings open; the neural path is cleared for the sensation to have passage into the brain. Of the billions of sensations which stream in upon our receptors while life persists, a great many are shut out as having no retention value for the individual. And so, with screening out, with selective acceptance, with association affinities, experience is accumulated which makes the sum total of the individual's personality.

Ordinarily, an "experience" may be schematized as consisting of a chain with four links:

1. Impact of stimulus upon a sensory receptor.

* Mr. Sherover, long an active member of the New York Society for General Semantics, is president of Linguaphone Institute.

2. The path of the stimulus along afferent nerve fibers as an electrochemical propulsion toward its destination in the brain.

3. The association with and integration of several such stimuli either concomitant with or preceding the stimulus in question.

4. The reaction or response (attitudinal, kinetic, or symbolic) to the received stimulus.

Whether this experience pattern is to become a memory pattern depends on the following considerations:

a. Degree of attention at the time of becoming aware of the particular stimulus.

b. Significance in the *conscious or unconscious* life situation at the time of the occurrence of the event.

c. Degree of dominance of one set of impulses over others simultaneously received (for example, when we hear two statements simultaneously, we ordinarily remember only one).

d. The interference of memories of past experiences with the one in question.

It is important to stress the fact that no word is ever spoken by any one or heard by any one in a "nowhere" situation. Everything occurs in an environment. Therefore the recall of a thing or an event implicitly recalls some parts of the associated environment. Thus the *association* of ideas and/or events is an indispensable feature of remembering. We recall a speech that impressed us; we recall the occasion, the hall, and our companions at the time the speech was delivered. We see an accident. We recall details which went unnoticed by others. Others recall details which we did not notice. That is why frequently the testimonies of a group of witnesses to the same event will differ radically even though each tries to tell the truth.

Memory, then, as well as its obverse, forgetting, is essentially a selective (abstractive) process. What will be remembered in a situation depends on what will be selected (abstracted), and this in turn depends on complex combinations of circumstances and, most important, on the personality characteristics of the individual.

MEMORY operates on many different levels. There is something we could call neuro-muscular-organ memory. Each combination of nerve fibers, muscles, and glands must act in a certain way under similar conditions. There is also a sensory memory. Similar sensations bring about similar associations. On a more complex level, there is memory of whole situations, which may be responsible for "intuitive" responses; also for "instinctive" behavior. Our "instincts" may be regarded as our racial or hereditary memory. Finally, as

human beings, we are the carriers of a "cultural memory," that is, folklore, mythology, religious concepts, social manners, and science. These "memories" are recorded primarily not in our nervous systems but are preserved and kept functioning through extra-corporeal devices: the spoken and written word; and in non-verbal, symbolic representations: pictures, sculptures, aqueducts, pyramids, buildings, etc.

Thus there appears to be an intimate connection between memory and learning. It is difficult to say what we "remember" and what we have learned, that is, incorporated into our repertoire of habits. We have learned (or remember) how to sip and swallow, how to breathe and direct the movements of our limbs. We remember (or have learned) stereoscopic sight, the discrimination of sounds and their reproduction, the associations of events and objects with their symbolic representations in sign, gesture, and symbol.

This essential connection between memory and habit formation has been utilized in the development of memory-improving methods. Dr. Bruno Furst, author of several books on memory and teacher of mnemonics (the art of improving the efficiency of the memory) aims at making his students aware of the principle of association as a technique for cultivating a good memory. He also emphasizes the selective process in memory formation by advising his students to concentrate on what one *desires* to remember.

If memorization and learning are closely related, it seems fairly evident that memorization to a large degree becomes possible through the repeated reaction to a similar stimulus. Such is the genesis and mechanism of a habit. Similarly forgetting becomes associated with the *un-learning* of a habit. It is important to note that both memorization (learning) and forgetting (unlearning) can be regarded as positive acts. For example in "stopping" smoking, one does not simply abandon the smoking habit. Rather one exchanges the habit of smoking for that of non-smoking. The stimuli which had previously led to the smoking response (advertising, the sight of others smoking, nicotine craving, etc.) now lead to a different set of responses which do not include the act of smoking.

SIMILAR mechanisms seem to be involved in acquiring a particular set of habits which we call speech. For the first several months of its life the baby hears sounds which it gradually begins to distinguish, first by general tone, then by manner. Without understanding what is said, a child can be drawn or repelled by speech sounds which acquire for him pleasant or unpleasant connotations. Contrast, for example, a small child's reaction to the affectionate sound of his mother's voice with his reaction to the barking of a strange dog or to the loud voice of a stranger.

Gradually, the child learns to distinguish components of sound and to group them into meaningful symbols. The sound of the word "milk" at first becomes associated with the complex including the milk bottle, the rubber nipple, saliva-

tion, the anticipatory lip and tongue movements, and mother's actions. It is only in the process of later development that the child begins to distinguish the separate elements and identifies these by separate names.

Another characteristic phenomenon of early speech habit formation is the substitution of articulated sounds for random ones. The early babbling of babies consists of sounds made practically at random. Babies of all countries speak a universal language. Sometimes random sounds are fixated on specific objects. Thus a small child may call his teddy bear "dolly-bear" or "bla-bla" or anything else. The "right" name is a result of a canalization of sound production into acceptable paths, i.e., those which correspond with the sounds of the language spoken around the child. This canalization involves not only learning or memorization but also unlearning or forgetting. Certainly the child is strongly motivated to learn the "right" sounds and unlearn the "wrong ones." This motivation insures the efficient operation of the selecting devices (the "guards at the doors of memory"), and through the selection of proper patterns insures the formation of proper memory patterns. The constant repetition of these patterns becomes the "speech habit," which is the foundation of our speaking skill.

HENCE, the repeated exposure to the sounds of a language which we are motivated to learn seems to set in motion the selective mechanisms of our nervous system in such a way that the correct speech habits will be retained and incorrect ones eliminated. The method underlying this approach to language pedagogy is what we have labeled "gestalt mnemonics." The method emphasizes the learning of the *entire* speech habit (as the child does in the early years of his life) rather than the analysis of the material to be learned into component parts bearing a "logical relation" to each other. The latter method, although indispensable in teaching disciplines with strict and lucid logical structures (such as mathematics) has been notoriously ineffective in the teaching of languages. It is hoped that the recognition of the principles of gestalt mnemonics will be found increasingly useful in the teaching of disciplines which do *not* possess an unambiguous logical structure. Of these, languages are outstanding examples.

True words are not fine-sounding;
Fine-sounding words are not true.
A good man does not argue.
The wise one does not know many things;
He who knows many things is not wise.

LAO-TSE, *The Book of Tao* (trans. Lin Yutang)