

NADEJDA PETROVA MADJIROVA

PSYCHOPATHOLOGY

psychophysiological and clinical aspects

PLOVDIV
2005

*I devote this book to all my patients
that shared with me their intimate problems.*

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PSYCHOPATHOLOGY:
PSYCHOPHYSIOLOGICAL AND CLINICAL ASPECTS
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*“A wise man ought to realize
that health is his most valuable possession”
Hippocrates*

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I. COMMON ASPECTS IN PSYCHOPHYSIOLOGY

Psychophysiology is physiology in relation to the mind and its processes. Psychophysiology is characterized with the influence of neural and physiological factors on psychological process. It is difficult to make a distinction between psychophysiology and some disciplines as psychobiology, neuropsychology and cognitive neurosciences. All of them treated the connection between psychology and physiology.

DEFINITION: Psychophysiology is a branch of psychology, which is concerned with the physiological bases of psychological processes.

According to G. Berntson and J. Cacioppo psychophysiology is an interdisciplinary science that seeks to elucidate the relations between the mind and the body.

Psychophysiology (from Greek ψυχή, psūkhē, “breath, life, soul”; φύσις, physis, “nature, origin”; and -λογία, -logia) is the branch of psychology that is concerned with the physiological bases of psychological processes.

History in Psychophysiology – even its roots are very ancient, it is established as an independent discipline since 1960, and it is connected with the formation of the Society of Psychophysiology in the same year and the appearance of the 1st journal of Psychophysiology 4 years later (Cacioppo et al., 2000b; Sternbach, 1966).

History in Psychophysiology

Even its roots are very ancient since 1960 it was established as an independent discipline. It was connected with formation of the Society of Psychophysiology in the same year. Four years later appeared the First Journal of Psychophysiology (Cacioppo et al., 2000; Sternbach, 1966).

HISTORY

Psychophysiology is an interdisciplinary science that seeks the relations between the mind and the body.

Historically psycho-physiologists have been interested in the impact of psychological states and processes on physiological (especially autonomic) functions and have often focused on psychosomatic or psycho-physiological disorders.

Currently many psychologists are equally interested in the impact of neural and physiological processes.

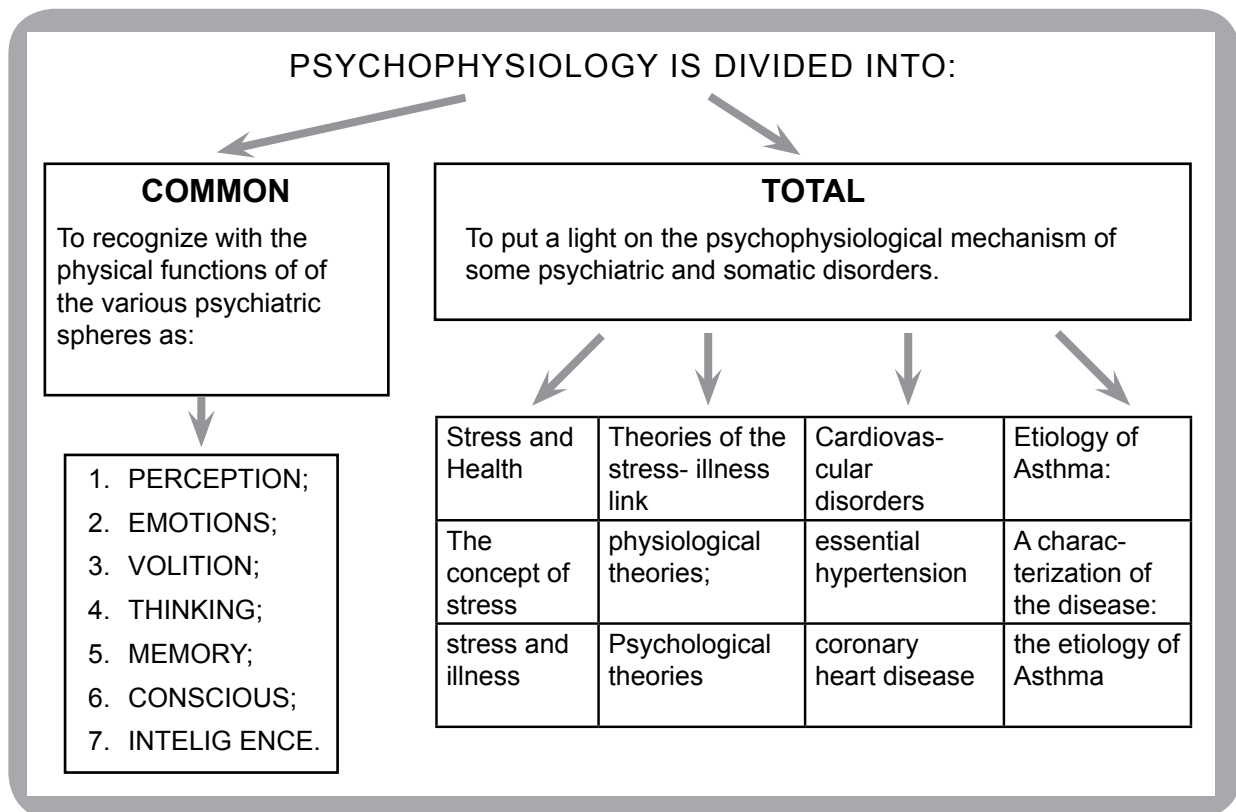
In fact it is difficult to draw clear distinctions between psychophysiology and disciplines such as psychology, behavioral neuroscience, cognitive neuroscience and neuropsychology.

Society of Psychophysiological Research (SPR) was founded in 1960. It is an international scientific society with worldwide membership. The main purpose of the Society is to encourage the research on the interrelationship between physiological and psychological aspects of behavior. The aim is to promote these ideas in the Journal Psychophysiology and to organize annual meetings for presentation and discussion of the most original theories, hypothesis, **instrumentation, methodology, and new directions and standards in the field.**

Psychophysiology is a branch from psychology.

The main branches in psychology are: medical psychology, clinical psychology, social psychology; maturity psychology; child psychology; gerontology-psychology; somatic psychology; psychosomatic psychology; psychophysiology (common and special).

Psychophysiology is related to medical discipline known as psychosomatics. Now psychophysiology becomes quite specialized, and has branched into subspecializations as: social psychology, cardiovascular psychophysiology, cognitive psychophysiology and cognitive neurosciences.



Psychophysiologicalist and physiological psychologist are very different.

Psychologists – are interested in why s. o. may have phobia from insects, butterflies or spiders.

Physiologists – are interested by the system of some brain structures, amygdala and s. o.

Psychophysiologicalists – study the physiological and physiological link in intact human subjects.

The purpose of the Psychophysiology is:

- to examine the various physiological processes of the various psychiatric processes in humanity in normal and pathology;
- to help specialists in clinical disciplines in diagnostics;
- for scientific studies;
- to establish the most suitable therapy;

Often, physiological psychologists examine the effects that they study in infrahuman subjects using surgical or invasive techniques and processes.

At the beginning psychophysiological examined the physiological responses and organ systems, innervated by the autonomic nervous system, but during the last decades they turned their look to the central nervous system, exploring cortical brain, brain waves, functional magnetic resonance and other neuroimaging techniques.

COMPERISON BETWEEN PSYCHOPHYSIOLOGIST AND PHYSIOLOGICAL PSYCHOLOGIST		
Psycho-physiologists	Physiological psychologist	Psychophysiology
Look at how stressful situation will produce a result in the cardiovascular system such as a change in heart rate (HR), vasodilatation or vasoconstriction, myocardial contractility, stroke volume.	Look at how one cardiovascular event may influence another cardiovascular or endocrine event	It is related with neurosciences, Social neurosciences, brain, psychosomatics medical disciplines

Historically Psychophysiologicals trend to examine:

- physiological responses and organ systems innervated by the autonomic nervous systems
- Interested in the Central Nervous System
- Brain waves (EEG, SER, CBF)
- Advanced technology – such functions as magnetic resonance

There is a connection between psychophysiology with medicine and the most of the medical branches: psychology; medical psychologies; clinical psychology; psychiatry; neurology; neurophysiology; biochemistry; pharmacology; physiology; pathophysiology; biology; genetic studies; endocrinology; cardiology; nephrology; allergology; hematology; ophthalmology; surgery; gastroenterology; ethology.

The main psychophysiological methods are:

- **Electro-physiological** – **EEG** (electroencephalography), **SER** (skin electro-resistance), **EMG** (electromyography), **ECG** (electrocardiography), **rCBF** (regional cerebral blood flow), **CTG** (computer tomography), **PET** (positron tomography), **RR** (arterial hypertension), heart-rate, temperature et s. o. **fMR** (functional magnetic resonance imaging), **GSR** (galvanic skin resonance), **EGG** (electrogastrogram); **EOG** (Electro-oculogram);

- **Biochemical examinations** – catecholamines (epinephrine & nor-epinephrine), cortisol levels (in plasma & in various brain structures), thyroid hormones, melatonin, serotonin et s. o.
- **Chronobiological studies** – examined the daily, weekly, monthly and annual fluctuations of the various physiological parameters as RR, pulse rate, temperature, cortisol, melatonin, epinephrine, nor-epinephrine, serotonin and others. We must stress on the fact that chronobiologists know the circadian rhythm of more than 300 physiological parameters in the living organisms.
- **Experimental psychophysiology** – the roots begin with the studies of I. P. Pavlov.
- **Psychological methods** – different psychological tests and scales for examination the various psychological spheres of the patients with psychiatric and somatic disturbances.
- **Observation and description** of the behavior. The psychiatrist/psychologist observed the patient behavior and in a special portfolio made description of the walk, the expression of the face (sad, without any expression, cheerful, jocular, silly, afraid).
- **Statistical methods** – used for the 1st time by Simon and Binet in Paris. Statistical methods help psychologist to establish the most spread symptoms and syndromes, to measure the degree of their expression (light, middle, heavy, very heavy) and to make a correlation of their frequency among healthy persons and patients with psychiatric disorders.

In its historical development the field of psychophysiology has cultivated and matured considerably several conceptual trends that are in narrow interrelationship with psychology and psychiatry. This is especially important with the empirical findings and theoretical perspectives, and thus can powerfully shape clinical concepts, research and applications.

Psychologist measured central events and processes as peripheral physiological changes, and they increasingly employ psychological states and processes as dependent as well as independent variables.

Psychophysiology as a discipline had advanced during the past several decades the importance of this discipline between psychology, psychiatry and neurosciences.

The complex interactions between psychological processes and a range of systems, such as the immune system, traditionally recognized links with the autonomic and hypothalamic-pituitary-adrenal (HPA) system. We must not neglect their connection with brain.

We must stress on the growing interdisciplinary collaboration between psychophysiology and behavioral and cognitive neuroscience, neuropsychology, endocrinology, neurochemistry, immunology, molecular biology, and behavioral genetics.

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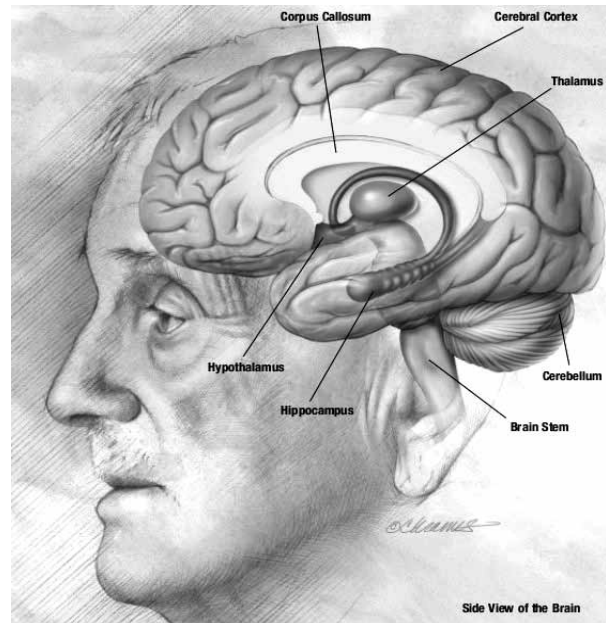
1. Some aspects on brain structure

The human brain is comprised of a number of different regions. Each of these regions are vitally important with highly specialized functions.

The brain is roughly divided into three parts which include the following:

1. Forebrain;
2. Midbrain;
3. Brain stem or hind brain

These terms relate to the front-to-back arrangement of structures in the developing embryo, although during the course of development the positions change so that the forebrain is essentially sitting on top of the midbrain and hindbrain



The forebrain consists of:

- **the cerebral cortex:** The cerebral cortex is the outer layer of the brain and is just a few millimetres thick. It is involved in memory, attention, language, thinking, and voluntary movement. In humans, the cortex is bunched up into convolutions which enables a greater area to be enclosed within the skull. The surface of the cortex consists of unmyelinated gray neurons, which is why this part of the brain is sometimes referred to as gray matter. The interior of the brain consists of myelinated neurons that are referred to as white matter.
- **the basal ganglia:** The basal ganglia are particularly involved in motor control and learning. Deficits in this area have been linked with Huntington's disease and Parkinson's disease.
- **the limbic system:** The limbic system is associated with learning, memory, emotion, and motivation. It consists of:
 - **the amygdala** – here are involved in the processing of emotion, especially anger, fear and aggression. Some researchers consider the amygdala to be part of the basal ganglia.
 - **the septum;**
 - **the hippocampus** – it plays an important role in memory formation. The hippocampal damage is associated with deficits in declarative memory, but not procedural memory. In particular, hippocampal damage is associated with the inability to create new long-term declarative memories.
- **the thalamus:** It has multiple functions – to process sensory information and relay it to the cortex. Other roles include involvement in the regulation of sleep and waking, and regulation of awareness;
- **the hypothalamus:** it interacts with the limbic system and is involved in the regulation of hunger, thirst, temperature, and emotion. This area is responsible for the formation, storing and organizing of memories.

The cerebral cortex is the outer layer of the brain and is just a few millimetres thick. *It is involved in memory, attention, language, thinking, and voluntary movement.* In humans, the cortex is bunched up into convolutions which enables a greater area to be enclosed within the skull. The surface of the cortex consists of unmyelinated gray neurons, which is why this part of the brain is sometimes referred to as gray matter. The interior of the brain consists of myelinated neurons that are referred to as *white matter*.

Midbrain contains a number of structures, including:

- **the superior colliculi**, which is involved in vision;
- **the inferior colliculi**, which are involved in hearing;
- **the grey matter**, red nucleus, substantia nigra, and ventral region, which are all important for the control the movements.
- **The Reticular Activating System** – plays an important role in regulating consciousness, including sleep, waking, heartbeat, and breathing.

Hindbrain

The hindbrain also consists of several structures.

- **The medulla oblongata** controls heartrate and is also involved in the control of breathing, swallowing, and digestion.
- **The pons** relays messages between different parts of the brain, in particular sensory messages between the cerebellum and cerebrum.
- **The cerebellum** is involved in integrating sensory perception, and controls bodily coordination and balance

The cortex is made up of four lobes which include:

The frontal lobe – This region of the brain occupies the front part of the skull and lies behind the forehead. The frontal lobe is associated with planning, decision making, voluntary muscle movement, processing speech, smell, and emotions.

The parietal lobe – This area of the brain processes sensory information and is responsible for determining spatial awareness, navigation and positioning. It is also involved in processing information related to taste, temperature and touch.

The temporal lobe – The temporal lobe is involved in processing visual and auditory information and controls some aspects of language perception, memory and emotion.

The occipital lobe – This is the visual processing centre of the brain and contains the largest proportion of the visual cortex region.

The three main structures just described, the forebrain, midbrain, and hindbrain, evolved in different periods of human pre-history. In the womb, the development of these structures roughly corresponds to their evolutionary development. The hindbrain is the oldest part of the brain in evolutionary terms and the first to develop prenatally. The midbrain evolved after the hindbrain and is the second structure to develop prenatally. Finally, the forebrain is the most recent evolutionary addition and is the last to develop prenatally. Note also that the oldest parts of the brain tend to deal with the most basic functions, such as breathing and heartrate, and they are the least susceptible to damage. People who suffer brain damage, whether as a result of an external impact or from a stroke, often lose some cognitive function but nonetheless remain able to eat, sleep, and breath. Carl Sagan described some of the structur functions, such as breathing and heartrate, and they are the least susceptible to damage. People who suffer brain damage, whether as a result of an external impact or from a stroke, often lose some cognitive function but nonetheless remain able to eat, sleep, and breath.

2. *Lateralization of the brain hemispheres*

The various psychic functions are connected with the function of the different systems, that are formed by neurons. If we would like to understand the mechanisms of the various psychic disturbances we must have an information for neuron' structure and functions. The brain' functions are determined by morphology, biochemistry and neurons' functions. The new non-invasive technologies gave us the ability to study the human's psychic functions. The best way to understand their mechanisms are the patients, in which the connection between the two hemispheres is damaged.

For instance the domination of the:

- **the left hemisphere** – logical and linguistic abilities, the verbal function is more expressed, more developed are the speech abilities; language functions such as grammar, vocabulary and literal meaning. While language production is left-lateralized in up to 90% of right-handed subjects, it is more bilateral, or even right lateralized in approximately 50% of left-handers. The exact calculation and fact retrieval are associated with left parietal regions, perhaps due to their ties to linguistic processing.
- **the right hemisphere** – some simple perceptions, more expressed are the visual function. The speech abilities are not well developed. The language functions, such as intonation and accentuation, more often are lateralized to the right hemisphere of the brain. The scientists questioned “Is it possible the right hemisphere to be stronger in some aspects?”
- **bilaterally** – the processing of visual and auditory stimuli, spatial manipulation, facial perception, and artistic ability, but may show a right hemisphere superiority. Numerical estimation, comparison and online calculation depend on bilateral parietal regions.

Hyperactive right hemisphere is linked with Depression, with evidence of selective involvement in “processing negative emotions, pessimistic thoughts and unconstructive thinking styles”, as well as vigilance, arousal and self-reflection, and a relatively hypoactive left hemisphere, “specifically involved in processing pleasurable experiences” and “relatively more involved in decision-making processes”.

Left hemisphere lesions result in a commissive response bias or error pattern. Dyscalculia is a neurological syndrome associated with damage to the left temporo-parietal function. This syndrome is associated with poor numeric manipulation, poor mental arithmetic skill, and the inability to either understand or apply mathematical concepts

Right hemisphere lesions result in a commissive response bias or error pattern.” The delusional misidentification syndromes, reduplicative paramnesia and Capgras delusion are also often the result of right hemisphere lesions. There is evidence, that the right hemisphere is more involved in processing novel situations, while the left hemisphere is most involved when routine or well rehearsed processing is called for.

Terence Hines states that the research on brain lateralization is valid as a research program, though commercial promoters have applied it to promote subjects and products far outside the implications of the research. For example, the implications of the research have no bearing on psychological interventions such as neurolinguistic programming, brain training equipment, or management training.

Left-handed persons and Social stigma

“For centuries, left-handers have suffered unfair discrimination in a world designed for right-handers. Moreover, as well as inconvenience, left-handed people have been considered unlucky or even malicious for their difference by the right-handed majority”.

One of the most asking question is: “Is it a problem to be left-handed? The lateralization of the two hemispheres plays an important role the dominance of the left/right hemisphere is genetically determined and it is connected with specific abilities of left/right handed persons.

In the Midlde Ages was spread the idea that Davil is the main reson left-handed. In many European languges the word for diarection “right” also means “correct”, awkward, or “proper”. The Latin word “sinister” means “left”, “unlucky”, and many other negatives as clumsy, malicious, and so on associated with left-handed-persons. It is known that left-handed children were punished and did not permit them to eat and write with the left hand. In Taiwan and Mainland China, black-handed were strongly encouraged to switch to be right-handed, as they were caused by “black magic”.

Writing on Latin and Cyrillic alphabet is a problem for left-handed and their writing is not very clear, because moving one’s hand away from its side towards the other side of the body can cause smudging, whereas it is not a problem when they have to write in Arabic or Hebrew.

Handedness is a better (faster or more precise) performance or individual preference for use of a hand. Handedness is not a discrete variable (right or left), but a continuous one that can be expressed at levels between strong left and strong right.

Left-Handed Health Risks: Are we Doomed?

- *6 of the past 12 presidents have been lefties*
- *I’m a lefty, and I love to read interesting facts about left-handed people.*
- *Great. And I thought we’re supposed to be the smart, creative people that eventually become presidents.*



A recent Wall Street Journal article, however, says that **left-handed people are more prone to mental illness, among other health issues**. For example left-handedness appears to be associated with a greater risk for a number of psychiatric and developmental disorders. While lefties make up about 10% of the overall population, about 20% of people with schizophrenia are lefties, for example. Links between left-handedness and dyslexia, ADHD and some mood disorders have also been reported in research studies. The reasons for these so-called health risks aren’t all that clear. It may actually have something to do with brain lateralization, or being right- or left-brained. Though we like to say left-handed people are in their right minds, about 70% of lefties are actually left-brain dominant. It’s the 30% that are right-brain dominated or “distributed” that are at greater risk for brain disorders and learning disabilities. Of course, since left-handed people’s brains are known to be wired differently, they are not usually chosen to participate in studies. I guess we throw things off too much. One study actually links stress while being pregnant to “increase the risk of having non-right-handed children.”

