

## MEMORY AND ITS DISORDERS IN CLINICAL PSYCHOLOGY

M. T. Rustambekova,

Senior Teacher; Department of General Psychology,  
Andijan State University

### ABSTRACT

Memory impairment is the most common clinical problem. A wide variety of disorders of mental activity can be masked under apparent disorders of the mnemonic function: attention disorders of the motivational, volitional, and emotional spheres. The main functions of human memory are purposeful memorization, preservation and arbitrary reproduction of information. Memorization is associated with the neurophysiological process of consolidation - fixing the code of information about an event or fact. From the point of view of modern memory physiology, information encoding proceeds as follows: perception - comparison with a sample in long-term memory - recognition/unrecognition - formation of temporary codes in short-term memory under the regulatory influence of selective attention - consolidation new Year's Eve in long-term memory.

**KEYWORDS:** memory, reproduction, information, data, mnemonic, structure, episodic, dysmnnesia, paramnesia, hypermnesias, hypomnesia, amnesia, pseudo-reminiscences.

### INTRODUCTION

Memory impairment is the most common clinical problem. A wide variety of disorders of mental activity can be masked under apparent disorders of the mnemonic function: violations of the attention of the motivational, volitional, emotional spheres. It happens that patients complain memory disorders, whereas experimental psychological research (EPI) does not confirm this. Conversely, there is data on mnemonic disorders in the EPI, but these violations do not manifest themselves in professional activity (for example, when work is associated with updating manual skills and work is carried out automatically, without the need to memorize the details of a specific situation - RAM is not involved, but only long-term memory is involved). All this confirms the importance of a functional approach to solving the problem of mnemonic disorders (violations of memory functions - memorization, preservation and reproduction) and analysis of this problem from the point of view of memory structure, dynamics of mnemonic processes and motivation. The main functions of human memory are purposeful memorization, preservation and arbitrary reproduction of information. Memorization is associated with the neurophysiological process of consolidation - fixing the code of information about an event or fact. From the point of view of modern memory physiology, information encoding proceeds as follows: perception - comparison with a sample in long-term memory - recognition/unrecognition - formation of temporary codes in short-term memory under the regulatory influence of selective attention - consolidation of a new code in long-term memory. At first, the brain retains some the number of perceptual traces selected by attention. These traces are compared with existing codes - engrams, i.e. memory traces formed as a result of life experience. If the event is "recognized", then the existing code is "updated" and new complex connections are established, resulting in a new short-term memory code. If the event

is "not recognized", then a complex code is also created from various components of the perceived information. New codes are held in short-term memory while they are included in the They perform a certain operation, and then either disappear or are included in encoded form in some system of cognitive connections ("consolidated"), passing from short-term memory to long-term memory. Thus, the interaction of short-term and long-term memory during memorization is not linear, but intermittent, when the interaction constantly affects different components of perceived information. The main functions of human memory are purposeful memorization, preservation and arbitrary reproduction of information. Memorization is associated with the neurophysiological process of consolidation - fixing the code of information about an event or fact. From the point of view of modern memory physiology, information encoding proceeds as follows: perception - comparison with a sample in long-term memory - recognition/unrecognition - formation of temporary codes in short-term memory under the regulatory influence of selective attention - consolidation of a new code in long-term memory. At first, a certain number of perceptual traces selected by attention are stored in the brain. These traces are compared with existing codes - engrams, i.e. memory traces formed as a result of life experience. If the event is "recognized", then the existing code is "updated" and new complex connections are established, resulting in a new short-term memory code. If the event is "not recognized", then a complex code is also created from various components of the perceived information. New codes are retained in short-term memory until they are included in a certain operation, and then either disappear or are included in encoded form in some system of cognitive connections ("consolidated"), passing from short-term memory to long-term memory. Thus, the interaction of short-term and long-term memory during memorization is not linear, but intermittent, when the interaction constantly affects different components of perceived information. Episodic memory is a form of memory in which information is stored with all the accompanying random "tags" about where, when and how this information was obtained. Normally, semantic information is memorized, whereas episodic information is lost as the event is temporarily distanced. In the case of memory disorders, the ratio of the processes of consolidation of semantic and episodic information changes: episodic dominates or "interferes" with the reproduction of basic information. In general, with memory disorders, we are talking about violations of the preservation, search and establishment of functional links between various codes of information about events and objects. Since memory is closely related to speech, thinking, perception, emotions and voluntary actions, its disorders can be so characteristic that they can serve as an important diagnostic criterion in the recognition of some acute and chronic mental illnesses. Specific memory disorders may indicate the presence of a procedural mental illness, various variants of dementia (dementia).

