Chapter 10

THE DEVELOPMENT OF MNEMONIC AND
MNEMOTECHNICAL FUNCTIONS

In the area of memory, psychology has long ago learned to distinguish between two basic lines—the natural and the cultural—which we have tried to trace over the whole course of our research.

Very long ago, psychology began to consider memory as an organic function and came very early to formulating physiological bases for this function. As E. Meumann correctly points out, in traditional psychology, memory was studied mostly and specifically as a physiological function and psychologists began very early to relate to memory the more general properties of organic material.

As E. Hering claimed, memory represents a basic property of all organized matter. Actually, the plasticity of our nerve substance is expressed in its capacity to change under the influence of external actions and to preserve a predisposition toward their repetition. This was the basis for the graphic comparison between memorizing and establishing nerve pathways by a process similar to wheels making a rut in a road or to a crease formed in a sheet of paper when it is folded.

A. Semon introduced the special term “mnema” to indicate the organic bases of memory, but as frequently happens in comparing psychological and physiological concepts, he himself began to consider this concept as a certain mental function, that is, an ideational function. It seems to us, however, that the word “mnema” can best be used to indicate the totality of organic functions of memory that are manifested depending on certain properties of the brain and nervous tissue. In this sense, many psychologists now speak of mnema or the mnemonic functions, isolating natural or innate memory in this way.

At the same time, psychology recognizes what has for a long time been called technical memory or mnemotechnique, which is understood as the art of mastering the processes of remembering and controlling them through special technical means. Initially, mnemotechnique developed as a practical art that had the most various tasks and applications. But theoretical study of mnemotechnique was hap-hazard and most psychologists could not distinguish in mnemotechnique the real and true principle that is the basis of all cultural development of memory from the random and distorted form in which this principle appeared at the hands of learned scholastics and professional magicians. For this reason, we would like to propose that under the designation mnemotechnique, we understand all those devices for remembering that include the use of known external technical means and are directed toward the mastery of one’s own memory.

Thus, we will subsequently use these two terms, mnema and mnemotechnique, long applied in psychology with a somewhat different meaning, to designate natural
or organic functions of memory, on the one hand, and cultural devices for remembering, on the other.

The inadequate separation of mnemotechnique had a most unfortunate effect on the working out of the problem of memory, and the inadequately studied function of mnemotechnical remembering led many psychologists and philosophers to a completely false formulation of the problem of double memory. Thus, psychologists who did experimental studies of the processes of thinking concluded that there two kinds of memory: concept memory, on the one hand, and thinking memory on the other, and that the two kinds of memory are subject to different laws.

H. Bergson, in his well-known research on matter and memory, concluded that there are two memories: brain memory and mental memory and each of these has its own laws.

Finally, Freud also concluded that the activity of our memory may be explained only if we assume that it consists of two separate but interconnected constituent parts of the system.

We believe that only research carried out scientifically which separates mnema from mnemotechnique will succeed in turning this confused problem of the two kinds of memory right side up and will provide a scientific explanation for it.

We find this kind of stumbling block also in the genetic studies of memory where, regardless of much experimental work, the principal question remains unexplained: does memory develop at all significantly in childhood, does it stand still during all of childhood exhibiting insignificant fluctuations in one direction or another and, finally, as much data indicates, does it deteriorate, undergo involution and, in a certain sense, decline as the child grows and matures. It seems to us that this basic controversy can be resolved only if the two lines in the development of memory of which we have been speaking are isolated.

In our studies, we tried to compare directly the two types of memory, the two methods of remembering, and to elucidate by comparative analysis the elementary composition of both operations, their structures and genesis. In experiments, we asked a child to memorize a series of words (for the most part nouns, names of concrete objects). We used standard procedures such as are used in studies of memory in experimental psychology except that we tried to make it clear to the child that it would be impossible to remember the whole series in the given order. Then we introduced a new method of memorizing: we gave the child a number of cards from picture lotto or specially prepared cards either of separate pictures of the concrete objects or geometric figures, lines, dotted lines, etc. We added this auxiliary material in different series in various ways. Sometimes it was presented simply with the hint: “Perhaps these cards will help you remember?” but with no explanation as to how they would help. In other cases, we gave a short instruction (we explained to the child that he must try in some way to connect the words he was to memorize with corresponding cards) and we even gave a demonstration. The different methods were intended to show how the transition to a new method of memorizing occurs, to what extent it must be an independent device and to what extent imitation, what role understanding plays in this process, etc. We shall go into this later; now we will only say that the child did make a transition from natural, innate remembering to mediated or mnemotechnical remembering. The whole character of his operation changed instantly; every assigned word now elicited reference to a picture. The child established a connection between the word and the picture, then moved on to the next word, etc.

After we finished the whole series, the child, looking at the cards, reproduced all the words that he was asked to memorize and explained what connection he