There are several theories of how handedness develops in individual humans:

Prenatal development	Researchers studied fetuses in uterus and determined that handedness in the uterus was a very accurate predictor of handedness after birth.
Ultrasound	It may affect the brains of unborn children, causing higher rates of left-handedness in children whose mothers received ultrasounds during pregnancy. Research suggests there is a weak association between ultrasound screening (sonography used to check on the healthy development of the fetus and mother during pregnancy) and non-right-handedness.
Prenatal vestibular asymmetry	The position of the fetus in the final trimester and a baby's subsequent birth position can affect handedness. About two-thirds of fetuses present with their left occiput (back of the head) at birth. This partly explains why prematurity results in a decrease in right-handedness. Previc argues that asymmetric prenatal positioning creates asymmetric stimulation of the vestibular system, which is involved in the development of handedness. In fact, every major disorder in which patients show reduced right-handedness is associated with either vestibular abnormalities or delay and asymmetry of the vestibular cortex is strongly correlated with the direction of handedness.
Genetic mechanisms	There are theoretical single gene models that tried to explain the patterns of inheritance of handedness: genetic variance in handedness cannot be connected with a single genetic locus: handedness is polygenic and estimate that at least 40 loci contribute to determining this trait. Genes involved in the determination of left/right asymmetry in the body play a key role during determining handedness. These results suggest the same mechanisms that determine left/right asymmetry. In the body, also play a role in the development of brain asymmetry (handedness is reflection of brain asymmetry for motor function). For example, if both parents of a child are left-handed, there is a 26% chance of that child being left-handed. A large study of twins from 25,732 families by Medland et al. (2006) has indicated that the heritability of handedness is roughly 24%.
Brain hemisphere' division of labor	How handedness affects the hemispheres, is the brain hemisphere division of labor. As the left side of the brain controls speaking, right-handedness predominates. This theory also predicts that left-handed people have a reversed brain division of labor; Verbal processing in right-handed individuals takes place mostly in the left hemisphere, whereas visuospatial processing is mostly done in the opposite hemisphere. Left-handed individuals have a heterogeneous brain organization in which their brain hemisphere is either organized in the same way as right-handers (but with the hemispheres reversed) or even such that both hemispheres are used for verbal processing. When the average is taken across all types of left-handedness, it shows that left-handers are less lateralized.
Prenatal hormone exposure	Males with in-utero exposure to diethylstilbestrol (a synthetic estrogen-based fertility drug) were more likely to be left-handed over the clinical control group. Experimental animal models showed the same pattern (2003).
Life expectancy	Life expectancy of left-handed people was nine years less than that of right-handed people, these findings were quickly discredited.

13th August is an International Left-Handers Day, It was founded by the Left-Handers Club in 1992, with the club itself having been founded in 1990. International Left-Handers Day is, according to the club, "an annual event when left-handers everywhere can celebrate their sinistrality (meaning left-handedness) and increase public awareness of the advantages and disadvantages of being left-handed. Over 20 regional events to mark the day in 2001 - including left-v-right sports matches, a left-handed tea party, pubs using left-handed corkscrews where patrons drank and played pub games with the left hand only, and nationwide

There are actually four types:

1. left-handedness – more common among men than among women; Left-handedness is less common than right-handedness. Left-handed people are more skillful with their left hands when performing tasks. Approximately 10% of the world population is left-handed.

2. right-handedness – Right-handedness is most common. Right-handed people are more skillful with their right hands when performing tasks. Studies suggest that 70–90% of the world population is right-handed.

3. mixed-handedness – is the change of hand preference between tasks. This is common in the population with about a 30% prevalence.

4. Ambilevous or ambisinister – is exceptionally rare, although it can be learned. A truly ambidextrous person is able to do any task equally well with either hand. Those who learn it still tend to favor their originally dominant hand. people demonstrate awkwardness with both hands. Ambisinistrous motor skills or a low level of dexterity may be the result of a debilitating physical condition.

Characteristic features of right-handed and left-handed persons

Right-handed	Parameters	Left-handed
No problems	Learning ability – reading and dyslexia	15 times anomalies in the left hemisphere leads the functions to be transferred in the other hand in the early childhood.
96% – left hemisphere 4% – right hemisphere;	Dominant hemisphere	70% – right hemisphere; 15% – equal participation of the two 15% – right hemisphere;
The percentage is lower	Talents, connected with the spatiality relationships	The percentage of the number of painters, musicians, violins, mathematics, artists and sport successes is significantly higher.
The temporal part and parts of the upper surface of the planum are bigger	Anatomic differences, established by the new imagine methods.	The right frontal part is thicker than the left, and the left occipital part is wider and project to the middle line.
The concentration is bigger in the left hemisphere.	Dopamine in nigrostriatum tract	The concentration is bigger in the right hemisphere.
The correlation between handedness and earnings for the general population is not significant.	Income	Among college-educated people, left-handers earned 10 to 15% more than their right-handed counterparts.
The % is higher in peaceful countries.	Violent/peaceful society	The % is higher in Violent society -20-30%.
Almost all are right-handed	Animals	Even rare among chimpanzee, but no other animals.

Such sports as table tennis, badminton, cricket, and tennis have an over representation of left-handedness, while non-interactive sports such as swimming show no overrepresentation. In fencing, 1/2 of the participants are left-handed. The advantage to players in one-on-one sports, as tennis, boxing, fencing, judo, is that, in a population containing perhaps 10% left-handers and 90% right-handers, the left-hander plays 90% of his/her games against right-handed opponents and is well-practiced at dealing with this asymmetry. Right-handers play 90% of their games against other right-handers. Thus, when confronted with left-handers, they are less practiced. If two left-handers compete against each other, they are both likely to be at the same level of practice as when right-handers play other right-handers.

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II. EXPERIMENTAL PSYCHOLOGY

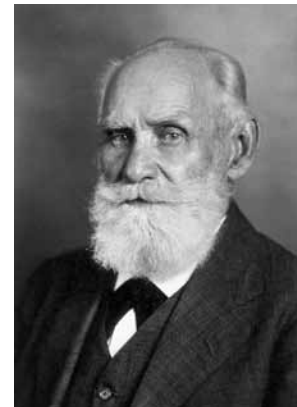
1. Ivan Petrovich Pavlov

The experimental psychology is connected with the name of **Ivan Petrovich Pavlov**. He puts the roots of experimental psychophysiology.

He carried out his classical experiments on the digestive glands at the Institute of experimental Medicine. He investigated the gastric function of dogs and later, in children, by externalizing a salivary gland so he could collect, measure and analyze the saliva, and what response it had to food under different conditions.

Who is Ivan Pavlov?

He is a Russian Scientist. He was born in 1849 in Ryazan. His father was a priest. That is why he was prepared for religious career, but in 1870 he refused religion and went into science. He directed to the field of physiology, by studying the mechanisms underlying the digestive system in mammals. Pavlov was awarded in 1904 the Noble Prize in Physiology or Medicine for his original work in this field of research. He studied the laws on the formation of conditioned reflexes, a topic on which he worked till his death in 1936. His discoveries were very important not only in physiology and medicine, but in psychiatry and psychology. He paved the way for an objective science of behavior.



Ivan P. Pavlov
1894 – 1936

- Like many scientific advances the conditioned stimulus were discovered accident in 1890. Pavlov was looking at salivation in dogs in response to be fed, when he noticed that his dogs would begin to salivate when he entered the room even when he did not give the food. At the beginning he did not pay any attention to this fact. Pavlovian Conditioning - he started from the idea, that there are some things that a dog does not need to learn - for example, the dogs does not need to salivate whenever they see food. This reflex very hard influenced to the dog.

- In behaviorist term it is unconditioned response (stimulus-response connection that required no learning).

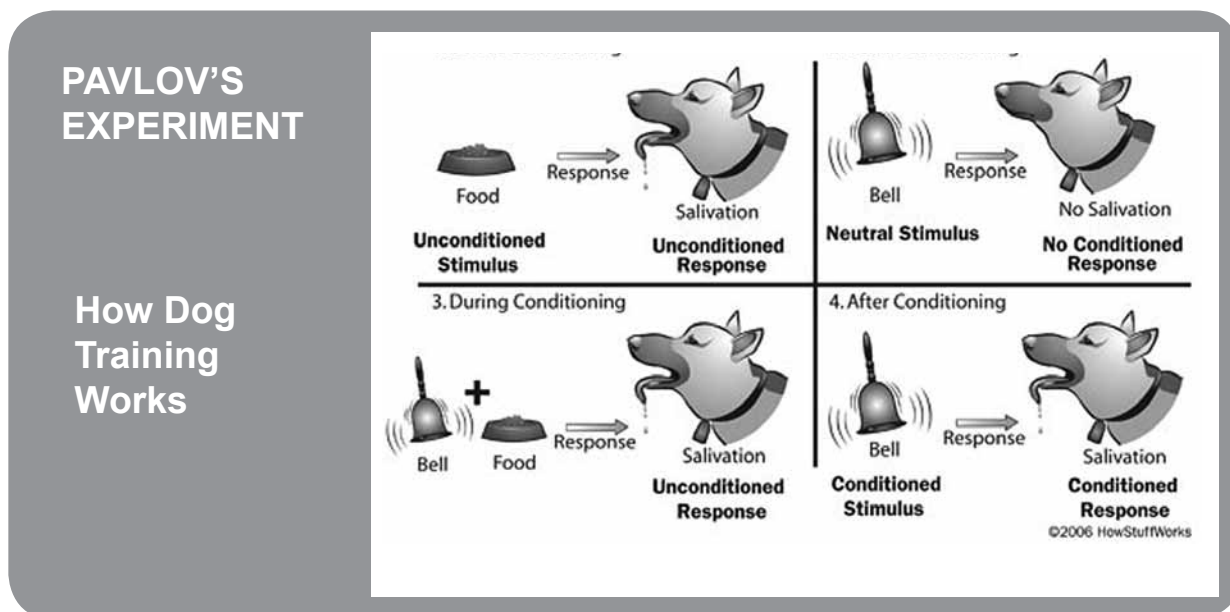
- unconditioned stimulus (food) > unconditioned response (salivate). Pavlov showed the existence of the unconditioned response by presenting a dog with bowl of food and the measuring its salivary secretions.

- He discovered that any objects or event which the dog learned to associate with food (such as the laboratory assistant) would give the same response. So he realized that he had made an important scientific discovery and he devoted the rest of his career in studying this.

- Pavlov knew that the dogs in his lab had learned to associate food with his lab assistant. This must have been learned because at one point the dogs did not do it, and there came a point where they started, so their behavior had changed. The changed behavior must be as a result of learning.

- In behaviorist terms, the lab assistant was originally a neutral stimulus. It is called neutral because it produces no response. What has happened was that the neutral stimulus (the lab assistant) had become with an unconditioned stimulus.

- He carried out his classical experiments on the digestive glands at the Institute of Experimental Medicine. He investigated the gastric function of dogs and later, in children, by externalizing a salivary gland so he could collect, measure and analyze the saliva and what response it had to food, under different conditions.



In Pavlov's laboratory the animals learned that a stimulus (in this case a bell) means, they would receive a food. Starting with two things that are naturally paired – salivating and being fed. Pavlov added a third component by ringing a bell before feeding. After several trials, the dogs begin to make association of the food with the bell ring – and the reaction was salivation at the sound of the bell, but without any food present.

Experimental Medicine: He investigated the gastric function of dogs and later, in children, by externalizing a salivary gland so he could collect, measure and analyze the saliva and what response it had to food, under different conditions.

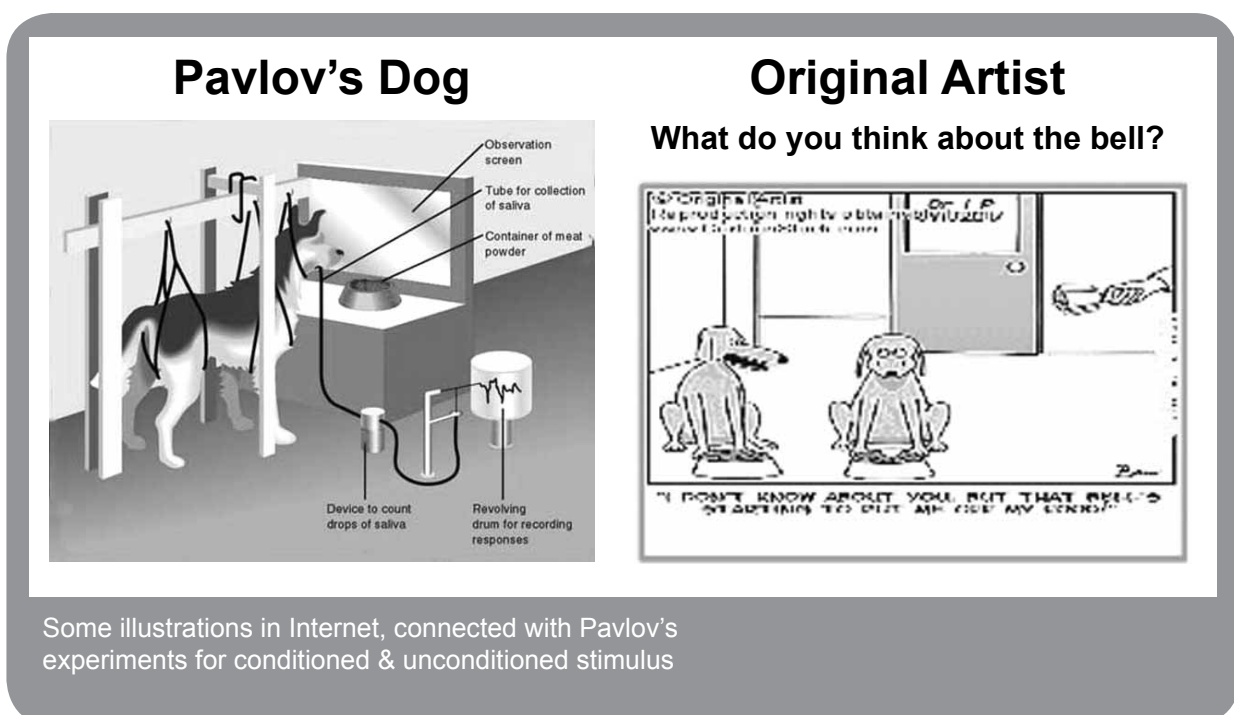
What acknowledgment gave Pavlov's findings?

- Pavlov's work paved the way for a new, more objective method of studying human behavior.
- His studies have been used in many fields as: the treatment for anti-phobia.
- For example – an established conditioned response (salivating in the case of dogs) decreased in intensity if the conditioned stimulus (bell) is repeatedly presented without the unconditioned stimulus (food). This reflex is extinction.
- He noticed that dogs tended to salivate before food was actually delivered to their mouths, and set out to investigate this "psychic secretion", as he called it.

F. Skinner was the 1st scientist, who was recognized with Pavlov's experiments on animal behavior.

Is the bell a neutral stimulus?

- When Pavlov gave food to his dogs, he also rang a bell. After a number of repeats of this procedure, he tried the bell on its own. As you see the bell caused an increase in salivation.
- Conditional response
- So the dog had learned the connection between the bell and the food. The bell and the food – a new behavior had been learned. Because this response was learned (or conditioned) it is called a conditional response.
- Conditional stimulus – the neutral stimulus has become a conditional stimulus.



Pavlov's laboratory housed a full-scale kennel for the experimental animals. Pavlov was interested in observing their long-term physiological processes. This required keeping them alive and healthy in order to conduct chronic experiments, as he called them. This was a new kind of study, because previously experiments had been "acute" meaning that the dog went through vivisection and was ultimately killed in the process.

S. Morgulis' article in 1921 in the Journal Science came as a critique of Pavlov's work in that it addressed concerns about the environment in which these experiments had been performed. "It is gratifying to be assured that Professor Pavlov is raising potatoes only as a pastime and still gives the best of his genius to scientific investigation.

In 1921, Pavlov began holding laboratory meeting known as "Wednesday meetings" where he spoke bluntly on many topics, including his views on psychology. These meetings lasted until he died in 1936.

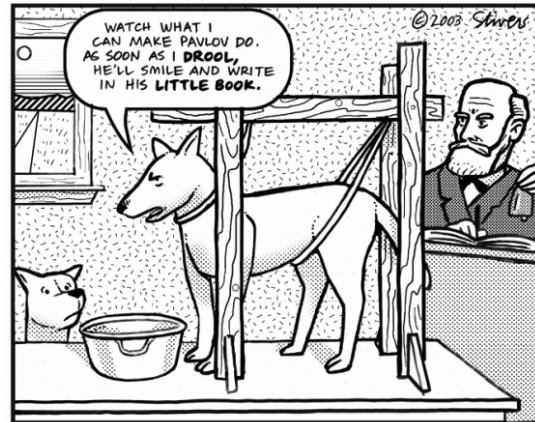
The ball python keepers put the question whether to feed their ball python — in its tank or in a separate area – in its tank owes its origin to Pavlov and in his famous “dog experiment”

Watch what I can make Pavlov do. As soon as I drool.

He will smile and will write it in his little book.

Pavlov learned that if he fed a dog and rang a bell, the dog would be conditioned to expect food when it heard the ringing bell.

When Pavlov rings his bell the experimental dog would begin salivating, even in the absence of food.



Desensitization

How to treat phobias by a certain environmental situations, such as heights or crowds? At the beginning we patient must received a good relaxation technique. Then he/she must imagine the fear producing the situation. The strongest anxiety provoking situation must be at the end. This process is called desensitization.

Contribution to Psychology

Even Pavlov was not a psychologist his work had a very important influence on the development of behaviorism. His discovery and research on reflexes influence on the growing behaviorist movement – and specially for the development of behavior psychotherapy.

John Watson used his data in his experiment for little Albert and he often cited Pavlov in his publications.

Other researchers utilized Pavlov's works in the study of conditioning as a form of learning. His research also demonstrated techniques of studying reactions to the environment in objective scientific methods.

Commercial advertising (MEDIA)

Pavlov's knowledge could be exploited by commercial advertising. An effective commercial should be able to manipulate the response to a stimulus like (seeing a products name) which initially does not provoke any feeling. The idea is to make people to train to make "false" connection between positive emotions (e. g. happiness or feeling attractive) and the particular brand of consumer goods being advertised.

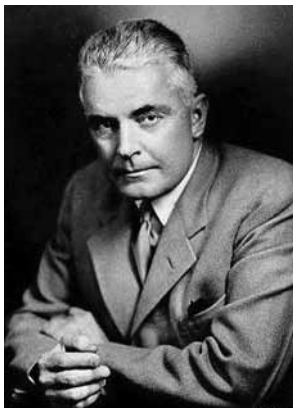
2. John Watson's experiments with little Albert

Watson was born in 1878 in Travelers Rest, South Carolina. His mother was very religious and her prohibition was against drinking, smoking and dancing. She, named Watson after a prominent Baptist minister in hopes that it would help him receive the call to preach the Gospel. Later he had antipathy to all forms of religion. His father was alcoholic, left the family and lived with two Indian women when he was 13 years old. As they were very poor, his mother sold their farm and went to South Carolina with the idea to give him the opportunity for success. He understood that this success could be achieved if he studied in a prestige University. He studied in Furman University in Greenville. He considered himself as a poor student, and it was connected with his poor social skills. After that he entered in University of Chicago. There he was imperative to his ascendancy in the psychology world. This University helps him to develop psychology and to understand behaviorism. He wished to make psychology more scientifically acceptable and specially when he was recognized with the experiments of Ivan P. Pavlov.

Watson defended a dissertation "Animal Education: An Experimental Study on the Psychical Development of the White Rat, Correlated with the Growth of its Nervous System", in 1903 in Chicago University. He described the relationship between brain myelinization and learning ability in rats in different age. He took a position at John Hopkins University and was promoted to chair the Department of Psychology.

John B. Watson (1920)

Watson – puts the roots In behaviorism



The little Albert experiment shows the classical conditioning in humans.

John Watson was interested in children – specially their reaction whenever they heard loud noises was followed by fear.

Furthermore he established that children's fear can be native or could be explained with an unconditioned response.

Following the principles of classical conditioning, he could condition in a child to feel fear from another stimulus which normally the child did not have a fear (for example from a lovely toy).

The Little Albert's experiment showed an empirical evidence of classical conditioning in humans. This study was also an example of stimulus generalization. It was carried out by John B. Watson and his graduate student, Rosalie Rayner, at Johns Hopkins University. The results were first published in the February 1920 issue of the *Journal of Experimental Psychology*.

Watson used the same kind of classical conditioning as Pavlov had used in his experiments with dogs. The aim of Watson and Rayner was to condition phobias into an emotionally stable child. They chose "Albert" for this study (at the age of about nine months) from a hospital.

Methodology

Little Albert was given a battery of baseline emotional test – the infant was exposed, briefly and for the first time, to a white rabbit, a rat, a dog and a monkey, masks with and without hair, cotton, wool, newspapers. During the experiment Little Albert showed no fear towards these things. Albert was placed on a table, in the middle of the room.

An white lab rat was placed near the child and he allowed to play with it. The child has no fear from it, even when the rat moved around the room, Albert tried to reach it.

The next step was: Watson and his assistant Rayner made a loud sound just in the moment when the child touched the rat. The reaction of the little Albert was – crying and showing fear. Later the rat was again presented to the boy – when the rat appeared in the room he became very distressed, cried loudly and turned to move away.

The Little Albert experiment was a case study showing empirical evidence of classical conditioning in humans. This study was also an example of stimulus generalization. It was carried out by John B. Watson and his graduate student, Rosalie Rayner, at Johns Hopkins University.



Now he fears even Santa Claus

Little Albert

The baby had associated the white rat (original neutral stimulus, now conditioned stimulus) with the loud noise (unconditioned stimulus) and was producing the fearful or emotional response of crying (originally the unconditioned response to the noise, now the conditioned response to the rat).

Watson's results from his experiments

- The use of a loud sound (unconditioned stimulus) resulted fear (unconditioned response), a natural response.
- Introduction of a rat (neutral stimulus) paired with a loud sound (unconditioned stimulus) provoked a fear (unconditioned response).
- Successive introduction of a rat (conditioned stimulus) resulted in fear (conditioned response). Here, learning is demonstrated.

This experiment led to the following progression of results:

- **First**, the introduction of a loud sound (unconditioned stimulus) resulted in fear (unconditioned response) – a natural response.
- **Secondly**, the introduction of a rat (neutral stimulus) paired with the loud sound (unconditioned stimulus) eventually resulted in fear (unconditioned response). Finally, the successive introductions of only a rat (conditioned stimulus) resulted in fear (conditioned response). Therefore, learning was demonstrated.