Clinical types of memory disorders:

1. Dysmnesia
2. Paramnesia
3. Hypermnesias
4. Hypomnesia
5. Amnesia
6. Pseudo-reminiscences

7. Cryptomnesia
8. Ehomnesia
9. Confabulations

1. **Dysmnesia** is a formal disorder of dynamic memory processes.

2. **Paramnesias** are called pathological products of mnestic processes. Memory disorders (especially formal ones) are not always a sign of mental illness. They can also occur in mentally healthy people under special conditions (in a state of overwork, affect, asthenia caused by somatic illness, etc.). But very often memory disorders are included in the structure of a mental defect in various mental diseases and anomalies.

3. **Hypermnesia** is an involuntary revival of memory, which manifests itself in an increase in the ability to reproduce long-standing, insignificant, little-relevant events of the past. At the same time, the memorization of current information weakens and the ability to reproduce long-forgotten events of the past increases, insignificant and of little relevance to the patient in the present. At the same time, arbitrary memorization and reproduction are particularly affected. In hypermnesia, there is an increase in mechanical memory with a significant deterioration in the indicators of logical and semantic memory. This memory disorder can occur in special states of consciousness, in hypnotic sleep, when taking alcohol and some drugs, as well as in various mental illnesses (in some cases schizophrenia, psychopathy, manic and hypomanic states, etc.).

4. **Hypomnesia is a partial loss of information from memory.**

The ability to remember, retain and reproduce individual events or their details is impaired ("faulty memory", when the patient does not remember everything that he should have remembered, only the most important, vivid or frequently repeated). Dates, names, terms, and numbers are poorly reproduced. Hypomnesia is the most common clinical memory disorder. Hypomnesia can be temporary, episodic, but it can also have a persistent, irreversible character. Such memory disorders may relate to one or more modalities (visual, auditory, etc.). Hypomnesia is part of the structure of many psychopathological syndromes (neurotic, psychorganic, etc., and is also a symptom of congenital or acquired dementia).

5. **Amnesia** is a complete loss of memory of events that take place during a certain period. Amnesia is the main object of clinical psychology and can be classified on various grounds. Amnesia is distinguished in relation to events occurring at different times from the onset of the disorder, according to the impaired memory functions and the dynamics of the manifestation of a memory disorder. In relation to events occurring at different times from the onset of the disorder, the following types of amnesia are distinguished:

- retrograde - loss of memory of events before the onset (acute period) of the disease (disorder); retrograde amnesia may occur, for example, after a traumatic brain injury;
- congrade - loss of memories of events during the acute period of the disease (disorder);



➤ anterograde - loss of memories of events occurring after the acute period of the disease (disorder); anterograde amnesia can be observed after damage to the hippocampus or chronic poisoning, as well as in dementia.

➤ anterograde is the loss of events that occurred before, during and after the acute period of the disease (disorder); most likely, it occurs as a result of a temporary lack of blood circulation in the hippocampus.

According to the impaired memory function, the following types of amnesia are distinguished:

➤ fixation - on current and recent events;

➤ Anecphoria - inability to reproduce information without prompting;

➤ progressive - first there are difficulties in remembering, then there is forgetfulness of current and recent events, then more and more distant events are forgotten. First, the memory of the time of distant events suffers, and then the memory of the content of events suffers.

First

less organized knowledge (scientific, languages). Then - repeatedly

the events that happened. Then the facts are forgotten with the preservation of affective memory. Then comes the disintegration of praxic memory - the memory of skills, and apraxia sets in.

According to the dynamics of the manifestation of memory disorder, the following amnesia are distinguished:

➤ retarded - forgetting occurs some time after the EPI; remembers well for a while, but after a short time - can no longer reproduce (for example, a short story).

➤ stationary - persistent memory impairment with no visible changes (improvements or deterioration) over time;

➤ labile (intermittent) - disturbances fluctuate over time - they arise, then disappear;

➤ Regressive - amnesia with partial memory recovery.

Violations of the dynamics of mnesic processes serve not so much as an indicator of memory impairment in a narrow sense, but rather as a sign of mental exhaustion, unstable performance (which is determined by attitude to the environment and to oneself, personal position in a situation, the ability to regulate

behavior, purposefulness of efforts). The disturbed dynamics is successfully corrected by the patients themselves through additional means of mediation.