Tills experiment shows that:	Post experiment:
<p>Little Albert seemed to generalized his response to furry (leather, wool, textile material, silk) objects. When Watson showed the boy 17 days after the original experiment a non-white rabbit into the room the boy also became distressed. He had similar reactions when presented with the fury dog, a seal-skin coat, and even when Watson appeared in front of the boy wearing a Santa Claus mask with white cotton balls as his beard, although Albert did not fear everything with hair.</p>	<p>Albert was taken from the hospital, after the series of experiments were done, there for, for 31 days all testing were discontinued. He wanted to desensitize him to see if a conditioned stimulus could be removed, but knew from the beginning of the study that there would not be time. However the child left the hospital on the day these last tests were done, and no desensitizing ever took place, hence the opportunity of developing an experimental technique for removing the Conditioned Emotional Response was than discontinued.</p>

The experiment showed that Little Albert seemed to generalize his response to furry objects so that when Watson sent a non-white rabbit into the room seventeen days after the original experiment, Albert also became distressed. He showed similar reactions when presented with a furry dog, a seal-skin coat, and even when Watson appeared in front of him wearing a Santa Claus mask with white cotton balls as his beard. Albert, however, did not fear everything with hair; and there was some confusing results when pairing the noise with the rabbit and the dog.

John B. Watson, after observing children in the field, was interested in finding support for his notion that the reaction of children, whenever they heard loud noises, was prompted by fear. Furthermore, he reasoned that this fear was innate or due to an unconditioned response. He felt that following the principles of classical conditioning, he could condition a child to fear another distinctive stimulus which normally would not be feared by a child.

• Ethical moments in Watson’s experiment

By the present-day standards Watson’s experiment is un-ethical for numerous reasons:

- *Very important moment is mother’s inform agreement (“informed consent”) consequence. A common believe among psychologists is that Albert’s mother was not informed about this experiment.*
- *It is immoral to evoke reactions of fear in humans;*
- *The experiments should not cause the human to suffer unnecessary distress, or to be physically harmed.*
- *There must be a special protection for children and specially when they are in institution.*
- *The experiment did not have a control subject.*

Criticism of Watson experiment (Hall P. Beck et al. (2009))	Supporters of Watson's experiment
<p>After reviewing Watson's studios, they published an article in which they claimed to have discovered the true Identify "Albert B". They understood that "Albert B" was a pseudonym and he was a child of an unmarried nurse. Beck and some psychologists put a question about the reality of this boys. Others had established that this little child died on May, 1925 of hydrocephalus, which was developed in 1922. Another article from other team In 1912. just like Beck had doubt about this child. They did a revision of "Albert B" film and thought that the child was with hydrocephalus from birth. It was a subject of special care from peditrics of peditric neurologist and psychologist.</p> <p>If It is true Watson and Raynes's hypothesis ruined, as Albert B child was not a normal child .</p>	<p>Evon the most critical papers, we must not neglect the fact that his experiment is very useful for the modern learning theorists to see how the Albert study prompted the next development of experimental psychology. Their study puts the data in the category of "interesting butun -inter -protable" results.</p> <p>It was also found that most textbooks suffer from a wrong concept during referring their study. The post-conditioning Albert's fears In some texts is misrepresent and maximize.</p> <p>Albert's mother worked in the same building as Watson and did not know the tests were being conducted. When she found out she took Albert and moved away. Nobody knew where they were going.</p> <p>Later reports (2009) that none of these and other tales about Albert were true</p>

Watson put the roots of Behaviorism

In 1913 with his article "Psychology as the Behaviorist Views" he introduced the idea for behaviorism. He stressed on the most important moments of his new philosophy of psychology, called "behaviorism". With his "behaviorism", Watson put the emphasis on external behavior of people and their reactions on given situations, rather than the internal, mental state of those people. In his opinion, the analysis of behaviors and reactions was the only objective method to get insight in the human actions. This outlook, combined with the complementary ideas of determinism, evolutionary continuity and empiricism has contributed to what is now called radical behaviorism.

It was this new outlook that Watson claimed would lead psychology into a new era. He claimed that before. Wundt there was no psychology, and that after Wund there was only confusion and anarchy. It was Watson's new behaviorism that would pave the way for further advancements in psychology. Watson's behaviorism rejected the studying of consciousness. He was convinced that it could not be studied, and that past attempts to do so have only been hindering the advancement of psychological theories. He felt that introspection was faulty at best and awarded researchers nothing but more issues. He pushed for psychology to no longer be considered the science of the "mind". Instead, he stated that psychology should focus on the "behavior" of the individual, not their consciousness.

<p>WATSON-film.htm</p>	<p><i>If You would like to learn more about Ivan Pavlov's & John Watson's experiment with Little Albert, You could read in Internet.</i></p>	<p>Pavlov-film.htm</p>
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Task for homework

The GREEN team

To stress on the most positive moments of Watson's experiment:

- To protect his experiment;
- To defend his idea;
- To defend him from low-court;
- To put accent on the therapeutic importance of the experiment

The ORANGE team

To stress on the ethical moments of his experiment:

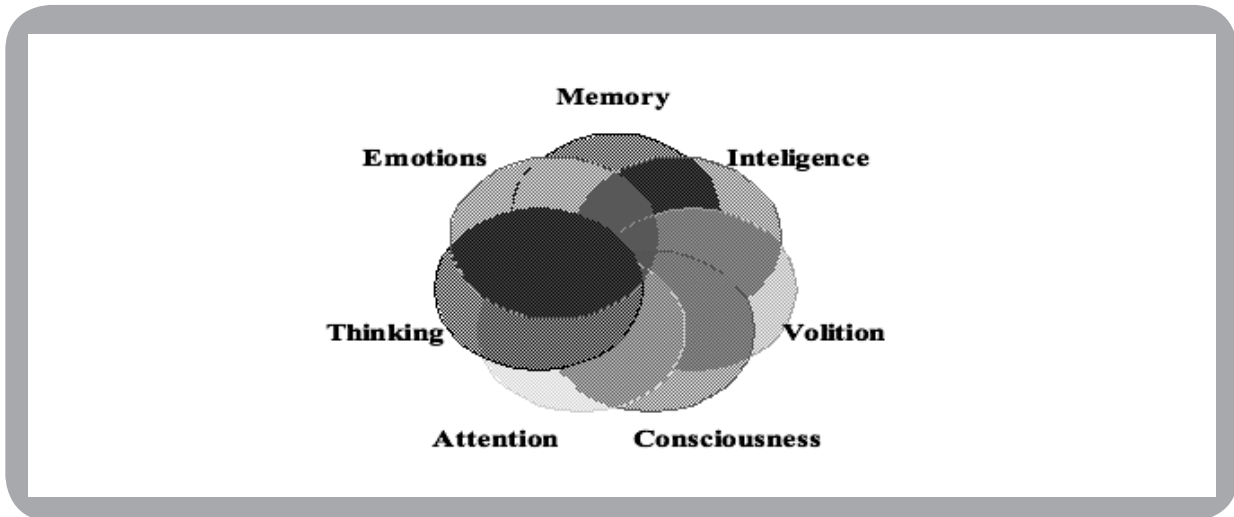
- To defend the right of the child and his mother;
- To bring him to trial;
- To discuss his action in front of the psychological society.

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III. PSYCHIC SPHERES

When we speak about the various psychiatric spheres it is difficult to declare which of them is the most important for the living organisms. Each psychiatric sphere is important for the persons to live normal in the surroundings.



Psychic Spheres		Questions
1. Perception; 2. Emotions; 3. Thinking; 4. Attention; 5. Conscious; 6. Will; 7. Memory.	?	1. Which of the known spheres is the most important? 2. Which of the following spheres is not so important? 3. Is it possible each sphere to exist alone? 4. What will happen if one of our spheres can not function? 5. Can the other spheres help s. o. if one of his spheres is disturbed? 6. Can a person lives without the ordinary surroundings?

The aim of the present textbook is to put a light of the psychophysiological mechanisms of the psychic spheres. The disturbed function of one psychic sphere could be exchanged by the other spheres. For example – persons who lose their vision the intensity of some other sense-organs could be stronger (their hearing, their sense of smell, sense of taste, sensation).

1. Perception - disturbances

Perception is our sensory experience of the world around us and involves both the recognition of environmental stimuli and actions in response to these stimuli. So the perception could give us information about environment and create our experience of the world.

DEFINITION: The mental process by which the nature of an object is recognized through the association of a memory of its other qualities with the special sense, sight, taste, etc., bringing it at the time to consciousness.

(In "Psychiatric Dictionary", 5th edition, by R. Campbell, 1981, p. 453)

Perception (from the Latin perceptio, percipio) is the organization, identification, and interpretation of sensory information in order to represent and understand the environment.

(From Wikipedia, the free encyclopedia)

<p>Perception is a complex act of transferring physical stimulation into psychological information and includes at least four aspects:</p>	<ul style="list-style-type: none"> • Reception; • Registration; • Processing (i. e. further reorganization in accord with memory, affects, needs, intentions, etc.); • Feed-back (proprio-receptive and autonomic processes and autonomic processes that allow the subject to determine if the object sensed is the object sought).
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All perception involves signals in the nervous system, which in turn result from physical or chemical stimulation of the sense organs. Perception is not the passive receipt of these signals, but is shaped by learning, memory, expectation, and attention. Perception depends on complex functions of the nervous system, but subjectively seems mostly effortless because this processing happens outside conscious awareness.

Illusion	<p>An erroneous perception, a false response to a sense-stimulation; but in a normal person this false believe usually brings the desire to check or verify its correctness, and often another sense or other senses may come to the rescue and satisfy him that it is merely an illusion.</p>
Eidetic imagine	<p>"The Eidetic Image has been identified in psychological literature as a vision, as a source for new thought and feeling, as a material picture in the mind which can be scanned by the person as he would scan a real current event in his environment, and as a potent, highly significant stimulus which arises from within the mind and throws it into a series of self-revealing imagery effects" (Klüver, 1932; Richardson, 1969; Ahsen, 1977)."</p>
Hallucination	<p>A hallucination is a perception in the absence of external stimulus that has qualities of real perception. Hallucinations are vivid, substantial, and located in external objective space. They are distinguished from the related phenomena of dreaming, which does not involve wakefulness;</p>

Perceptions include 5 senses: touch, sight, taste smell and taste. Perceptions included also the ability to detect body's position and movements and recognition of face.

DISTURBANCES OF PERCEPTIONS

I. ILLUSIONS

II. EIDETIC IMAGE

III. HALLUCINATIONS

1. Visual	very simple, elementary	Colors, points, Microscopic Macroscopic
	Complex organized	Scenes
2. Olfactory		
	Elementary, very simple	Noise, cry, only his name
3. Auditory	Complex organized	<ul style="list-style-type: none"> • imperative • Commentary • Hypnogogic • Hypnopompic • Alcoholic
4. Gustatory		
5. Haptic		

IV. DEPERSONALIZATION – Unrealistic perception of our own body;

Dysmorphophobia – obsessive fear or more commonly, delusional conviction that one is physically deformed or otherwise.

Looking at the mirror they could not recognize their own face, or they see in the mirror an ugly strange face.

VI. DEREALIZATION - unrealistic perception for the surrounding.

Imagination



Octavio Okampo (The kiss of the see)



Octavio Okampo

In a more general context, the eidetic can be defined as a normal subjective visual image experienced with noticeable vividness whether evoked by an actual external object or not. The eidetic image is not dependent on any prior experience, condition, state, or event.

Visual hallucination is the perception of an external visual stimulus where none exists, whereas visual illusion is a distortion of a real external stimulus, animals, objects, etc.

Visual hallucinations are separated into:

- **Simple visual hallucinations (SVH)** – they are also referred to as non-formed visual hallucinations and elementary visual hallucinations. These terms refer to lights, colors, geometric shapes, and indiscrete objects.

- **Complex visual hallucinations (CVH)** are also referred to as formed visual hallucinations. CVH are clear, life-like images or scenes such as people,

**Visual pseudohallucinations****Auditorial hallucinations**

Hallucinations may be manifested in a variety of forms. Various forms of hallucinations affect different senses, sometimes occurring simultaneously, creating multiple sensory hallucinations for those experiencing them.

Auditory hallucination (paracusia) – are perception of sounds without outside stimulus. Auditory hallucinations could be divided into two categories:

- **Elementary** – perceptions of sounds such as hissing, whistling, extended tone, sound, crying, and s. o.

- **Complex** – the patients listen music, voices, and other sounds, that may be familiar, completely unfamiliar, friendly or aggressive. In schizophrenia hallucinations are of one or more talking, voices are coming from outside the person, some could be with imperative character, or they can listen voices that make commentary about their behavior and some time the psychotic patients participate in their commentary.

- **Imperative** – the patient obeyed the voices commands and could not stand against them. Some persons with imperative hallucinations could kill some one, or make a suicide.
- **Commentary** – the patients listened voices that were spoken about him and he often took part in their commentaries.
- **Hypnagogic hallucination** – they occur just before falling asleep, and affect about 37% of the population. They can last from seconds to minutes and could be associated with narcolepsy, brainstem abnormalities.
- **Hypnopompic hallucinations** – they occur before waking.
- **Alcoholic** – patients listen voices with a contrary contents (some of the voices defend and excused their behavior, whereas other group of voices attack them. So their own thoughts appeared as voices in their head.

Olfactory hallucinations – could appear in associative imagination, for example, while watching, a romance movie, where the man gifts roses to the woman, the viewer senses the roses' odor, which does not exist. They are reported in migraine, schizophrenia, epilepsy.

Tactile hallucinations – they are illusion of tactile sensory input, simulating various types of pressure to the skin or other organs. Some persons have sensation of insects, crawling, and it is frequently associated with prolonged cocaine use, or alcohol. But some time it could be connected with some hormonal changes such as menopause, peripheral neuropathy, high fever, skin cancer, and some others.

Gustatory – the perceptions of taste without a stimulus. They could be connected with temporal lobe of epilepsy. The region of the brain responsible for gustatory hallucinations in this case are the insula and the superior bank of the sylvian fissure.

General somatic sensations – when the individual feels that his body is being mutilated, i.e. twisted, torn, or disemboweled. Other persons reported for invasion by animals in their mental organs, such as a snake in the stomach or frogs in the rectum.

Focal epilepsy – visual hallucinations due to focal seizures differ depending on the region of the brain where the seizures occurs: brightly colored, and geometric figures, are noticed in occipital lobe seizures. Temporal lobe seizures are characterized with complex visual hallucinations of people, scenes, or animals.

Heautoscopy (hallucination of a mirror image of one's self) - These "other selves" may be perfectly still or performing complex tasks, may be an image of a younger self or the present self, and tend to be only briefly present. They are spread among patients with temporal lobe epilepsy.

Drug-induced hallucination – they are caused by the consumption of psychoactive substances such as delirium, psychedelics, and certain stimulants, various intoxications, which are known to cause visual and auditory hallucinations. Some psychedelics as lysergic acid diethylamide and psilocybin can cause hallucinations that range from a spectrum of mild to severe. Some of these drugs could be used for the treatment of some mental disorders, and even for experiments.

Hallucinations – theories

- **Psychodynamic (Freudian) theories** – they were very popular in psychology. Hallucinations were seen as a projection of unconscious wishes, thoughts, desires;
- **Biological theory** – hallucinations are caused by functional deficits in the brain. With reference to mental illness, the function (or dysfunction) of the neurotransmitters glutamate and dopamine are thought to be particularly important.
- **The Freudian interpretation** – may have an aspect of truth, as the biological hypothesis explains the physical interpretations in the brain, while the Freudian interpretation addressed the psychological complexes related to the content of the hallucinations, such as hallucinating persecutory voices due to guilt.
- **Psychological research** – hallucinations may result from biases in what are known as metacognitive abilities.
- **Sensory deprivation hallucinations** – hallucinations could be caused by sense deprivation, when it continued for a long period of time. This method is used in secret services.

Language deprivation experiments

Language deprivation experiments are known in humanity history from ancient time. The idea is to isolate infants from the normal use of spoken or signed language in an attempt to discover the fundamental character of human nature or the origin of language. The Ancient records suggest that this kind of experiment was carried out from time to time. Stories of children that were rescued from wild animals existed from ancient time. Tales of children being adopted and nurtured by wolves, bears, monkeys, and other animals crop up with remarkable regularity. But the wild man was both savage and sublime, an image of desire as well as punishment. Wild or feral children are heart-rending pity for being far from the children of their age and wonder how to survive.

In *Herodotus's Histories* were found out the early description of such an experiment. It was done by the **Egyptian pharaoh Psamtik I**. He concluded that the Phrygian race had to predate the Egyptians since the child had first spoken something similar to the Phrygian word *bekos*, meaning "bread." However, it was a willful interpretation of their babbling. Also, the children had been raised in the company of a shepherd (who was forbidden to speak), and were thus exposed to the bleating of sheep, the sound of which bears a superficial resemblance to the word they were supposed to have uttered.



Medieval monarch Frederick II (Holy Roman Emperor, 1194 – 1250 AD), tried a similar experiment, with disastrous results. He saw young infants raised without human interaction in an attempt to determine if there was a natural language that they might demonstrate once their voices matured. It is claimed he was seeking to discover what language would have been imparted unto Adam and Eve by God. **Salimbene di Adam wrote about his experiment:** *“Frederick encouraged foster-mothers and nurses to suckle and bathe and wash the children, but in no ways to prattle or speak with them; for he would have learnt whether they would speak the Hebrew language (which had been the 1st), or Greek, or Latin, or Arabic, or perchance the tongue of their parents of whom they had been born. But he laboured in vain, for the children could not live without clappings of the hands, and gestures, and gladness of countenance, and blandishments*

James IV of Scotland – several Centuries later sent two children to be raised by a mute woman isolated on the island of Incketh, to determine if language was learned or innate. It was reported that the children spoke good Hebrew, but historians were sceptical of these fact. **Mughal emperor Akbar**, who supported the idea that speech arouse from hearing, thus children without hearing human speech would become mute. **Harlan Lane** quoted that in the 20th Century in Uganda jungle was discovered a boy for whom cared a monkey. **Rebecca Saxe (2006)** cited about peasants from Southern France that in 1799 saw a naked boy who moved in their fields and forests alone. He run away from the people and could not speak. He was captured several times and brought to the town, but he escaped. He appeared often in the village, visited the houses during the day to be fed, and in the night he disappeared. His age was near 12 years. He was named Victor. **Jean Marc Gaspard Itard** (physician) took him under his care and worked with him over 2 years. He was using a combination of food rewards and physical punishments in order to learn some basic signs, but he never learned to speak. He believed, that main reason for impossibility for communication is the language barrier. **Oxana Malaya** – in 1994 an 8-year-old girl was found in the Ukraine. She was running on all fours legs and barking, roaming with a pack of wild dogs. The girl was living in the woods near her childhood home. Psychologist Fry examined her IQ, by Wechsler test for intelligence, similar to IQ. This test gives an impression for her intelligence age: she was 23 when was examined and according to Wechsler test her intelligence and cognitive abilities were at the age of 5-years. Today she lives at an adult “therapeutic community”.

The tales of these children – many researchers believe that there is a period of childhood development when kids need to hear languages so that they can appreciate how it is used to coordinate interactions. The critical period for learning language might end at the age of five or it might end around the time someone hits puberty – the exact details have been a topic of debate among psychologist.

In modern culture is a pretty popular type – there is a Mowgli, Tarzan, and also Princess Mononoke and Splash. There are ancient examples like Enkidu in the Epic of Gilgamesh, from before a time that we even had the term. The real life examples of these stories are often sad and tragic.

“The Forbidden Experiment”

In American literary scholar Roger Shattuck, because the exceptional deprivation of ordinary human contact it requires. Similar experiment on non-human primates that were putting in absolute social isolation or deprivation is a predisposition for psychosis.

Montesquien wrote: *“A prince could do a beautiful experiment. Raise of 4 children like animals, with goats or with deaf-mute nurses. They would make a language for themselves. Examine this language. See nature in itself, and feed from the prejudices of education; learn from them, after they are instructed, what they had thought; exercise their mind by giving them all the things necessary to invent; finally, write the history of the experiment”*. Historically this natural forbidden experiment has invariably failed to deliver.

Modern researchers think that when a parent touches their children, it activates necessary neurotransmitters and other chemicals in their brain that are responsible for the normal development of speech and social interaction when they are older. Here we could make a comparison with the neglected child, that lived without the mother’s embrace, kiss, and speech. Also it could explain the mental retardation in children living in institutions, where nobody cares for their intellectual development.

Ian Harrington in 2005 in his laboratory by psychophysical techniques to examine auditory perception. By their study they learned how the brain makes normal auditory perceptions possible their function (e.g. hearing one sound entirely in the left ear followed after delay by a second in the right ear). His students (**Bychowski, Thamilavel and Gillespie**) in 2006 tried to establish the relationship between psychological experience and its underlying biological based. Their principle is that the things that the organisms do are no exception for humans. So they would like to understand human behavior and how the brain works. For example the musical distortions (e.g. tritone or “Devil’s interval”) affect the emotional state of the listener, and they established changes in the activity of EEG. The other experiment was done with students that were meditated 10 weeks. They studied empathy too, but more obvious were the results by electrodermal activity.

The experimental psychology

The experimental psychology developed in the 19th Century. The progress in the experimental psychology gave various instruments of psychologists to understand the psychophysiological mechanisms of perceptions. Psychophysics described the relationships between the physical qualities of sensory input and perception. The mechanisms of perceptions could be understood easily by the sensory neuroscience.

Trujillo LT , Peterson MA, Kaszniak AW, Allen JJ. (2005) – by the use of multichannel EEG studied the neural synchrony hypothesis. They established synchrony differences between face and non-face perceptions depend upon frequency selection and recording reference. Optimal selection of these parameters abolish differential synchrony between conditions. Neural synchrony is presented not just for face percepts for upright stimuli, but also for non-face percepts achieved for inverted/scrambled Moony stimuli.

SENSOR DEPRIVATION.

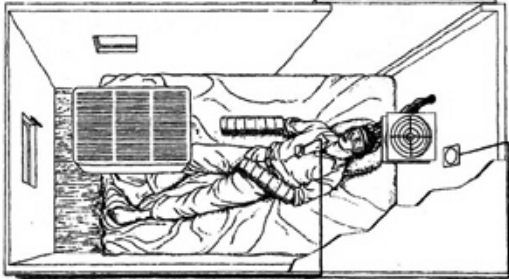
DONALD HEBB’S EXPERIMENT

Chamber REST

In chamber REST, subjects lie on a bed in a completely dark and sound reducing (on average, 80 dB) room for up to 24 hours. Their movement is restricted by the experimental instructions, but not by any mechanical restraints. Food, drink and toilet facilities are provided in the room and are at the discretion of the tester. Subjects are allowed to leave the room before the 24 hours are complete; however, fewer than 10% actually do.

- Hebb’s chamber (1961). There was no light, no smell, no taste, no nose, they could not touch anything. They offered to 20 students to spend in this chamber about 12 hours for \$20.
- Their physical needs (feeding, drinking, urine, excrements) were done by special systems.

- When the experiment finished some of them had various psychiatric disturbances as:
 - Hallucinations;
 - Paranoid ideas;
 - Cognitive deficit;
 - Depersonalization;
 - Derealization.
- No of them wanted this experience to be repeated and prefer to work 12 hours as a loader for \$12.



Reading about these we could put the question about s. c. “Social Isolation”. We can think about wild animals that were cultivated in zoo-park. What will happen with them if we decided to free them and to put in their natural environment and to return them to their Society. You must be sure that it is not possible to live there and it is not possible for them to survive.

Experimentally-induced hallucinations

Visual hallucinations - Sometimes internal imagery can be connected under the influence of external stimuli to our sensory, when sharing neural pathways, or if indistinct stimulus is perceived and manipulated to match one’s expectations or beliefs, especially about the environment. This can result in a hallucination, and this effect provoked an optical illusions.

<p>Pathophysiologic mechanisms for complex visual hallucinations</p>	<ul style="list-style-type: none"> • To produce irritation of cortical centers responsible for visual processing (e.g., seizure activity). The irritation of the primary visual cortex causes simple elementary visual hallucinations. • Lesions cause deafferentation of the visual system may lead to cortical release phenomenon, which includes visual hallucination. • The reticular activating system, which has been linked to the genesis of visual hallucinations. • Prolonged visual deprivation may cause visual hallucinations (example – 13 healthy persons were blindfolded for 5 days and 10 of them reported for visual hallucinations.
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<p>SENSOR DEPRIVATION: Can persons live without their ordinary surround? What will happen with a person who is deprived from his ordinary perceptions?</p>	<p>SENSOR DEPRIVATION</p> <ul style="list-style-type: none"> • Can everybody be a Cosmonaut? • no noise – music, television, • Cosmos – for persons that are sanded in Cosmonaut • no smell – aromatic sprayer (pulverizer) • no touch – different things • no contact – television • Cave – speleologist • Water carries – special cameras
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Biological perspective in hallucinations:

There are many different causes for visual hallucinations that have been classed as:

- psychophysiological - a disturbance of brain structure;
- psychobiochemical (a disturbance of neurotransmitters);
- psychodynamic (an emergence of the unconscious into consciousness);
- psychological (e.g., meaningful experiences consciousness); this is also the case in Alzheimer’s disease. Numerous disorders can involve visual hallucinations, ranging from psychotic disorders to dementia to migraine, but experiencing visual hallucinations does not in itself mean that there is necessarily a disorder. Visual hallucinations are associated with organic disorders of the brain and with drug- and alcohol-related illness, psychiatric disorder as schizophrenia.

Neuroanatomical correlates

By the new technology as MRI (Magnetic Resonance Imaging), fMRI (Functional magnetic resonance imaging), rTMS (repetitive transcranial magnetic stimulation) were used to explore the pathophysiology of auditory/verbal hallucinations. The scientists established that there were **“lower levels of hallucination-related activation in Broca’s area strongly predicted greater rate of response to left temporoparietal rTMS.”** By the method of fMRIs was found why hallucinations happen in the brain, by understanding emotions and cognition and how they can prompt physical reactions that can help result in a hallucination. It suggests the theory that “motivations in the body and mind can drive us to certain behaviors that we act in, such as survival instinct and intuition” and that they can work in a hand-in-hand-like fashion. It can also be viewed as a symbolic “homeostasis” that can have adverse effects by having these hallucinations and/or mental illnesses.

The amygdala has also been seen to relate to this finding by contributing a “declarative judgement of emotional salience” as well as affecting both “efferent and afferent representational levels of affective autonomic responses in the brain”

Focal epilepsy

Visual hallucinations due to focal seizures differ depending on the region of the brain where the seizure occurs. For example, **visual hallucinations during occipital lobe seizures are typically visions of brightly colored, geometric shapes that may move across the visual field, multiply, or form concentric rings and generally persist from a few seconds to a few minutes.**

Temporal lobe seizures, on the other hand, can produce complex visual hallucinations of people, scenes, animals, and more as well as distortions of **visual perception**. Complex hallucinations may appear real or unreal, may or may not be distorted with respect to size, and may seem disturbing or affable, among other variables. One rare but notable type of hallucination is **heautoscopy**, a hallucination of a mirror image of one's self. These "other selves" may be perfectly still or performing complex tasks, may be an image of a younger self or the present self, and tend to be only briefly present. Complex hallucinations are a relatively uncommon finding in temporal lobe epilepsy patients. Rarely, they may occur during occipital focal seizures or in **parietal lobe** seizures. Distortions in visual perception during a temporal lobe seizure may include size distortion (**micropsia** or **macropsia**), distorted perception of movement (where moving objects may appear to be moving very slowly or to be perfectly still), a sense that surfaces such as ceilings and even entire horizons are moving farther away in a fashion similar to the **dolly zoom effect**, and other illusions.

Pathophysiological mechanisms

There are symptoms that are mechanism-based that are associated with hallucinations. These include superficial pressure and stabbing pain. Others include a burning-like sensation or electric shock feeling. Human studies of these symptoms remain mostly unclear unlike similar studies in animals.

Some phenomenon

Hysterical anesthesia – patients with hysterical anesthesia have no sense for pain. One can prick this patient with a needle and they would not feel any pain, even no bleeding appeared. Such elements could be noticed among patients with hysterical disorder. Such anesthetic places of the body were described in the Middle ages of Western Europe, fire-dancers in Bulgaria, Shamans in Asia, and patients during hypnotic séance.

Fire-dancing (fire-dancers) is a typical ancient Bulgarian custom

It is a folk ritual celebrated on May 21 in Rodopa and Strandzha mountains. It is a Christian holiday of Sts. Constatine and Helen. The fire dancers believe that the two saints protect them. They are dressed with special costumes. All people from the village prepared for this fest for a long period of time – about a month before the fest. One of the dancers is a leader – he/she begin to dance on the fire and pronounced some strange sounds (klik-k lak-klu). The other fire-dancers followed her and began to play on the fire. All of them were holding their icons and stepped quickly on the hot coals.



FIRE-DANCINGN (film).htm

Psycho–patho-physiological mechanisms of fire-dancers (by Emanuil Sharankov, 1947).

- Temperature is about 800 degree;
- The skin of the feet is not rough and grow fat, no changes were found on feet skin;
- The vessels and capillary tube vessels and the hot coal;
- The dancers took this hot coals with their hands – no signs of burn.

Inquisition

In the Middle ages in Europe some persons, that were declared for witches had no sensation on some places of the body. They were accused that had contacts with the Devil and were punished by Inquisition – they were burned out.

The period of Inquisition was between 14-18 century and was characterized with terrible cruelty: some persons declared as devils or switchers were burned out. Some of them were monks in big monasteries (male/female): Toulus, Estell, Saragossa, Savoua were burned 400 women; Dominicans burned about 1000 people each year. In Germany was the same; In France, Karl IX killed more than 300 000 females because they were declared for “Witches”.

The early church was always both skeptical about witches and disapproving of any effort to practice it in Western Germany, France, Italy, Spain, England. Flanders by 12th century all the machinery of the inquisition had been used. All the mentally ill were considered witches. 400 “Witches” were burned in 1577 in Toulouse (France). Some of them were psychotic – their descriptions spoke of hallucinations, delusions, or identified with the “devil” and described “devil’s marks”, they described his face, horns, smell.



The period of necromancy in Western Europe begins with Jeane d’Ark. There are many hypothesis about her personality, but still no one of them gives us full information about her. It was documented that she had hallucinations (visual and verbal) and she believed them and was sure that she would save France. If s. o. begins to speak that listened the voices of God and some other saints according to psychiatrists it could be coursed by various psychiatric disturbances – as schizophrenia.

According to Russian scientist Efroimson, **Jeane d’Ark suffered by Morris syndrome** – it is a rare gynaecological disease, known as the syndrome of testicular feminization in male (pseudohermaphrodites). Testicular feminization was the name given to a syndrome found in individuals with female external genitalia and breast development, absent pubic and axillary hair, absent uterus, and intra-abdominal or inguinal testes. It is an X-linked recessive disorder related to an absence of androgen receptors, primary amenorrhea, and high levels of testosterone.

This syndrome is supported by several facts:

- When she was born her sexuality was disputed – the hearings were that she was a boy, because there was a deformation of her penis.
- Even she was very handsome, with long black hair and blue eyes, she had no wish to marry or to have any sexual contacts with boys, whereas the girls of her age in that period of time were married and had at least 2 children before the age of 18;
- Her parents troubled when a boy from the neighbour village wanted to marry off her, and they were very satisfied when the engagement was disturbed;
- She never weared frocks and overskirts and prefered to be dressed with trousers, even when she went to pray in the church. She could dressed and undressed in front of young males and never feel shame and any sexual libido.
- She had no menstrual cycle;
- She was taller and stronger, than her coevat.

- She liked battle hours and nice weapon.
- Her hardiness was remarkable. She could wear and sleep for 3 days with the knightly armour that were very heavy (about 25-30 kilograms). She was very religious and when she was a little child almost every day she went to the church that was in the neighbour village to pray. She was always dressed with trousers.
- The Inquisition could not accuse her of having contact with the Devil, as the medical expectation established that she was virginal.



Jeane d'Ark (06.01.1412-1431)

Her parents noticed that her behavior became strange at pubertal age. For the 1st time, when she was 13-years old, she often received trances, and when she recovered after a trance she said, that she was fated to save France from England. During the trances she had strange visual hallucinations. She saw Saint Margarita, Saint Katherine and Archangel Michael. She shared with her priest that she listened the voice of a young man, who told her, that she has a special mission to save France. She mentioned that the voice appeared when the bell was knelling. She had visual, auditory, olfactory and taste hallucinations. Their description looked like an aura in Epilepsy. Hallucinations could be provoked by hormonal disbalance of their Morris syndrome.

She believed that she had a special mission that was sent by GOD to help French people and to save them from England.

Some psychological characteristics of Jeanne d'Arc: eccentricity, madly courage, remarkable hardiness and strength, that is not typical for females, arrogance, male behavior, anxiety and necessities to share it with her priest.

We can mark the next syndromes:	Diagnoses
<ol style="list-style-type: none"> 1. Hallucination and pseudo-hallucination; 2. Paraphrenic syndrome; 3. Syndrome of Psychic automatism; 4. Altruistic (Messianism) syndrome; 5. Oneirophrenic syndrome; 6. Organic syndrome (Epilepsy and trans states). 	<ol style="list-style-type: none"> 1. Organic psychosis connected with hormonal disbalance; 2. Temporal Epilepsy; 3. Dissociative disorder; 4. Personality disorder; 5. Schizophrenia. Paraphrenic syndrome.

- What do You think about this phenomenon?
- Is she a normal person?
- What can we say about her hallucinations?
- Can You make a correlation with another national hero or famous person that had disturbances of their perceptions?
- Can we think that she had ESP and the voices are coming from another dimension?

Kandinsky-Clerambault complex Kandinsky, Clerambault syndrome.

1. A psychotic syndrome that may be associated with any clinical picture in which the patient feels that their mind is controlled by another person or by an outside power.
2. A condition in which activity is carried out without conscious knowledge of the part of the subject.
3. The patient is as an automat and he is controlled by other persons, various machines, or God;
4. Visual and auditory pseudo-hallucinations.

Victor Kandinsky was a Russian physician, born in Siberia. He began to experiment mood swings and hallucinations. Kandinsky performed self-diagnosis, and he referred to his mental condition as primary paranoid psychosis (schizophrenia). In 1885 Kandinsky published a book written in German on "pseudo-hallucinations" in which he described and details hallucinations largely based on his personal experiences. In September 1889, feeling that his psychotic symptoms were returning, he took his own life by taking an overdose of morphine. He died as a patient in the institution he had formerly run as the medical superintendent. In his monograph published in 1890, he described a condition which involved being alienated from one's personal mental processes, combined with delusions of being physically and mentally influenced by external forces. The syndrome he described is now known as **Kandinsky-Clérambault syndrome**, named along with French psychiatrist Clérambault.



Kandinsky (1849-1889)

Kandinsky-Clerambault syndrome (Clerambault-Kandinsky syndrome in France) and Syndrome of Psychic automatism in Anglo-Saxon literature.

<p>Kandinsky-Clerambault syndrome is characterized with:</p>	<ol style="list-style-type: none"> 1. A psychotic syndrome that may be associated with any clinical picture in which the patient feels that their mind is controlled by other person or by an outside power. 2. A condition in which activity is carried out without conscious knowledge of the part of the subject. 3. The patient is as an automat and he is controlled by other persons, various machines, or God; 4. Visual and auditory pseudo-hallucinations.
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Case of a patient with Kandinsky-Clerambault syndrome: Jane is 56 years old. She is with a diabetes mellitus. She worked as a teacher in literature, but now is in pension. Because of her serious somatic illness she had no strength. Her husband was a teacher too and suffered from affective disorder. One day he visited me and was very excited. He tolled me: “Doctor, can you imagine, my wife has a contact with Ogi a person from a planet Sirius. Ogi gave her strength and now she could jump and make gymnastic. She pleased Ogi to help me, and she really helped me. I feel better and have more strength. My blood pressure is normalized and my mood is better. Please come to see her. Ogi makes miraculous things with my wife.”

When I visited Jane, she was very excited and happy. She spoke loudly and very exalted about Ogi. She was very happy that she had the chance to contact with a person from the planet Sirius, and that Ogi choose her to send the message to the persons of the Earth.

“Doctor, can you imagine now I have no pains, I could jump like a child and I am very happy. Ogi is a charming creature from Sirius. Look at me now” She began to run round the room, she jumped, she make various gymnastic exercise. “Ogi can you learn me to draw? She sent to me various messages as: “People on the Earth must be good and peaceable, they must help each other. Now do you want to see some of my pencil-drawings?” She gave me about 30 drawings and explained me that they were done by Ogi. “Do you want to see? First I must ask Ogi is she will agree to draw pictures in front of you. Wait a minute.” “Ogi, will you draw pictures now?” Ogi tolled me “Yes” I must take my chemical. Now she hits me and it is a sign that she is ready.” I asked her what she will draw on the paper and the answer was: I do not know. Ogi moves my hand and she knows what to draw. After several minutes she began to sketch on the paper and after 20 minutes she finished (see the picture).



Seven persons of the block tried to make contact with Ogi too. They began to draw under her command,, but 30 days later they stopped drawing as the pictures were thoughtless and they did not want any more to lose time for foolish things. One of her private schoolgirl in literature began to write rime poems. She was in rapture over her poems even they were very foolish bur well rimed. After a month this girl could not write any poems any more. All other persons that were influenced by her stopped t any contact with Ogi, but Jane was hospitalized in a psychiatric department many times.

Her diagnosis was: Schizophrenia. Kandinsky-Clerambault Syndrome.

What do you think about ESP (Extrasensory perception)

Three varieties of ESP:

- Telepathy;
- Clairvoyance;
- Precognition.

- **Telepathy** – or mind to mind communication, one person sends thoughts to another, or perceiving other thoughts. Telepathy and clairvoyance are two modalities of this single surmised basic function – extrasensory perception of the mental activities of another person.
- **Clairvoyance** - to predict a given event,
- **Precognition** – to prognosticate the future and specially about the fate of a famous leader, the fate of some countries and s.o.

DEFINITION: ESP is cognition that is paranormal, or a response to an external event that has not presented itself to any of the five known senses.

What do you think about some phenomenon persons?



Arthur Koestler (1905-1983)

He was born in Budapest, lived in Hungary and London. He was novelist, essayist, journalist.

In 1983 the famous novelist **left more than \$700,000 fund for a British Professorship in parapsychology.**

“Today’s skeptical scientists resemble the Italian philosophers who refused to look at Jupiter’s moon through Galileo’s telescope – because they “knew” that such moons does not exist.

- In 1979 – Washington University’s a new para-psychological laboratory, offering to demonstrate their “psychic powers”.
- “bats” – the parapsychologists a phenomena with the bats=thus before their echolocation was discovered many people attributed bats ability to avoid wires in complete darkness. When the bats were blinded, when their noses were sealed, when their wings were coated, they still could navigated so what other explanation could there be but ESP.
- Scepticism about ESP some times blinds people to the truth.
- Charles Linberg’s baby was murdered before the body was discovered. Two Harvard psychologists pleased invited the public to send in their dream report where is the child.
- Only 4 of 1300 reported that the child was dead.



As Nostradamus – a 16th century, French scientists explained ambiguous prophecies could not possibly be understood till they were interpreted after the event happened.

His precognitions were used by many political leaders in order to increase their rating and to receive the position they want in the society. His predictions were very symbolic. For instance when London was attacked by German is given in a short verse: “Iron birds will float in the sky over the big town of the little island of the old continent. People will be under the ground, where they would cook and knit”.

What do you think about Vanga’s ability to predict some future events?

Please show with a line the correct answer of the mentioned cases!

Hallucinations		Peter is a student and has a meeting with his lovely girl. She has a red coat, red shoes and red umbrella. It was raining. Their meeting was at the station at 6 o'clock PM. Peter saw a female with a red coat, red shoes and red umbrella. He was very happy, ran quickly towards her and embraced her. When the female returned he was astonished, that in front of him was 48 years old female.
Illusion		Since 1 month Ivan heard voices in his head. The voices told him, that his mother puts poison in his coffee. One day he pushed the cup and told her: "Why do You put poison in my coffee!"
		Anna has a little child, 4 years old. One day she noticed that her daughter talked with her toys and said to her mother that the toy-dog moves his ears and his eyes and speaks to her. Anna was frightened, ring up the psychiatrist and told him, that her daughter has hallucinations. What do you think?
Eidetic imagine		Mery is a student and one day she made suicide by jumping from the balcony. She was hospitalized in the Department of Orthopedics. When the doctor asked why she jumped from the balcony the answer was: "A terrible man was in the room and ordered me to jump. He explained me, that if I do not fulfill his command he will kill me".

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2. Volition

The question of how we can voluntarily control our behaviour dates back to the beginnings of scientific psychology. Till now there is no clear concept of volition or the will. The psychologists have not the intuitive idea that could make a characteristic of the will and voluntary behavior. Most modern conceptions of volition address it as a process of conscious action control which becomes automatic (e.g. see Heckhausen and Kuhl; Gollwitzer; Boekaerts and Corno). Some authors make differences between willpower and motivation, whereas for others (Kurts Lewin) volition is as a synonym for willpower.

DEFINITION: Volition or will is the cognitive process by which an individual decides on and commits to a particular of action. It is defined as purposive striving and is one of the primary human psychological functions. Others include affection (affect or feeling), motivation (goals and expectations), and cognition (thinking). Volitional processes can be applied consciously or they can be automated habits over time.

The scientist determined several stages of volition as:

1. the act of exercising the will of one's own volition;
2. the faculty or capability of conscious choice, decision, and intention the will;
3. the resulting choice or resolution;
4. philosophy an act of will as distinguished from the physical movement it intends to bring about Derived Forms volitional, volitionaly, adjective volitionally.

Most of the psychologists determined 3 main stages of volition (see fig. 1).

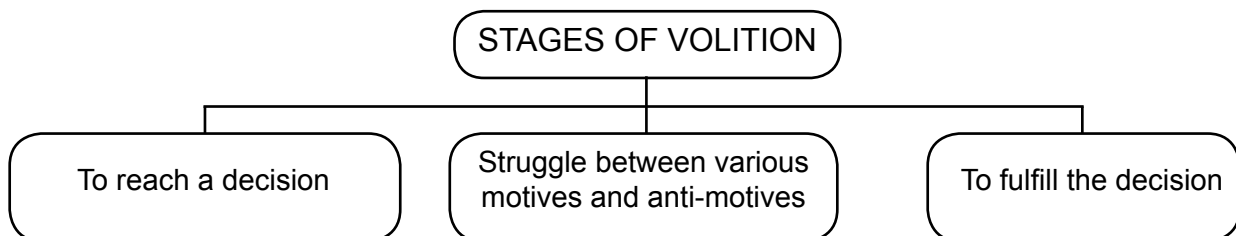


Fig. 1 Stages of Volition

Other psychologists make another determination of willpower (volition):

- **immanent volition** – when a person makes up his or her mind to do a thing, that state is termed;
- **emanate, executive, or imperative volition** - when we put forth any particular act of choice;
- **predominant volition** – when an immanent or settled state of choice controls or governs a series of actions;
- **subordinate volitions** – are particular acts of choice which carry into effect the object sought for by the governing or predominant volition.

According to **Gary Kielhofner's** "*Model of Human Occupation*", volition is one of the three sub-systems that act on human behavior. Within this model, volition refers to a person's values, interests and self-efficacy (personal causation) about personal performance.

“Eight stages of volition”
according to Adano Ley (Swami Nitti-Gritti)

The First stage – “Evolutional will power”

Adano explained, “To be a single cell in the womb, the mother has to crave it so. This is the ion that determines the direction it will go through its own perpetual motion. Volition stands for voting ion. This is when the sperm meets the ovum. It is evolutionary volition – obedience to the rules is primary.”

The Second stage – “Automatic will power” or “restoration of breath”

Adano explained, “Autonomic will is birth with breath. It is an automatic function of the cell to breathe. Automatic will power is reinforced by environmental power in the form of the breast.”

The third stage – “Unthinking will power” or “craving the power to live.”

Adano explained, “Craving to survive is the cell’s own integrity.”

The fourth stage – “Blind will power” or “blind day”

Adano explained, “This is will power with no sense of direction. Seeking to exercise its sovereignty, mistakes will be made that will have to be accounted for. An example is the child who rebels against his parents.”