Violations of dynamics can also be associated with violations of the affective sphere of personality. Amnesia can be caused either by the loss of stored information when transferring it from short-term memory to long-term memory, or by errors in the process of searching for situationally necessary information (functionally due to inhibitions of communication between codes). The first type of memory impairment (loss of information) is called "type A memory impairment"

(degenerative amnesia). It is caused by an accident, physical injury, intoxication, brain diseases and vascular changes in the brain. Degenerative processes destroy the very material basis of the mnesic function of the psyche. The main sign of a type A disorder is the loss of information. Type A amnesia is called "true amnesia". True amnesia in the clinical sense includes the following signs of memory impairment:

a) a preserved level of intelligence;

- b) short-term memory is not affected;
- c) the anterograde aspect of memory prevails.

Today, it is believed that with true amnesia, the encoding of episodic (contextual or autobiographical) information accompanying information about the meaning of the event is most often disrupted. Semantic memory largely determines our knowledge of something, whereas episodic memory characterizes precisely the memory of the personal circumstances of this knowledge (as it relates specifically to us). This circumstance can explain the paradox in which a person with true amnesia can successfully complete the test tasks. and remember the current abstract information, but cannot remember events from his life. The second type of memory impairment (search errors) is called "type B memory impairment" (dissociative amnesia). With this type of amnesia, information is contained in the form of a neural code, however, it cannot be updated. Type B amnesia includes neurotic forgetting (dissociation), posthypnotic forgetting, the phenomenon of "already seen (experienced)", as well as the phenomenon of "double consciousness". Since there is no actual loss of information from memory in type B amnesia, they are often called paramnesias. Since dissociative memory loss is caused by the "blocking" of communication between different contents of memory, therefore, the recollection of such a connection that took place in reality is no longer possible. In this sense, such a type of psychological protection as repression can also be considered as a type of type B memory disorder. Since continuity and integrity of perception is a necessary quality of consciousness, violations of connections between memorized information are compensated by the formation of new connections that preserve for the individual the subjective continuity of the passage of time and the sequence of events, as well as their meaningfulness and inclusion in personal history (autobiography). Type A memory changes ("true amnesia") occur in neurological disorders, whereas type B memory disorders (paramnesia) occur within the framework of mental disorders. The most typical psychopathological disorders of the content side of memory (pathological production of memory) are paramnesia - memory deceptions. There are several types of paramnesias.

**6. Pseudo-reminiscences** - erroneous memories, illusions of memory. Actual events are recalled in a different time interval (more often a transfer from the past to the present - memory lapses resulting from fixation or progressive amnesia are replaced). One of the options is living in the past, when past life events begin to be perceived as real, false recognitions of people with behavior adequate to these recognitions begin to occur. Sometimes this option is accompanied by a symptom of not recognizing oneself in the mirror.

**7. Cryptomnesia** - memory distortions in which alienation or appropriation of memories occurs. For example, what you see in a movie or read in a book is perceived as an experience. Or vice versa - personal events are perceived as someone else's.

**8. Echomnesia** - memory deceptions in which a new event is perceived as similar to one that has already taken place. Another name for this type of paramnesia is the phenomenon of "already seen (fr. - *deja vu*), "already heard (fr. - *deja entendu*) or "already thought out" (fr. - *deja pense*). With such a disorder, the current perception of the event is simultaneously

projected into the present and into the past. The phenomenon of "alreadyseen" is characterized by a person's conviction that he has already experienced a similar event at some point, but cannot indicate where and when it occurred. In *deja vu*, an event is perceived as completely identical to an event from the past. In addition to the phenomenon of *déjà vu*, Peak paramnesia is also referred to as *echomnesia* - this is a kind of "already experienced" memory, when a person only notes some similarity of the situation, but realizes that it is not identical to a past event.

**9. Confabulations** - fictions of memory - false memories with the conviction of their truth. Substitute confabulations - fill gaps in memory, have ordinary content, professional and everyday, unstable in time, labile in the plot, as the conversation progresses, the plot acquires new details - "memories". Fantastic confabulations are false memories of incredible events in the past, the content is stable, has signs of delirium of greatness, erotic components. Paralytic confabulations are false memories of ridiculous content (thrice Marshal). Although paramnesia, as a rule, occurs in severe disorders of brain activity, in psychoses, disorders of consciousness, sometimes memory deceptions (*cryptomnesia*) can also occur in mentally healthy people with significant fatigue, in a state of somatically conditioned asthenia. Among the laws of the formation of mnesic disorders, Ribot's law is considered the most famous in psychopathology, according to which memory disorders (loss) occur in a certain chronological order - at the beginning the memory of the most difficult and recent impressions is lost, then the old ones. Memory recovery takes place in reverse order.

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