The fifth stage – “Thinking will power” (“discriminational volition”)

Adano explained, “‘I’m not going to make a mistake any more’ is the functional statement of thinking will power. The sorting out of experiences takes place at this stage. 99 percent of us die in this phase of our existence, or then we may meet a person who has the ‘luck of the Irish,’ or “dynamic will power.”

The sixth stage – “Dynamic will power” (or “charismatic volition that only attracts beneficial experiences.”)

Adano explained, “This volition attracts only what is beneficial. This person seems to have charisma, a sense of centeredness. Dynamic refers to mistakes made from one’s own attitude.”

The seventh stage – “Divine will power” (or “environmental volition”, “sympathetic resonance”)

Adano explained, “One now has to forego dynamic will power to accept the totalness of one’s environment – ‘not my will, but thine.’ You know you’re always in the middle, making life by photo-finish. When Jesus said, ‘Remove this cup,’ it represented the play between dynamic will power and divine will power”. Divine will power is what today’s chronobiologists call “entrainment,” being syntonic with the environment. Entrainment (but not addiction) is the underlying basis of Solar Nutrition.

The eighth and final stage – “Return to the womb”

Adano explained, “You just don’t appear in other realms [brain wave accelerations]. You’re born into them just like you are on Earth.”

Adano began referring to this as “cosmic vacation” in the 1980s. According to Adano “Volition equals desire times energy times oxygen is divided by oxygen.” Our e-books & e-booklets are available at Wellness-Wagon.com Atom@Wellness-Wagon.com
 Facebook: Atom’s School of Self-Healing at Wellness-Wagon.com

What do you think about free volition and do We Have Free Wolition?

"If the moon, in the act of completing its eternal way around the earth, were gifted with self-consciousness, it would feel thoroughly convinced that it was travelling its way of its own accord on the strength of a resolution taken once and for all. So would a Being, endowed with higher insight and more perfect intelligence, watching man and his doings, smile about man's illusion that he was acting according to his own free will."

Albert Einstein: *On Free Will*

J. Bricklin thinks that *free will does not exist*, nor can it be explained, outside the confines of subjective experience.

B. Libet (2000) had done an experimental study to this question. Freely voluntary acts are preceded by a specific electrical change in the brain (the "readiness potential", RP) that begins 550 ms before the act. Human subjects became aware of intention to act 350-400 ms after RP starts, but 200 ms. before the motor act. The volitional process is therefore initiated unconsciously. But the conscious function could still control the outcome; it can forbid the act. Free will is therefore not excluded. These findings put constraints on views of how free will may operate; it would not initiate a voluntary act but it could control performance of the act. The findings also affect views of guilt and responsibility. But the deeper question still remains: Are freely voluntary acts subject to macro-deterministic laws or can they appear without such constraints, non-determined by natural laws and "truly free"? Some of the neuroscientific results put a light on the neural circuits mediating behaviors that could be identified as related to will and volition. A part of the researchers underlined the views about free will, but till now the results are not adequate.

G. Gomes supposed that the readiness potential was found to precede voluntary acts by about half a second or more. **Kornhuber (1984)** discussed the readiness potential in terms of volition, arguing that it is not the manifestation of an attentional processes. **Libet et al. (1985; 1993)** discussed it in relation to consciousness and to free will. Libet puts the questions: Are voluntary acts initiated by a conscious decision to act? Are the physiological facts compatible with the belief that free will determines our voluntary acts? Gomes make a commentary about the role of consciousness in voluntary action? In his paper he discussed these questions and the answers that Libet gave to them.

The dominant folk theory of free will is the presumption that conscious intentions, sometimes are related to additional "voluntary" actions. This model, like the most of folk theories, deformed perception and cognition to highlight phenomena and interpretations that are consistent with itself, and pathology or render unnoticeable those that are not.

Modern papers on the role of volition, include discussions of impulse control and education. **Corno's model** ties volition to the processes of self-regulated learning. The role of volition is very important on the education.

It is widely accepted in science that the universe is a closed deterministic system in which everything could be explained by physical reason. Our experience shows that the freedom to choose between alternatives presented to us – "we" are in the driving seat.

Psychophysiology of Volition

Functional Anatomy of Volition

Spence and Frith examined the functional anatomy of volition by modern brain imaging techniques, in connection with neuropsychological data derived from human and non-human primates using other methodologies. Many brain regions contributed to the performance of consciously chosen, or “willed”, actions. Very important is ***dorsolateral prefrontal cortex, together with via cortico-subcortical and cortico-cortical circuits***. That aspect of free will which is concerned with the voluntary selection of one action rather than another critically depends upon the normal functioning of dorsolateral prefrontal cortex and associated brain regions. Some disorders as Parkinsonism could be associated with these disturbances. Brain imaging has allowed us to gain some access to the pathophysiology of these conditions in living patients. The exercise and experience of free will depends upon neural mechanisms located in prefrontal cortex and associated brain systems.

The Primate Basal Ganglia and the Voluntary Control of Behaviour

Schultz W summarized current experiments on neuronal mechanisms underlying goal-directed behaviour by investigation of two basic processes, the internally triggered initiation of movement and the processing of reward information. Single neurons in the striatum (caudate nucleus, putamen and ventral striatum) were activated a few seconds before self-initiated movements in the absence of external triggering stimuli. ***Similar activations were observed in the closely connected cortical supplementary motor area, suggesting that these activations might evolve through build up in fronto-basal ganglia loops***. They could be associated with conscious states directed at movements and their outcomes. As a second result, neurons in the striatum were activated in relation to the expectation and detection of rewards. Since rewards pass these activity might reflect the evaluation of outcome before the end of the behavioural reaction. ***Thus neurons in the basal ganglia are involved in individual components of goal-directed behaviour***.

Psycho-physical interactionism of Volition

Physics support or reject the ***idea of psycho-physical interactionism, the view that mind and matter are two reciprocity acting domains*** (L. Berkeley). Thus it has been held against interactionism that it implies violations of the laws of physics, notably the law of energy conservation. They studied the meaning of conservation laws in physics. They understood that there is no valid argument against the interactionist theory. In defence of interactionism it has been argued that mind can act on matter through an apparent loophole in physical determinism, without violating physical laws. He thinks that this argument is fallacious. The conclusion is that the indeterminism of quantum mechanics cannot be the physical correlate of free will; if there is a reason effective non-material mind, then the behaviour of matter cannot be fully governed by physical laws.

Mind-Brain Interaction and Violation of Physical Laws

If mind is not a part of the physical universe but is able to influence brain events, then violations of physical laws should occur at points of such mental influence (**D.L. Wilson**). The current knowledge studied the functions and the disturbances of the nervous system a variety of influences that could produce action potentials is considered, including ***the direct opening of sodium channels in membranes, the triggering of release of neurotransmitter at synapses, the opening of postsynaptic, ligandgated channels, and the control of neuro-modulation***. It is concluded that the damage of fundamental physical laws, such as energy conservation, would occur were a non-physical mind able to influence brain and behavior.

2. DISTURBANCES OF VOLITION

The disturbances of the volition could be divided into quantitative and quality. Some of the quantitative disturbances as hypobulia and hyperbulia could be as a normal state. Some persons are with exceptionally volitional activity, whereas others have poor will and poor activity. When we evaluate the volition of a person we must have in mind his usual volition and to estimate if it is increased or decreased. If s. o. is very tired after hard work his will could be decrease – for instance the state of the students after heavy examinations. When some body has a serious concurs, that is very important for his future career, and he very much wanted to win this position, because of his ambitions he could mobilize and for a period of time he could work very hard. So you see that for a short period of time he could be with hypobulia or hyperbulia, but when the tension is over their volition will return in their normal state, with out the necessity of a psychological or psychiatric consultation.

The quantitative disturbances (see fig. 2). One can see that hyperbulia and hypobulia could be a normal state for a short period of time of the healthy persons and it could be spread among psychiatric patients (schizophrenic disorders, neurotic disorders, affective disorders, organic and somatic disturbances).

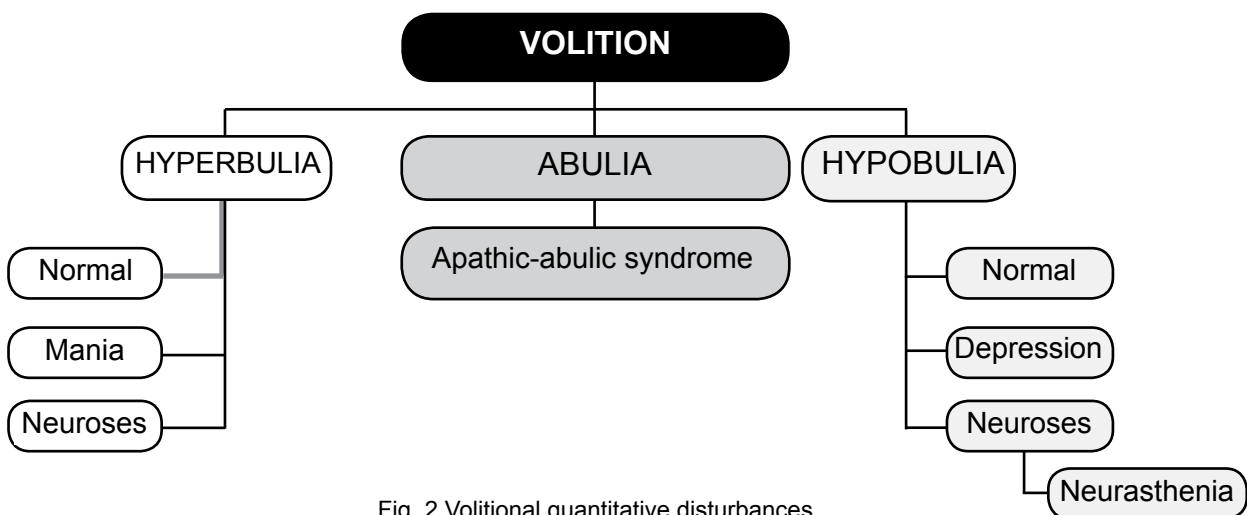


Fig. 2 Volitional quantitative disturbances

We pay a special attention of **aboulia** or **abulia** (from the Greek βουλή). It has been known to clinicians since 1838. It has been described as a loss of drive, loss of behavior and speech output, expression, slowing and prolonged speech latency, reduction of spontaneous thought content and initiative. The clinical features associated with aboulia are difficulty in initiating purposeful movements, lack of spontaneous movement, reduced spontaneous speech, increased response-time to queries, passivity, reduced emotional responsiveness and spontaneity, reduced social interactions, reduced interest in usual pastimes.

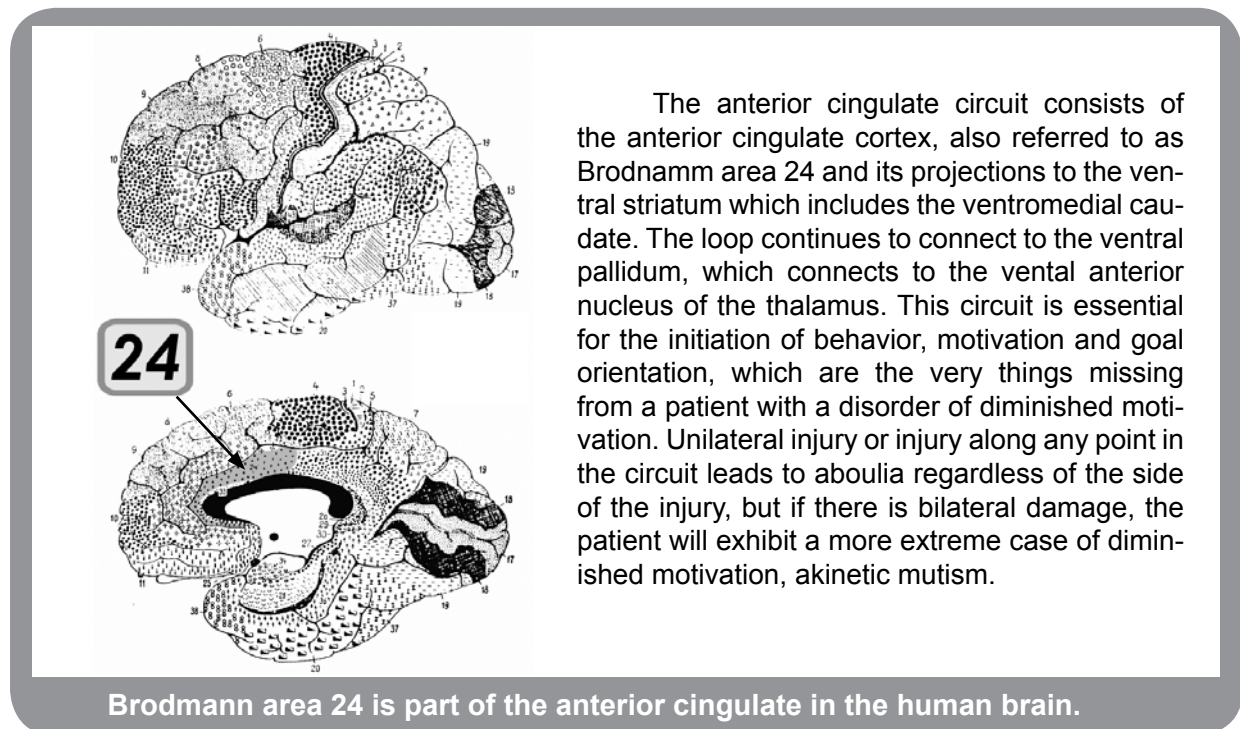
Diagnosis for aboulia can be quite difficult because it falls between two other disorders of diminished motivation, and one could easily see an extreme case of aboulia as akinetic mutism or a lesser case of aboulia as apathy and therefore, not treat the patient appropriately. The best way to diagnose aboulia is through clinical observation of the patient as well as questioning of close relatives and loved ones to give the doctor a frame of reference with which they can compare the patient's new behavior to see if there is in fact a case of diminished motivation.

BRAIN DAMAGE - PSYCHOPHYSIOLOGY OF ABULIA

Abulia presents in many disease as: depression, schizophrenia, frontotemporal dementia, parkinsonism, progressive supranuclear palsy, traumatic brain damage, stroke. Going along with that, the prevalence of abulia increased from 14% in patients with a mild case Alzheimer's disease to 61% in patients with a severe case of Alzheimer's disease, which most likely developed over time as the patient got older.

Especially in patients with progressive abulia may result from a variety of brain damage which causes personality changes, as dement illnesses, trauma, or stroke (intracerebral hemorrhage), diffuse injury to the right hemisphere. In these cases abulia is combined with apathy, and the syndrome is known as "apathy-abulic syndrome". It is typical not only for patients with brain damage, but in chronic schizophrenia. Patients with apathy-aboulic syndrome are unable to act or make decisions independently. But we must not neglect the fact that still there is a debut about whether or not abulia is a sign, symptom, or syndrome.

Damage of the frontal lobe & the basal ganglia: The damage of these brain structures can interfere with an individual's ability to initiate speech, movement, and social interaction. It was established that about 5-67% of all patients with brain trauma and 13% of patients with lesions on their basal ganglia suffer from some form of diminished motivation. Abulia has also been associated with drug withdrawal (as stimulants, tranquilizers, narcotics) and alcohol abuse too. It may complicate rehabilitation when a stroke patient is uninterested in performing tasks I like walking despite being capable of doing so. It must be differentiated from apraxia.



Voss et al. (2011) found out increases in correlated activity between the hippocampus and other areas were associated with specific aspects of memory, suggesting that volitional control optimizes interactions among specialized neural systems via the hippocampus.

**When a brain injured patient has impairment in comprehending the movements necessary to perform a motor task despite not having any paralysis that prevents performing the task; that condition can also result in lack of initiation of activity.*

Damage to the capsular genu: A case study of two patients who suffered from acute confusional state and abulia was conducted to see if these symptoms were the result of an infarct in the capsular genu. Using clinical neuropsychological and MRI evaluations at baseline and one year later showed that the cognitive impairment was still there 1 year after the stroke. ***Cognitive and behavioral alterations due to a genu infarct are most likely because the thalamo-cortical projection fibers that originate from the ventral-anterior and medial-dorsal nuclei traverse the internal capsule genu. These tracts are part of a complex system of cortical and subcortical frontal circuits through which the flow of information from the entire cortex takes place before reaching the basal ganglia.*** Cognitive deterioration could have occurred through the genu infarcts affecting the inferior and anterior thalamic peduncles. The interesting thing about this case study was that the patients did not show any functional deficit at the follow-up one year after the stroke and were not depressed but did show diminished motivation.

This result supports the idea that abulia may exist independently of depression as its own syndrome.

In the human this area is known as ventral anterior cingulate area 24, and it refers to a subdivision of the cytoarchitecturally defined cingulate cortex region of cerebral cortex (area cingularis anterior ventralis). It occupies most of the anterior cingulate gyrus in an arc around the genu of corpus callosum. Its outside outer border corresponds to the cingulate sulcus.

Francis Crick, one of the discoverers of DNA, listed area 24 as the seat of free will because of its centrality in abulia and amotivational syndromes.

Cytoarchitecturally it is bounded internally by the pregenual area 33, externally by the dorsal anterior cingulate area 32, and caudally by the ventral posterior cingulate area 23 and the dorsal posterior cingulate area 31.

J. M Schwartz – Obsessive-compulsive disorder is a commonly occurring neuro-psychiatric condition characterized by bothersome intrusive thoughts and urges that frequently lead to repetitive dysfunctional behaviours such as excessive handwashing. There are well-documented alterations in cerebral function which appear to be closely related to the manifestation of these symptoms.

Alzheimer's disease: A lack of motivation has been reported in 25%-50% of patients with Alzheimer's disease. While depression is also common in patients with this disease, aboulia is not a mere symptom of depressions because more than half of the patients with Alzheimer's disease with aboulia do not suffer from depression. Several studies have shown that aboulia is most prevalent in cases of severe dementia which may result from reduced metabolic activity in the prefrontal regions of the brain. Patients with Alzheimer's disease and aboulia are significantly older than patients with Alzheimer's who do not lack motivation.

Acute caudate vascular lesions: It is well documented that the caudate nucleus is involved in degenerative diseases of the central nervous system such as Huntington disease. In a case study of 32 acute caudate stroke patients, 48% were found to be experiencing aboulia. Most of the cases where aboulia was present were when the patients had a left caudate infarct that extended into the putamen.

Apathic-abulic syndrome is typical for patients with chronic schizophrenic disorder? Patients are characterized with apathia, lifeless, inert, lethargic, willweaked, indifferent, passive. So there is no doubt that in schizophrenia there is a damage in brain structures.

The study of **Bender, J. et. al. (2013)** tried to identify neural correlate of schizophrenic patients – their specific deficit. They studied 14 patients with schizophrenia and 13 healthy persons by functional magnetic resonance imaging while performing volitional and visually guided saccades.

Brain activation during volitional saccades compared to visually guided saccades was increased in Schizophrenia in comparison with healthy persons in several areas: in some eye fields, the prefrontal cortex, the left middle temporal area.

In clinical practice quality disturbances of patients are of great importance.
They are divided into 2 main groups: stupor and excitement (see fig. 3).

Stupor is the word derives from the Latin stupor, meaning insensible.

Stupor is characterized with the lack of cognitive function and level of consciousness. The patients are not critical, almost unresponsive, and from time to time react to some stimuli as pain. They are rigid and mute and their reactions are decreased to external stimuli. As their eyes are opened and followed the surrounding objects, they look like conscious.

Stupor usually appears in infectious diseases, toxicity states, sever hypothermia, mental illness (schizophrenia, depression, shock, when s.o learns for the death of beloved person), tumor, serious stress events.

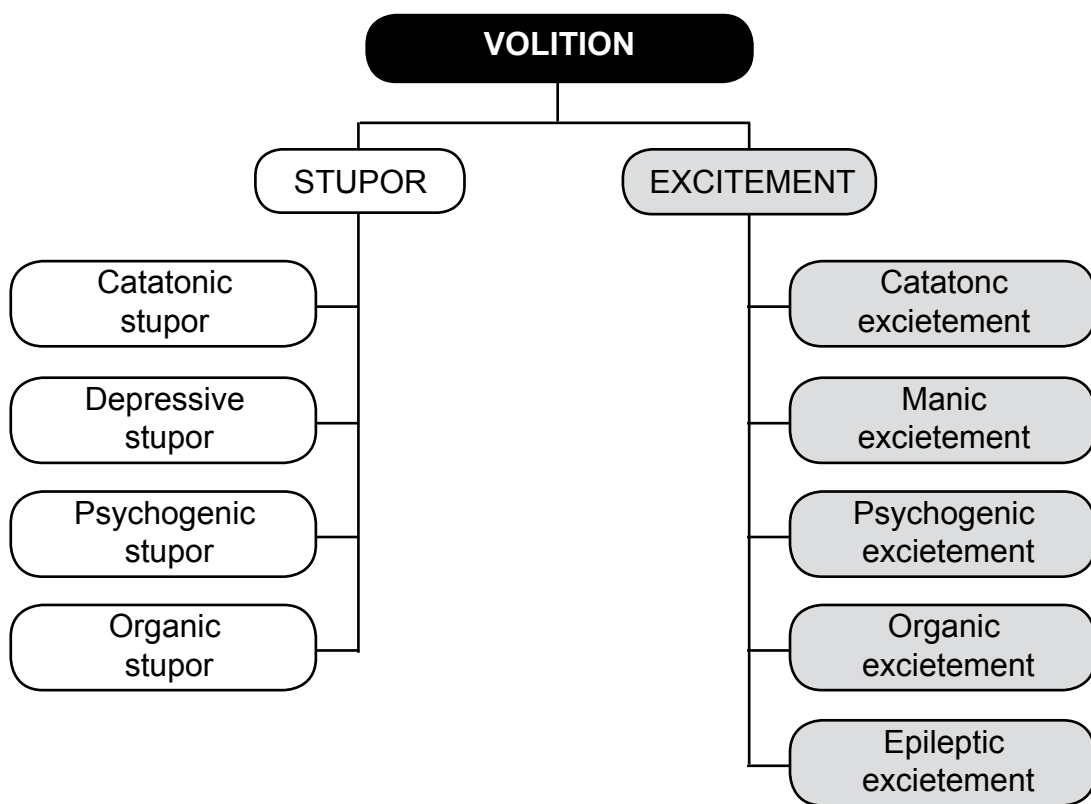


Fig. 3 Volitional qualitative disturbances

Excitement is a feeling of eager enthusiasm and interest : the state of being excited; exciting activity; a quality that causes feelings of eager enthusiasm : an exciting quality

Full definition of excitement – something that excites or rouses; the action of exciting: the state of being excited.

Catatonic disorders are a group of symptoms characterized by disturbances in motor (muscular movement) behavior that may have either a psychological or a physiological basis. The best-known of these symptoms is immobility, which is a rigid positioning of the body held for a considerable length of time. Patients diagnosed with a catatonic disorder may maintain their body position for hours, days, weeks or even months at a time.

Alternately, catatonic symptoms may look like agitated, purposeless movements that are seemingly abulia. (From Wikipedia, the free encyclopedia).

Stupor is a state in which the sensibilities are deadened or dazed and the subject has little or no appreciation of the nature of his surroundings. The term is commonly synonymous with unconsciousness, in an organic, not in a psychic sense. Catatonic stupor (schizophrenia) includes catalepsy & negativism.

Catatonic schizophrenia is characterized with:



Catatonia is a state of neurogenic motor immobility and behavioral abnormality manifested by stupor. It was first described by Karl Ludwig Kahlbaum in 1874 (in *Die Katatonie oder das Spannungsirresein; Catatonia or Tension Insanity*).

1. Physically immobile – the patient cannot speak or move. They may stare and hold their body in a fixed position. They appear to be unaware of their surroundings (catatonic stupor) – **embryo position of the body; face – masklike facies oleosa;**

2. Waxy flexibility – this is part of physical immobility. If the patient's arm, for example, is moved by someone else into a certain position, it remains in that position for hours or days;

3. Excessive mobility – the patient moves excitedly with what appears to have no specific or useful purpose. This may include pacing around energetically, walking in circles, making loud and unusual utterances.

4. Uncooperative – the patient may resist any attempt to move them. They may say absolutely nothing (not speak) and not respond to instructions.

5. Strange movements – the patient's posture may be unusual or inappropriate. There may be bizarre mannerisms and grimacing.

6. Unusual behavior – the patient may repeat words, follow a ritual/routine with obsession. He/she may be obsessed with lining things up in a specific way.

7. Echolalia (mimicking utterances) and/or **Echopraxia** (mimicking movements) – the patient may repeat something someone else has just said. There may be repetition of a movement or gesture made by another person.

Catatonic schizophrenia is a type (or subtype) of schizophrenia that includes extremes of behavior. At one end of the extreme the patient cannot speak, move or respond – there is a dramatic reduction in activity where virtually all movement stops, as in a catatonic stupor.

At the other end of the extreme they are overexcited or hyperactive, sometimes mimicking sounds (echolalia) or movements (echopraxia) around them - often referred to as catatonic excitement. Patients may also present other disturbances of movement - seemingly purposeless actions are performed repetitively (stereotypic behavior), sometimes to the exclusion of involvement in any creative or productive activity. A patient with catatonic schizophrenia may stay immobile for long periods, in positions we may think are extremely uncomfortable; they may resist attempts to reposition them. The individual may resist any attempt to change how he/she appears. Here we may mention of s.c. **symptom of airlift pillow**. If we pull away the pillow from his head we can notice that his head will stay in the air till the next day, even this position is very uncomfortable for the patient.

Subtypes

- **Stupor** is a motionless, apathetic state in which one is oblivious or does not react to external stimuli. Motor activity is nearly non-existent. Individuals in this state make little or no eye contact with others and may be mute and rigid. One might remain in one position for a long period of time, and then go directly to another position immediately after the first position.
- **Catatonic excitement** is a state of constant purposeless agitation and excitation. Individuals in this state are extremely hyperactive, although, as aforementioned, the activity seems to lack purpose. The individual may also experience delusions or hallucinations. It is commonly cited as one of the most dangerous mental states in psychiatry.
- **Malignant catatonia** is an acute onset of excitement, fever, autonomic instability, delirium and may be fatal. These patients are serious therapeutic problem. ECT (electro-convulsive therapy) is the only alternative for these patients.

According to the DSM-V, “Catatonia Associated with Another Mental Disorder (Catatonia Specifier)” is diagnosed if the clinical picture is dominated by at least three of the following:[9]

1. **stupor** (i.e., no psychomotor activity; not actively relating to environment)
2. **cataplexy** (i.e., passive induction of a posture held against gravity)
3. **waxy flexibility** (i.e., slight, even resistance to positioning by examiner)
4. **mutism** (i.e., no, or very little, verbal response [exclude if known aphasia])
5. **negativism** (i.e., opposition or no response to instructions or external stimuli)
6. **posturing** (i.e., spontaneous and active maintenance of a posture against gravity)
7. **mannerism** (i.e., odd, circumstantial caricature of normal actions)
8. **stereotypy** (i.e., repetitive, abnormally frequent, non-goal-directed movements)
9. **agitation**, not influenced by external stimuli
10. **grimacing**
11. **echolalia** (i.e., mimicking another’s speech)
12. **echopraxia** (i.e., mimicking another’s movements)

In the current *Diagnostic and Statistical Manual of Mental Disorders* published by the (DSM-5) catatonia is not recognized as a separate disorder, but is associated with psychiatric conditions such as schizophrenia (catatonic type), bipolar disorder, post-traumatic stress disorder, depression and other mental disorders, as well as drug abuse or overdose (or both). It may also be seen in many medical disorders including infections (such as encephalitis), autoimmune disorders, focal neurologic lesions (including strokes), metabolic disturbances, alcohol withdrawal and abrupt or overly rapid benzodiazepine withdrawal.

Chronobiological characteristic of catatonic stupor

At the end of the 19th century psychiatrists noticed inversion of the circadian rhythm of vigor in patients with catatonic stupor – these patients became active at midnight. The medical staff was recognized with this inversion of catatonic patients and fed them.

R. Nadjarov (1988) established inversion of the temperature rhythm in a patient with catatonic stupor. In 1994 F. Halberg & G. Cornelissen made a description of the circadian rhythm of rectal temperature in patient with catatonic stupor. In 1995 N. Madjirova, N. Petrova & N. Deltchev followed the temperature rhythm of catatonic patient. Because of the use of serious medications during the last 2 decades catatonic stupor is not so spread in the psychiatric hospitals.

The circadian rhythm of temperature was followed in 6 patients with catatonic stupor, 1 with catatonic stupor – febrile, 1 with depressive stupor, 1 with organic stupor, and 1 with psychogenic stupor. It was done a comparison with a control group of 65 healthy persons. Data were analysed by Cosinor method of F. Halberg. The results are given at table 1.

Table 1. Data of Cosinor analysis of various patients with stupor

Parameters	Stupor	number of patients	Number of days	Mesor	Peak Hour	Signif.
Temperature	Control group	65	65	36.387+/-0.08	16.18	Yes
Pulse rate	Control group	55	55	74.83 +/-2.69	14.15	Yes
Temperature	Catatonic stupor	6	20	36.787+/-0.19	15.31	Yes
	Febrile stupor	1	5	37.372+/-0.35	14.48	No
	Depressive stupor	1	2	36.133+/-0.26	13.58	Yes
	Psychogenic stupor	1	7	36.684+/-0.13	17.38	Yes
	Organic stupor	1	4	37.785+/-1.32	15.51	No
Pulse rate	Catatonic stupor	5	17	91.29+/-5.89	13.16	Yes
	Depressive stupor	1	2	82.31+/-1.41	7.40	No
Arterial blood	Sistolic	1	1	130.15+/-13.8	18.15	No
Pressure	Diastolic	1	1	92.70+/-9.28	16.08	No

It was established that patients with catatonic stupor, depressive stupor and psychogenic stupor are with expressed temperature peak-hour and it is at **15.31**; **13.58** and **17.38** o'clock, and it is not different by the peak-hour of healthy persons (16.18 h), whereas patients with depressive stupor and organic stupor show no daily rhythmicity of temperature rhythm. The temperature mesor is higher in patients with organic stupor and catatonic stupor (37.785 and 37.372), whereas for the other groups it is lower than 37.0, but the values are lower for the patient with depressive stupor. The temperature mesor of the patient with febrile stupor is not so higher (37.372) and it could be connected with the age of the patient (61 year). During her life she had 2 schizophrenic episodes with catatonic stupor (the 1st was 40 years ago and after her recovery she had a very good remission of 40 years). The 2nd episode was at 61 years, again with catatonic stupor, but may be because of the age she did not recover and died.

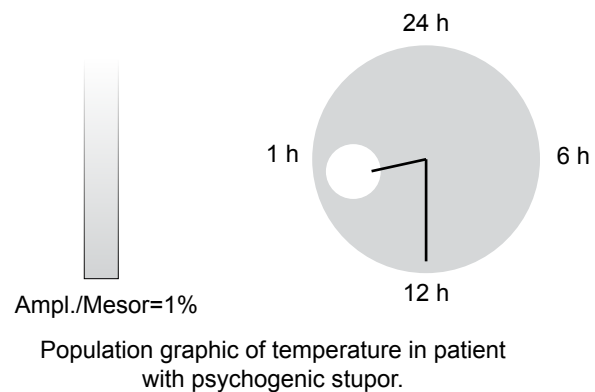
The peak-hour temperature of patient with psychogenic stupor is not quite different from the control group (see fig. 3). The values of pulse rate in patients with catatonic stupor (91.29 beat per min) and depressive stupor (82.31) are higher in comparison with healthy persons. There is a significance between healthy persons and the patient with catatonic stupor.

Catatonic stupor – its chronobiological characteristic is that the desynchronization between temperature and pulse is not so obvious (their peak-hours are at 15.31 and 13.16), little more than 2 hours. But the mesors of temperature, pulse and blood pressure are higher in comparison with the mesors of healthy persons and schizophrenic patients

Pathophysiology of catatonic stupor – catatonic states are connected with deep disturbances of the Highest Nervous System. In catatonic stupor the cortex of the brain is suppressed and specially the motor' centre.

Pavlov's opinion for stupor: In the beginning Pavlov analyzed the symptoms of the different catatonic states, starting with catatonic stupor. He realized that patients with stupor fail to react to questions under normal everyday circumstances. On the other hand he found that if the circumstances were changed, if these same patients were questioned in a soft voice in extremely quiet surroundings, than their reaction was favorable. Pavlov found an analogy here with those phenomena which were to be seen frequently at the beginning of the experimentally induced sleep in animals. He saw that in the so called "paradoxal" phase the animal loses its reaction to a strong stimulus, while still reacting normally to a weak one. This he correlate with the actions of the catatonic schizophrenia in a state of stupor. Pavlov interpreted another catatonic symptom, negativism, on the same bases. Many other schizophrenic symptoms similarly bear a striking resemblance to familiar phenomena in normal hypnotized subjects. Among these are stereotypy, echolalia, echopraxia, and catalepsy. Pavlov found a correlation between catatonic stupor and paradoxal phase and negativism and the ultraparadoxical phase (see Thomas Arthur Ban).

The patient VM, 23 years old, was hospitalized with psychogenic stupor. Her temperature mesor (36.684 ± 0.132) was higher of the mesors of the other group patients with neurotic disorders. Her temperature peak was at 17.38 and it is near to the group of healthy persons. This patient was followed about 20 years and her symptoms were in the sphere of neuroses with asthenia, decreased working capacity, depressive mood, but she never had psychotic symptoms.



Saunders WA (1970) made a commentary that the differentiation of organic from psychogenic stupor received but scant attention in the medical literature. The patient was recently admitted in stupor had a past history of both cerebrovascular disease and depression. The definitive diagnosis was made only after the use of intravenous sodium amylobarbitone. The author gave a description of a 44 years female – she was hypertensive and suffered a left hemiplegia 8 weeks before her hospitalization in a psychiatric department. She became closed, uncommunicativeness, and had to be fed. When is done intravenous of 5% sodium amylobarbitone slowly, after 5 minute she became agitated, begin to move, to talk and to eat. It means that she was with depressive nature, and the best therapy was ECT.

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3. Emotions

Emotion, feeling, mood, affect

“The usual way of thinking, about the emotional experience and their for other bodily manifestations as that the emotional experience is excited by the perception of some object, and that the emotional feeling then expresses itself in the bodily manifestation in question.”

(Encyclopedia Britannica, 14th ed.).

The story about Erasistrat (300-250 years before NC)

Antioch, the son of Selevk, suffered from a strange disease. He did not speak with the other persons, he had no appetite, and could not sleep well, he was very sad. The famous doctor Erasistrat supposed the real reason for his depression. He pleased all young girls from the court to pass through his room. In that time the doctor was seating near by Antioch – his right hand was putted on his left chest, near the heart area, and with his left hand he measured the pulse rate of his left hand. When the beautiful Stratonice, the 2nd wife of his father, entered the room, his heart began to beat very quick and his pulse rate was increased. Erasistrat understood the reason of Antioch's depression and told the truth to Selevk. The large-heated Selevk agreed his son to marry to his second wife Stratonice.



A famous picture for Antiochus and Stratonice

History of emotions begins with ancient Greece

Plato has given us a structure for thinking about what the emotions are, how they develop and how they relate to our overall thinking ability. We must turn to Plato's most famous student Aristotle, to really flesh out how the emotions create and color our thoughts and behaviors, as well as how they relate to good and bad people and actions.

We must agree with the most philosophers in placing him behind only Plato in the list of the greatest philosophers of all time. Aristotle is the most famous student of Plato.

The scientists discussed few Plato's concepts in order to understand emotions:

- Deliberation, Impulsiveness, Weakness, Voluntary action, and Counter Voluntary Action.
- Each of them explains some basic ethical moments/points and will help us answer many ethical problems. Let us go ahead and make differences between Voluntary and Counter-voluntary action.

EMOTIONS - ARISTOTLE

- **This fits in well with the Platonic framework were discussed**
- The core ethical lesson can be compared by an analogy:
 - If you could stopped ignored appetite but did not, you have acted wrongly. And by the same token, if you could have stopped and reconsidered a destructive emotion and doing so would have let you redirect it or it would have without any result.

Aristotle deserves all the fame that he has and his influence on Western society, like that of Plato's is incalculable and brilliant. Aristotle goes on at length to explain how the feeling aspect of emotions stem from and relate to human cognitive capacity and how emotions, feelings and cognition (remember I have used this to mean thinking like we do when playing chess or doing algebra). This fits in well with the Platonic framework were discussed before: Putting Aristotle's thoughts into Plato's words one can say that voluntary emotional acts are immediately by the interplay between the psyche and rhythm and involuntary acts are of the animal instinct.

Aristotle studying animals

Aristotle noted that while other animals seem merely to respond to natural desires such as food or sex, humans are capable of deliberating about our actions. This ability to deliberate is what allows a being to originate their actions. Even if we often do not deliberate before acting, we can do so and doing so make us true agents.

This immediately bring to mind the questions of why it is that we sometimes do not, if we ever can not, and why. When we do, we deliberate in order to achieve our goals. We do not deliberate about goals themselves or about particular objects (e. g. that I must convert my dissertation into a blog), nor do we deliberate about "particular " things that our senses show us, (e.g. that I just ate Chinese food).



Aristotle studies animals

PLATO-ARISTOTLE-LUCRECIUS THEORY

Looking ahead we must finish setting up the **P-A-L theory about emotions**. We will stress that the **combined work of Plato, Aristotle, Lucretius form an internally connected, empirically friendly, pluralist approach to understand the mind and emotions and how they relate to ethics**. Thus we will have seen that there was such a thing as a pluralist theory of the emotions with an attached ethical theory available before the cognitive and visceral theories that began to be put forward in the 17th century.

Aristotle gives us practical account of the emotions and how they affect moral actions and choices. Like Plato, Aristotle thinks there is a special, communication between "mind" (or "cognition in general") and the emotions a process known as "duplex communication". However, he took Plato's overarching theory and fleshed it in an even more empirically-friendly manner with ideas and observations that really appeal to common sense.

Aristotle's List of Emotions

- **Anger** – an impulse to revenge that shall be evident, and caused by an obvious, unjustified slight with respect to the individual or his friends. Slightings have 3 species: contempt, spite, and insolence.
- **Mildness**: the settling down and quieting of anger.
- **Love** – wishing for a person those things which you consider to be good – wishing them for his sake and not your own – and tending so far as you can to affect them.
- **Enmity**: whereas anger is excited by offences that concern the individual, enmity may arise without regard to the individual as such. Anger is directed against the individual, hatred is directed against the class as well.

- **Fear:** a pain or disturbance arising from a mental image of impending evil of a painful or destructive sort.
- **Confidence:** the opposite of fear. Confidence is the hope (anticipation), accompanied by a mental image, of things conducive to safety as being near at hand, while causes of fear seem to be either non-existent or far away.
- **Shame:** a pain or disturbance regarding that class of evil, in the present, past or future, which we think will tend to our discredit.
- **Shamelessness:** a certain contempt or indifference regarding the evils.
- **Liberality:** the emotion toward disinterested kindness in doing or returning good to another or to all others; the same term represents the kind action as an action; or the kind thing done considered as a result.
- **Pity:** a sense of pain at what we take to be an evil of a destructive or painful kind, which befall s one who does not deserve it, which we think we ourselves or some one permitted to us might likewise suffer, and when this possibility seems near at hand.
- **Indignation** (be angry with): a pain at the sight of undeserved good fortune.
- **Envy:** a disturbing pain directed at the good fortune of an equal. The pain is felt not because one desires something, but because the other persons have it.
- **Emulation/competitive:** a pain at what we take to be the presence, in the case, of persons who are by nature like us, of goods that are desirable and are possible for us to attain – a pain felt, not because the other persons have these goods, but because we do not have them as well.
- **Contempt:** (despise, hate) the antithesis of emulation (Persons who are in a position to emulate or to be emulated must tend to feel contempt for those who are subject to any evils (defects and disadvantages) that are opposite to the goods arousing emulation, and to feel it with respect to these evils).

Alphred Adler

Emotions do not determine goals and hence are never the cause of undesirable or antisocial behavior; rather goals are set in accord with cognitive processes (even through the subject may not be consciously aware of these). Emotions are generated secondarily to suit those goals, and to permit and support what the subjects intends to do. "People are not emotionally disturbed; they are deficient in their social movement, in their goals, in their form of social integration, because they wrong concepts about themselves."

(*R. Dreikurs in "Contemporary Psychotherapies", 1961*)

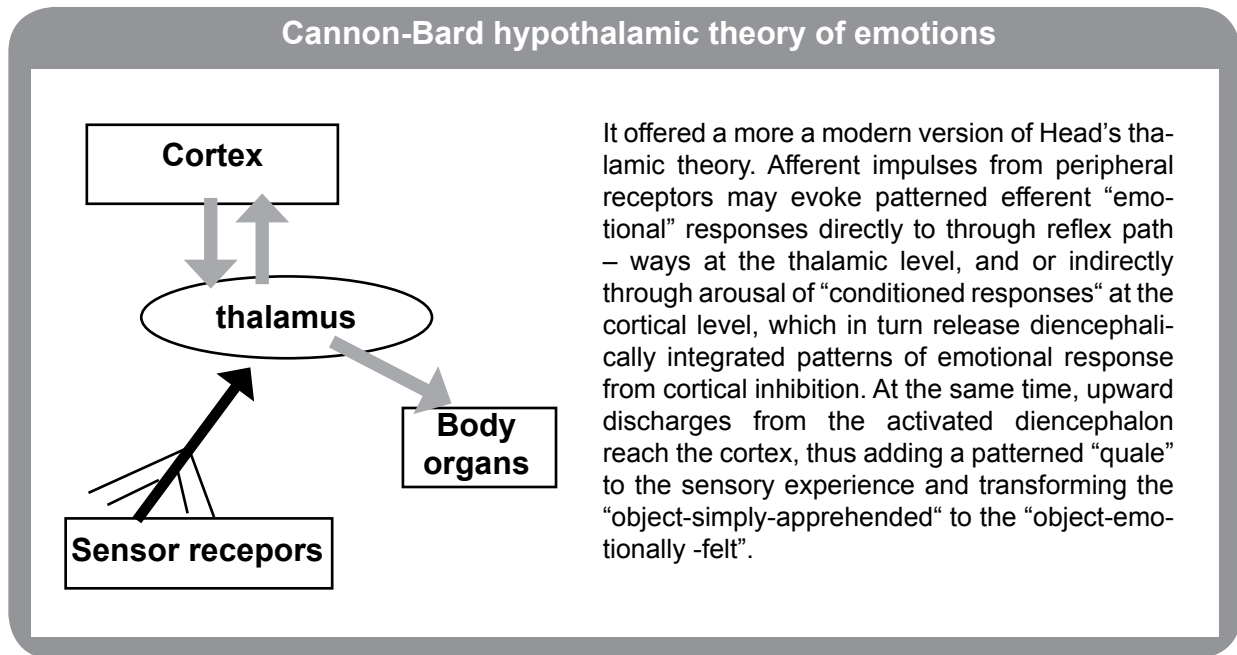


Cannon idea of emotion (1871-1945)

The American physiologist studied the principles of homeostasis. His experiments were in diagnostic methods as roentgenography stimulus his interest in esophageal and gastrointestinal motility and subsequently to recognition of the role of the autonomic nervous system, humoral transmission and "sympathin". From that point he turned to a study of shock and the role of adrenal medulla, and then investigation of the central nervous system basis for emotion.

David Lykken (1983)

He notes that because of the fluctuation of one emotion to another the polygraph cannot distinguish among anxiety, irritation, and guilt – they all appear as arousal.



The James-Lange Theory of Emotions

The bodily changes follow directly the perception of the exciting fact, and our feeling of the same changes as they occur is the emotion... The elements... or physiological processes which comprise the emotions... are all organic changes, and each of them is the reflex effect of the exciting object."

Papez's Theory of Emotions

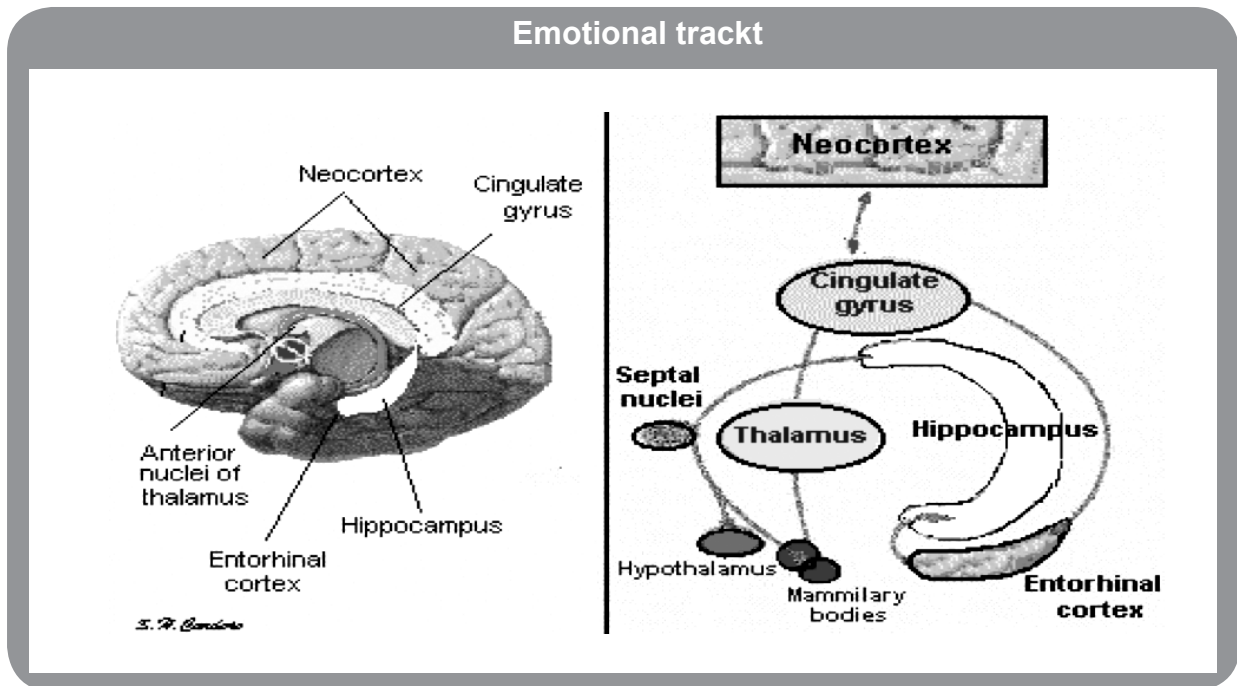
James Papez described his theory in 1937. He discovered the circuit after injecting rabies virus into a cat's hippocampus and monitoring its progression through the brain.

The Papez's circuit of the brain is one of the major pathways of the limbic system and is chiefly involved in the cortical control of emotion. The Papez circuit also plays a role in storing memory.

• The initial pathway was described as follows:

- Hippocampal formation (Subiculum) → fornix → mammillary bodies
- Mammillary bodies → mammillothalamic tract → anterior thalamic nucleus
- Anterior thalamic nucleus → genu of the internal capsule → cingulate gyrus
- Cingulate gyrus → cingulum → parahippocampal gyrus
- Parahippocampal gyrus → entorhinal cortex → perforant pathway → hippocampus.
- Since then, new findings in neuroanatomy and brain function by Paul D. MacLean and others have elucidated a larger circuit that also includes the prefrontal cortex (PFC), amygdala, and septum among other areas. The PFC and amygdala are key components in this larger loop.

There are many figures and video in internet that tried to explain more clearly and graphically the Papez circuit theory of the functional neuroanatomy of emotions. The two of them shown the anatomical and chematic view of the emotional tract.



According to “Neuroscience: Exploring the Brain”

Having in mind the earlier work of Cannon, Bard and others American neurologist James Papez for the first time proposed that there is an “emotional system”, living on the medial wall of the brain, that links the cortex with hypothalamus.

- Papez believed that the experience of emotion was determined by activity in the cingulate cortex and, less directly, other cortical areas.
- Emotional expression was thought to be governed by the hypothalamus. The cingulate cortex projects to the hippocampus, and the hippocampus projects to the hypothalamus by way of the bundle of axons called fornix.
- Hypothalamic effects reach the cortex via a relay in the anterior thalamic nuclei.

Witting & Williams III experiment (1984)

•They made a simple variation of the detector of the lie. He pleased one of the girls from the group to be included in his experiment – the fingers of the one hand were connected with the poligraph, whereas with the other hand she had to cover the list with one cipher (from 1 to 10). The other students from the group had to recognize the cipher under her hand. The instructions were that she had always to answer “No” even the answer of his colleagues is correct. When she lies the needle of the apparatus will move. The students several times repeated the ciphers, but the needle did not move. The girl said “I am not agitated from such small lies. One of her colleagues shook her arms and asked: “What kind of a lie could agitated you?”. Just in that moment the needle inclined to the right direction” – emotions are very important.

The lie detector or polygraph

How does the polygraph WORK? It does not literally detect lies. It measures several of the physiological responses that accompany emotion, such as changes in breathing, pulse rate, blood pressure, and perspiration. Assuming that lying is stressful a person who is lying will become physiologically aroused. ***If you are tested, the examiner first tries to convince you that the instrument is highly accurate (to make you fearful of lying). While you are relaxed, the examiner begins by measuring your physiological responses as you answer questions. Some of these, called control questions, are designed to make anyone a little nervous. Many people will tell a little white lie and say “no”, but the polygraph may detect light physiological changes.***

The truth is that lie detectors some times lie as U.S.

The polygraph functions more appropriately as a tool in criminology. Police some times use the polygraph to induce confessions by criminals who are scared into thinking that their lies are transparent. A more honest approach uses the guilty knowledge test, which assesses a suspect's responses to the details of the crime known only to the police and the guilty person. Nevertheless critics and advocates alike disapprove widespread commercial use of the polygraph.

Brain Mechanisms and psychophysiology of Emotions, Motivation, and Anxiety

According Lang et al. the organization of response systems in emotion is founded on two basic motive systems, appetitive and defensive. The subcortical and deep cortical structures that determine primary motivated behavior are similar across mammalian species. The subcortical and deep cortical structures that determine primary motivated behavior are similar across mammalian species. Animal research has illuminated these neural systems and defined their reflex outputs. Although motivated behavior is more complex and varied in humans, the simpler underlying response patterns persist in affective expression.

Lang et al. discussed emotions in two models:

1. The first model is a theoretical – emotions are presented on basic experiments from both the animal and human research laboratories. According this hypothesis emotions are as a products of Darwinian evolution. They followed the development of the expressed emotions from primitive actions that facilitated the survival of species and individuals. In man, the evolved affects are best characterized as motivationally tuned states of readiness.

2. The Second model is connected with the study of human anxiety disorder.

Research is presented, showing that psychophysiological analyses conducted during initial patient evaluation can help predict success in therapy.

The Motivational Organization of Emotion:

Verbal reports of affects can have a great richness and subtlety of discrimination, with hundreds of emotionally descriptive words available in natural language lexicons. Affects are organized by brain systems that adaptively respond to two basic types of stimulation, appetitive or aversive. This biphasic organization of emotion has been proposed by many theorists.

Konorski (1967)

His model is based on a typology of unconditioned reflexes and their biological, motivational roles. Exteroceptive reflexes were either preservative (e.g., ingestion, copulation, nurture of progeny) or protective (e.g., withdrawal from or rejection of noxious agents).

Dearing (1979)

Further developed Konorski's dichotomy into two opponent motivational systems, aversive and attractive, each activated by a different, but equally wide range of unconditioned stimuli, determining perceptual-motor patterns and the course of learning.

The Psychophysiology of Picture Processing

A number of physiological systems covary significantly with pleasure or arousal, as defined by evaluative judgments. **EMG** (electromyographic) activity increases linearly as pictures are rated as more unpleasant; conversely, zygomatic ("smile") EMG activity increases with judged pleasantness. Heart rate is also responsive to differences in affective valence; unpleasant pictures generally prompt marked deceleration during viewing, whereas greater acceleration is obtained when viewing pleasant pictures.

Skin conductance activity covaries positively with judged arousal, increasing monotonically with increases in rated arousal, regardless of picture valence.

The slow cortical response evoked directly by the picture stimuli is also directly correlated with stimulus arousal; both pleasant and unpleasant arousing pictures prompt a marked positive-going slow wave. This positive slow wave is sustained for nearly the entire viewing period, whereas the slow-wave response to neutral pictures is distinctly more negative. These measures, then, index the intensity or activation level of the current motivational state, rather than its direction (i.e., appetitive or defensive).

Electroencephalographic (EEG) activity loading highly on a second, arousal factor. The cross-loadings for all measures are very low. Thus, affects are built around motivational determinants.

Neural Imaging: Motivation in the Visual Cortex

Lane et al (1997) examined regions of brain activity in a group of female subjects, viewing pleasant, neutral, and unpleasant pictures from by the positron emission tomography (PET). For unpleasant pictures were found the largest blood oxygenation level dependent (BOLD) effects in the thalamus and in Brodmann's visual areas 18 and 19 of the occipital cortex.

For neutral pictures was subtracted out.

Pleasant pictures – unexpectedly, the activity prompted by was not much different from that for neutral stimuli.

This finding was consistent, however, with skin conductance recordings and with the PET measurement.

Some chronobiological Aspects in Emotions

Recently chronobiology has made its way to medicine. Its importance in Psychiatry is discussed during the last 4-5 decades. The most serious scientific examination of rhythm of mood was done by H. Hampp in 1961.

CHRONOBIOLOGY

H. Hampp (1961), a German neurophysiologist, studied 400 healthy person by his own Questionnaire for examination of the types of circadian rhythm of Mood and Vigor. He determined 3 types of circadian rhythm of mood and vigor in healthy individuals:

Arrhythmic;
Morning;
Evening

He established that:

33% – arrhythmic,

52% – rhythmic
– morning type
– evening type

9% – could not be included in one of the mentioned above groups.

The scientist could mention the names of many famous person who were with evening or morning tipe rhythm of mood and vigor. The overture to “Don Juan” Mozart wrote for one night. Napolen’s working day began at 3-4 o’clock, Balzak prefered to work at midnight.

The characteristic of the various types circadian rhythm of mood and vigor.

- **Arrhythmic type** – they have not an express daily fluctuations of the rythm of mood and vigor during the day. Their activity and good mood are the best during the day (from 7 AM to 22 PM). They need a little rest between 2 PM and 4 PM. It is supposed that this rhythm dominated before the appearance of artifical light.
- **Morning type**, (known as sky/field lark, as they rise with the lark) - their mood and the working capacity are more expressed early in the morning. Their working day could begin at 4-5 AM, but they go to sleep early in the night (about 10 PM).
- **Evening type** – (owl, eagle) – their activity begins after 10-11 AM and their mood, vigor and concentration are best in the afternoon and in the night.

H. Middelhoff in 1967 studied psychiatric patients with Hampp’s questionnair and he established the same types of circadian rhythm of mood and vigor could be spread among psychiatric patients.

We must mention that at the end of 19th Century Krafft-Ebing (1898) and E. Kraepelin (1898) noticed that **the patients with endogenous depression feel better in the evening, whereas patients with neurotic depression feel better in the morning.**

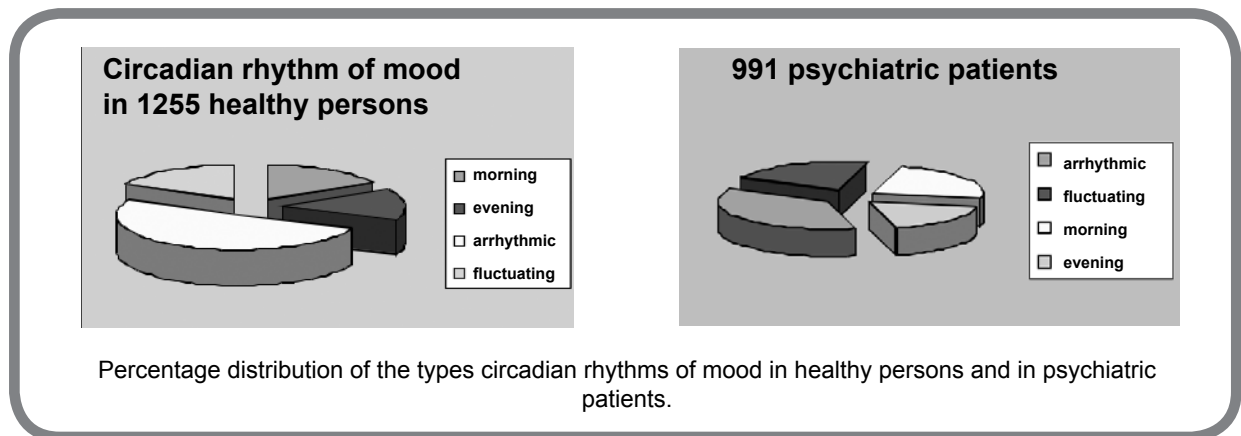
The same data were noticed by many psychiatrist from different countries.

So one of the biological marker for endogenous depression is the evening improvement and for neurotic depression is morning improvement.

• Our studies (1985-1995) of the daily fluctuation of rhythm of mood and vigor were done with the Hamppp's questionair and with our own scale. We received the same types of circadian rhythm of mood and vigor. In contrast to the other authors we established that about 1/10 of healthy persons were of fluctuating rhythm. They evaluated daily fluctuations of mood, without any serious events or somatic problems. Later we established that healthy persons with fluctuating rhythm were with predisposition of neurotic disorders.

<p>According to our studies 4 types of circadian rhythm were determined:</p>	<ul style="list-style-type: none"> • Arrhythmic, daily type rhythm; • Morning type rhythm; • Evening type rhythm; • Fluctuating type rhythm.
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We examined 1503 healthy persons and 677 psychiatric patients. The percentage distribution of the types circadian rhythms is different for healthy persons and for patients with various psychiatric disorders (see the figure down).



Our later studies showed that the various types circadian rhythms are characterised with different rhythm of temperature, pulse-rate, blood pressure and temperament features of healthy persons and patients with psychiatric disorders.

Some Biochemical studies of Emotions



There is a correlation between the degree of anxiety and the values of epinephrine and norepinephrine. We established that depressive patients that are free of anxiety and with moderate anxiety were with significantly higher values of epinephrine and norepinephrine.

Disturbances of Emotions

DEFINITION: Emotional disturbances means a condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree that affects a child’s educational performance.

Anhedonia, a symptom of dysthymia characterized by a decreased or absent ability to enjoy a sense of pleasure.

Dysthymia (from Ancient Greek *δυσθυμία*, “bad state of mind”), is a mood disorder consisting of the same cognitive and physical problems as in depression, with less severe but longer-lasting symptoms.

Dysthymia is characterized with low energy and drive, low self-esteem, and a low capacity for pleasure in everyday life. Mild degrees of dysthymia may result in people withdrawing from stress and avoiding opportunities for failure. In more severe cases of dysthymia, people may even withdraw from daily activities.

DSM-IV	DSM - V
<p>Dysthymia is a serious state of chronic depression, which persists for at least two years (1 year for children and adolescents); it is less acute and severe than major depressive disorder. As dysthymia is a chronic disorder, sufferers may experience symptoms for many years before it is diagnosed, if diagnosis occurs at all. As a result, they may believe that depression is a part of their character, so they may not even discuss their symptoms with doctors, family members, or friends.</p>	<p>Dysthymia includes a number of changes. In this edition, dysthymia is replaced by persistent depressive disorder. This new condition includes both chronic major depressive disorder and the previous dysthymic disorder. The reason for this change is that there was no evidence for meaningful differences between these two conditions.</p>

Causes:

- **Genetic predisposition to dysthymia:** “The rate of depression in the families of people with dysthymia is as high as fifty percent for the early-onset form of the disorder;
- **Stress**, social isolation, and lack of social support.
- **Co-occurring conditions** – about 75% are with chronic physical illness, or another psychiatric disorder as anxiety disorder (50%), cyclothymia, drug addition, alcoholism, major depression (95%), substance abuse (50%), somatoform disorders (45%) . . .

Pathophysiology of dysthymia:

indicator of early onset dysthymia – differences in corpus callosum and frontal lobe negative emotions – changes in amygdala (by fMRJ);

sad emotions – connected with the insula;

increase activity – cingulate girus, which is the bridge between attention and emotions.

Stress – HPA-axis (structures in the brain that get activated in response to stress).

Dysthymia – regulated by various hormones (e.g. phenotypic variations of corticotropin releasing hormone (CRH) and arginine vasopressin (AVP), and down-regulation of adrenal functioning).

Euphoria (from Ancient Greek εὐφορία, from εὖ eu, “well”, and φέρω pherō, “to bear”) (semantically opposite of dysphoria) is medically recognized as a mental and emotional condition in which a person experiences intense feelings of well-being, elation, happiness, excitement and joy.



The word derives from Greek εὐφορία, “power of enduring easily, fertility”. Euphoria is an affect, often used to define emotion and state of transcendent happiness combined with an overwhelming sense of contentment. It has also been defined as an “affective state of exaggerated well-being or elation.”

Euphoria is generally considered to be an exaggerated physical and psychological state, sometimes induced by the use of psychoactive drugs and not typically achieved during the normal course of human experience. However, some natural behaviors, such as activities resulting in orgasm, love, or triumph of an athlete can induce brief states of euphoria.

Psychophysiology – high levels of β -endorphin binding to opioid receptors within several regions of the brain, mostly frontal regions involved with positive emotions. β -Endorphins play a role in the reward system which may cause an addiction to exercise. Methamphetamine’s ability to release dopamine rapidly in reward regions. Alcohol – euphoria has been reported during the first 10–15 minutes of the alcohol consumption.

Cannabis – Tetrahydrocannabinol, the main psychoactive ingredient in the Cannabis plant has both stimulant and depressant properties but is commonly known to induce euphoria.

Stimulants – Stimulants are known to suppress locomotor activity (the subject becomes hypoactive) at therapeutic doses, but are known to stimulate movement and hyperactivity in higher doses. Euphoria can be produced by stimulants at any dose, but is more commonly seen when taken in higher doses. MDMA – MDMA, also known as “ecstasy” and MDEA (“eve”) are euphoriant drugs that induce “short-term feelings of euphoria, rushes of energy, and increased tactility” and are popular amongst young adults.

Opium – Opium and its derivatives morphine and codeine are drugs “derived from the unripe seedpods of the opium poppy[that] produces drowsiness and euphoria and reduces pain”

Dysphoria (from Greek: δύσφορος (dysphoros), δυσ-, difficult, and φέρειν, to bear) is a profound state of unease or dissatisfaction. In a psychiatric context, dysphoria may accompany depression, anxiety, or agitation. Common reactions to dysphoria include emotional distress or indifference. The opposite state of mind is known as euphoria.

Hyperthymia – manifesting intermittently or in an unusual way may mask hypomania or another psychiatric disorder. Hyperthymia can be most accurately diagnosed by a psychiatrist with the help of a patient’s family and/or close friends, as these individuals are most likely to have noticed a change in the individual’s temperament from euthymia.

In psychiatry, hyperthymia is rarely discussed, and is not an accepted diagnosis. The clinical, psychiatric understanding of hyperthymia is evolving. There is not much recent scientific or professional literature on it aside from historical writings on the dimensions of depressive illness, and a lack of agreement on its definition, implications or whether it is pathological. It is not known where to place hyperthymia on the affective spectrum, how to diagnose it, or what such a diagnosis means.

Hyperthymic temperament, or hyperthymia, from Greek *hyper* (“over”, meaning here excessive) + *θυμός* (“spirited”), is a proposed personality type characterized by an excessively positive disposition similar to, but more stable than, the hypomania of bipolar disorder.

Characteristics of the hyperthymic temperament are:

- increased energy and productivity
- short sleep patterns
- vividness, activity extroversion
- self-assurance, self-confidence
- strong will
- extreme talkativeness
- tendency to repeat oneself
- risk-taking/sensation seeking
- breaking social norms
- very strong libido
- love of attention
- low threshold for boredom
- generosity and tendency to overspend
- emotion sensitivity
- cheerfulness and joviality
- unusual warmth
- expansiveness
- tirelessness
- irresistible and infectious quality

Fear is an emotion induced by a threat perceived by living entities, which causes a change in brain and organ function and ultimately a change in behavior, such as running away, hiding or freezing from traumatic events. Fear may occur in response to a specific stimulus happening in the present, or to a future situation, which is perceived as risk to health or life, status, power, security, or in the case of humans wealth or anything held valuable. The fear response arises from the perception of danger leading to confrontation with or escape from/avoiding the threat (also known as the fight-or-flight response), which in extreme cases of fear (horror and terror) can be a freeze response or paralysis.

In humans and animals, fear is modulated by the process of cognition and learning. Thus fear is judged as rational or appropriate and irrational or inappropriate. An irrational fear is called a phobia.

Psychologists such as John B. Watson, Robert Plutchik, and Paul Ekman have suggested that there is only a small set of basic innate emotions and that fear is one of them. This hypothesized set includes such emotions as joy, sadness, fright, dread, horror, acute stress reaction, panic, anxiety, and anger.

Fear should be distinguished from, but is closely related to, the emotion anxiety, which occurs as the result of threats which are perceived to be uncontrollable or unavoidable.

The fear response serves survival by generating appropriate behavioral responses, as it has been preserved through out evolution.

Parathymia – misdirection of the emotional faculties; disordered mood.

Ambivalence is a state of having simultaneous conflicting reactions, beliefs, or feelings towards some object. Stated another way, ambivalence is the experience of having an attitude towards someone or something that contains both positively and negatively valenced components. The term also refers to situations where “mixed feelings” of a more general sort are experienced, or where a person experiences uncertainty or indecisiveness.

Ambivalence is as psychologically unpleasant when the positive and negative aspects of a subject are both present in a person's mind at the same time. This state can lead to avoidance, or to deliberate attempts to resolve the ambivalence. People experience the greatest discomfort from their ambivalence at the time when the situation requires a decision to be made. People are aware of their ambivalence to varying degrees, so the effects of an ambivalent state vary across individuals and situations. For this reason, researchers have considered two forms of ambivalence, only one of which is subjectively experienced as a state of conflict.

Anaesthesia dolorosa It is also known as painful anaesthesia. Anaesthesia dolorosa is also written as anesthesia dolorosa. Both terms stem from the Greek noun *anaesthesia* (numbness) and the Latin adjective *dolorosa* (of grief, of sorrow). They are used to denote a spontaneously occurring, severe type of pain located in an anaesthetic zone. Facial anaesthesia dolorosa is an uncommon complication of surgical treatments for trigeminal neuralgia.

Pathophysiologically, anaesthesia dolorosa tends to be attributed to deafferentation. When caused by neurosurgical lesions, the term central pain is preferred over anaesthesia dolorosa. The issue whether pain can also be experienced in a hallucinated form is a knotty philosophical issue.

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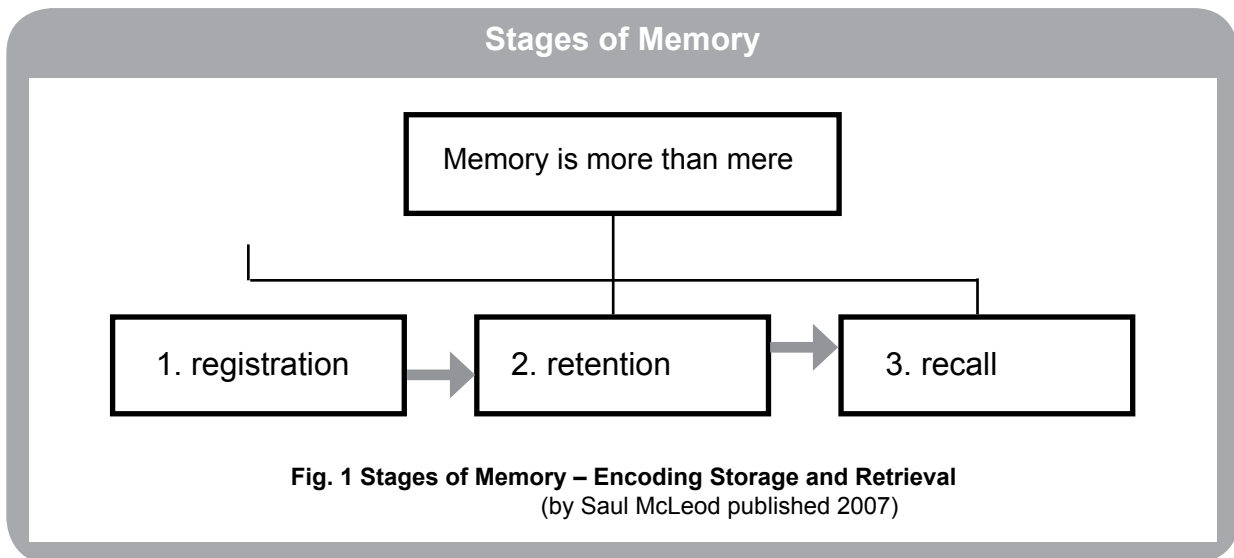
4. Memory

DEFINITION: Memory is the ability process, or act of remembering, or recalling, and especially the ability to reproduce what has been learned or experienced. Memory is more than mere registration, retention and recall.

(R. Campbell, 1981; in *Psychiatric dictionary*, p. 378).

• **STAGES OF MEMORY** – memory is the ability process, or act of:

1. **REMEMBERING;**
2. **RECALLING;**
3. **REPRODUCING OF WHAT HAS BEEN LEARNED OR EXPERIENCED.**



For psychologists the term memory covers three important aspects of information processing:

1. *“Memory is the process of maintaining information over time.”* (Matlin, 2005)
2. *“Memory is the means by which we draw on our past experiences in order to use this information in the present”* (Sternberg, 1999).
3. Memory is the term given to the structures and processes involved in the storage and subsequent retrieval of information.
4. Memory is essential to all our lives. Without a memory of the past we cannot operate in the present or think about the future. We would not be able to remember what we did yesterday, what we have done today or what we plan to do tomorrow. Without memory we could not learn anything.
5. Memory is involved in processing vast amounts of information. This information takes many different forms, e.g. images, sounds or meaning.

History of memory (experiments)

For the 1st time at the end of 19th Century was expressed an opinion about the organic matter of memory.

Ribot (1881) – Ribot’s Law of retrograde amnesia was hypothesized in 1881 by Théodule Ribot (French psychologist), one of the first scientists that studied amnesia. It states that there is a time gradient in retrograde amnesia, so that recent memories are more likely to be lost than the more remote memories. Not all patients suffering from retrograde Ribot’s Law was first postulated by the French psychologist Théodule Ribot (1839 -1916), who is recognized as one of the pioneer 19th century advocates for psychology as an objective and biologically-based empirical field. Amnesia report the symptoms of Ribot’s Law. It is used almost exclusively to describe the perceived effect of older memories being less prone to disruption. In his 1882 book, “Diseases of Memory: An Essay in the Positive Psychology“, Ribot explained the retroactive phenomena of trauma or event-induced memory loss. Patients who incurred amnesia from a specific event such as an accident often also lost memory of the events leading up to the incident as well. In the case of some, this retrograde loss included several years leading up to the precipitating event of injury or trauma had occurred – yet left much older memories intact – suggesting that the effect was not just due to interference with consolidation of memories immediately before brain damage.

Experimental evidence largely confirms these predictions. In a study of electroconvulsive shock therapy patients, memories formed at least four years prior to treatment were unaffected, while more recent ones were impaired. An experiment with rats showed similar results. Rats were conditioned to fear stimuli in two different contexts: one 50 days before receiving hippocampal brain lesions, and the other 1 day before lesioning. Subsequently, they only showed memory in the 50-day old context.

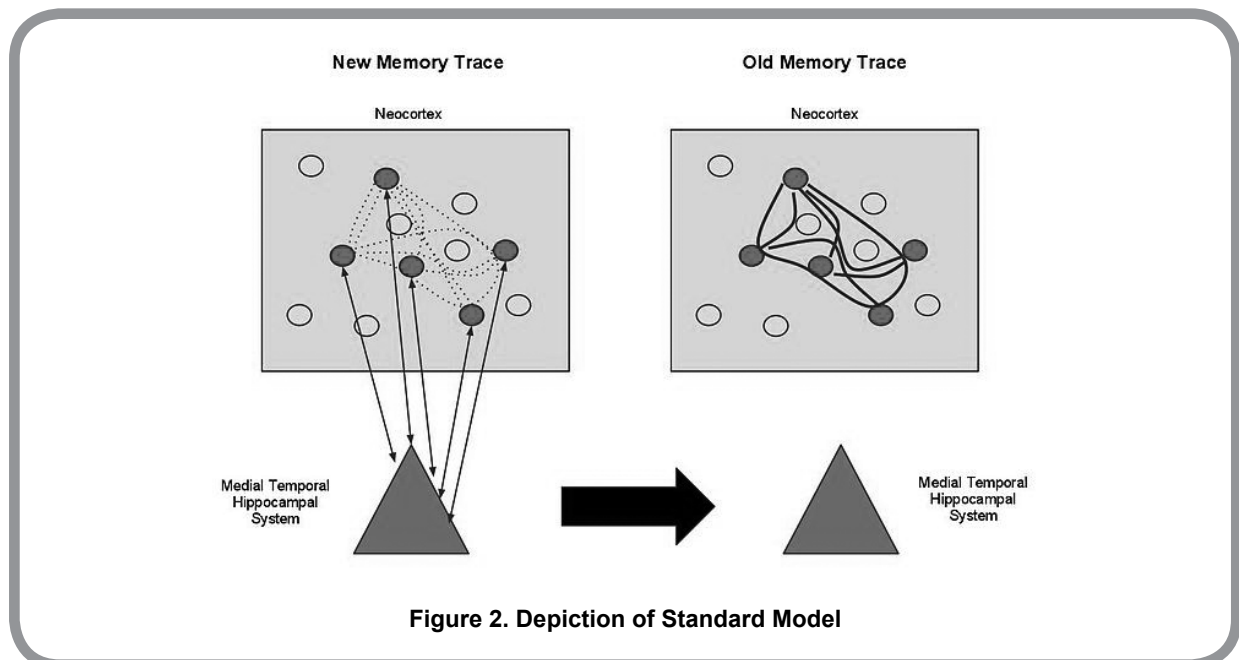
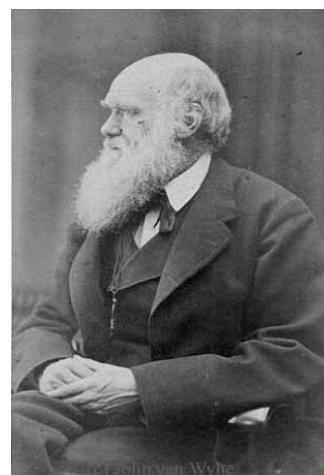


Figure 2 provides a visual explanation of the standard model. Initially, the memory trace (features of the experience represented by red circles) is weak in the neocortex and is reliant on its connections to the medial temporal hippocampal system (MTH) for retrieval. Over time, an intrinsic process results in the strengthening of the connections between memory trace representations in the neocortex. Since the connections are consolidated, the memory can now be retrieved without the hippocampus.

In the model, interaction between the medial temporal hippocampus (MTH) and multiple areas in the neocortex lead to the formation of a cortical trace which represents a single memory. While this MTH-neocortex interaction is initially required to maintain the memory trace, the model predicts that over time the importance of the MTH becomes diminished and eventually is unnecessary for the storage of the memory trace. The medial temporal hippocampus mediates memory formation by maintaining the connections between various neocortical regions that make up each memory trace. At first the associations between neocortical areas that make up a newly formed memory trace are weak, however repeated activation of these areas in succession lead to “consolidation” of the trace within the neocortex. Once consolidation is sufficiently complete, the memory trace becomes mediated through neocortical activity alone and the MTH is no longer necessary for reactivation.

Charles Darwin is best known for his theory of evolution as set out in his book *On the Origin of Species*. He was a naturalist – an expert in geology, botany and biology – whose interest in all things natural was apparent from a young age.

Darwin was curious to know if such lowly creatures were intelligent. This led Darwin to state that worms have some degree of intelligence. Charles Darwin was the 1st that had special interest in earth-worms. *He began a series of earthworm experiments that would go for the next 40 years.* He published his findings in **1881** in a book titled *The Formation of Vegetable Mould through the Action of Worms, with Observations of their Habits*. The book sold 6000 copies in its first year, selling faster than *On the Origin of Species* had when it was first published. He tested their senses by exposing worms to lamps or candlelight and their sensitivity by holding “a poker heated to dull redness near some worms”. Earthworms do not have ears, but Darwin still tested their sense of hearing. He used a metal whistle and had his son play his bassoon loudly. Darwin even shouted at the worms but found that, if care was taken that his breath did not strike them, they were indifferent to noise.



Darwin noted that earthworms are extremely sensitive to vibrations, but not to noise. Charles Darwin was fascinated by earthworm behavior. He experimented with different types of food, placing the food on pieces of tinfoil to make sure the earthworms did not accidentally come upon the food by burrowing from below.

James V. McConnell – It’s March 1960, and Connel, an assistant professor of psychology at the University of Michigan, is convinced that planarians – common flatworms – **hold the key to unraveling the mystery of memory**. He has decided to condition them to scrunch when a bright light is flashed. Then, he plans to chop them into pieces, feed them to their cannibalistic brothers and see whether the learned behavior is transferred from the trained victim to the native recipient. His idea was **to demonstrate that the engram – the physical representation of memory – is encoded in the structure of unique forms of RNA** much as inherited traits are encoded in one’s DNA. *James V. McConnell – feeding trained worms to their cannibalistic brothers, argued that memories are encoded in the structure of molecules.*

The story of “**McCannibal and his Mau Mau**” hypothesis has become part of the folklore of psychology. Often used in textbooks as a humorous hook to grab students’ attention in chapters devoted to learning and memory, two things are typically included: references to “memory pills” or “professor burgers” and the fact that no one was ever able to truly replicate the findings. Those who did report positive results, the story goes, were poor scientists who either conducted sloppy experiments that lacked proper controls or simply lied themselves.

McConnell found, to his astonishment and delight, that the regenerated tails showed as much retention – and in some cases more – than the regenerated heads. McConnell showed that *each regenerated part of trained worms cut in several pieces retained the initial training and, more important, a planarian that, after several regenerations, contained none of the structure of the originally trained animal also retained the memory.*

These results led McConnell to think more seriously about the chemical nature of memory. To test this notion, ***he needed to find a way to transfer the putative molecules from a trained to an untrained animal.*** But how? They tried to graft the head of a trained worm onto the tail of a native worm – but the head kept falling off. He and his students tried grinding up trained worms and injecting them into native recipients, but that didn't work, because the needles were too big. The answer came in March-April, when he received positive results. Each of the next four replications also produced promising results.

The conventional view held that ***memory consisted of electrical impulses traveling along specific neural pathways.*** But the grandiose success of Watson and Crick led some to wonder: ***If genetic information is stored in nucleic acids and proteins, why not achieve information, as well?*** Many neurophysiologists thought this fanny, the molecular biologists, thinking the time was not come to use their tools and analytic approach to the study of memory processes, and ***began to discuss seriously whether RNA played a basic role in memory processes.*** Expectations ran high, and work proceeded along a number of collateral paths. The intelligence opinion, was that if RNA or any other biochemical agents played any role, it was merely to encourage the idea of neural processing.

McConnell wagered on the long shot. ***Soon after the cannibalism experiments, he successfully injected native worms with RNA taken from those trained to negotiate a maze and reported that the training had transferred.*** He interpreted these findings as providing evidence that ***specific memories are encoded in the nervous system in the form of unique structural variants of RNA.***

Everything changed when, in late 1965, four independent labs reported successful memory-transfer experiments using rats (and in one case, cross-species transfer between rats and mice). Two of these reports appeared in the high-impact journals *Science* and *Nature*.

No one could argue that rats cannot learn. Within a few months, more than 50 labs, including teams at Berkeley, Harvard, MIT and Yale, conducted transfer experiments. McConnell, after failed attempts using salamanders and mynah birds, also turned to rats.

The scientists have found that memories may be passed down through generations in our DNA. New researchers from Emory University School of Medicine, in Atlanta, had shown that it is possible for some *information to be inherited biologically through chemical changes that occur in DNA.* During the tests they learned that mice can pass on learned information about traumatic or stressful experiences – in this case a fear of the smell of cherry blossom – to subsequent generations. According to Dr Brian Dias, "From a translational perspective, our results allow us to appreciate how the experiences of a parent, before even conceiving off spring, markedly influence both structure and function in the nervous system of subsequent generations. *“Such a phenomenon may contribute to the etiology and potential intergenerational transmission of risk for neuropsychiatric disorders such as phobias, anxiety and post-traumatic stress disorder.”* This suggests that experiences are somehow transferred from the brain into the genome, allowing them to be passed on to later generations.

This suggests that experiences are somehow transferred from the brain into the genome, allowing them to pass on to later generations.

The researchers now hope to carry out further work to understand how the information comes to be stored on the DNA in the first place. They also want to explore whether similar effects can be seen in the genes of humans.

Professor Marcus Pembrey, a paediatric geneticist at University College London, said the work provided “*compelling evidence*” for the biological transmission of memory.

Professor Wolf Reik, head of epigenetics at the Babraham Institute in Cambridge: “*These types of results are encouraging as they suggest that transgenerational inheritance exists and is mediated by epigenetics, but more careful mechanistic study of animal models is needed before extrapolating such findings to humans.*” May our DNA Carrying also spiritual and cosmic memories passed down in genes from our ancestors?

Beliefs about the bases of memory.

In the middle ages memories were thought to be contained in the cerebrospinal fluid. The fluid itself was somehow altered by the process of learning. This is in contrast to **Descartes’ hydraulic theory of nervous action which held that the function of the nervous system relied on the transmission of fluid from and to the brain through nerves.** Descartes’ theorized is: “When the mind wills to recall something, this volition causes the little gland (the pineal), by inclining successively to different sides, to impel the animal spirits towards different parts of the brain, until they come upon that part where the traces are left of the thing it wishes to remember.”

In the 60’s there were speculations that models of information storage and the most direct hypotheses are that memory is encoded in the structure of RNA, DNA or related molecules.

The connections between neurons in the brain – Hebb’s model of synaptic modification. Hebb suggested that strength of connection across a synapse between two neurons would increase whenever the two neurons were simultaneously active. Repeated co-occurrences of stimuli or actions would have concomitant patterns of neural activity which, as a result of Hebbian synaptic modification, would develop reverberating patterns of common neural activity ***called cell-assemblies.*** We will not address the question of the existence of cell-assemblies, but we will consider whether ***Hebb’s model of synaptic modification,*** along with the other hypotheses mention previously are warged out by experimental findings.

Biochemical Memory in flat-worms?

1. molecular basis for memory in flat-worms. – a mnemonic function for the pineal gland – the Thompson’s experiments in 1955 and that of McConnell

A number of researcher began to investigate whether DNA or RNA were involved in what McConnell had hypothesised was the diffuse chemical encoding of memory in planaria. Many biochemists’ experiments were carried out on transfer of memory and on attempts to isolate the chemicals carrying these ‘memories’, not only in planaria, but in fish, mice and rats. Many scientists found that they could not replicate others’ studies and methods were often criticised.

For example, **Frank, Stein and Rosen** (1970) found that recipients who had been fed the brains of trained animals escaped from the light faster than those that had been fed the brains of untrained controls, however, animals fed the brains of donors stressed in the jar escaped faster still. The speediest escapes were made by animals which had been fed the livers of jar-stressed donors. Stein interpreted this as showing that ‘transfer’ was not memory specific, rather, apparent changes in behaviour or learning-rate could be attributed to stress hormones transferred between donor’s and recipients. *Eventually it became clear that RNA did play a part in memory, but it did not appear to code specific memories. It was, however claimed that a peptide associated with RNA during the process of extracting the RNA did encode specific memories. There was a great deal of confusion at the time about the role of these peptides. It became clear that these peptides were part of the chain leading to stress hormone production, and so the hypothesis of memory specific biochemicals died.*

Wilder Graves Penfield (January 26, 1891 – April 5, 1976) was a pioneering neurosurgeon once dubbed “the greatest living Canadian”. He expanded brain surgery’s methods and techniques, including mapping the functions of various regions of the brain. Penfield devoted a lot of his thinking to mental processes, contemplating whether there was any scientific basis for the existence of the human soul until his death.

Prompting memory recall during surgery via temporal lobestimulation. Penfield was the subject of a memorable Heritage Minute, dramatizing his development of the Montreal procedure. When Dr. Penfield stimulates the seizure-producing part of her brain, an epileptic patient exclaims: “I can smell burnt toast!” This Heritage Minute was widely shown and again made Penfield a household name in Canada.



Penfield was a groundbreaking researcher and original surgeon. With his colleague Herbert Jasper, he invented the Montreal procedure in which he treated patients with severe epilepsy by destroying nerve cells in the brain where the seizures originated. Before operating, he stimulated the brain with electrical probes while the patients were conscious on the operating table (under only local anesthesia), and observed their responses. In this way he could more accurately target the areas of the brain responsible, reducing the side-effects of the surgery.

This technique also allowed him to create maps of the sensory and motor cortices of the brain (see cortical homunculus) showing their connections to the various limbs and organs of the body. These maps are still used today, practically unaltered. Along with Herbert Jasper, he published this work *Epilepsy and the Functional Anatomy of the Human Brain* in 1951. Penfield’s maps showed considerable overlap between regions (i.e. the motor region controlling muscles in the hand sometimes also controlled muscles in the upper arm and shoulder) a feature which he put down to individual variation in brain size and localisation; it has since been established that this is due to the fractured somatotropy of the motor cortex.

Penfield reported that stimulation of the temporal lobes could lead to vivid recall of memories. Oversimplified in psychology publications, including the best-selling *I’m OK, You’re OK*, this seeded the common misconception that the brain “records” experiences in perfect detail, although these memories are not available to conscious recall. The reported episodes of recall occurred in less than five percent of his patients, and these results have not been replicated by modern surgeons. His development of the Penfield dissector, the neurosurgical technique that produced the less injurious meningo-cerebral scar, became widely accepted in the field of neurosurgery and remains in regular use.

Disturbances of Memory

The disturbances of memory are divided into two main groups – quantitative and quality (see fig. 3). Quantitative disturbances as hypermnesia and hypomnesia could be a specific feature for some persons, that have no pathology – for instance some genuine persons are with unusually expressed specific memory for music, historical events, learning languages and s.o.

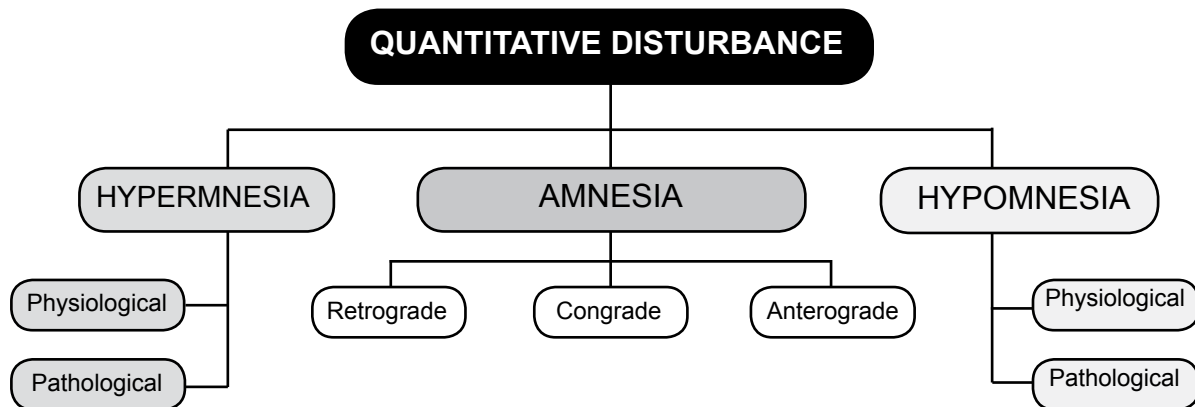


Fig. 3. Quantitative disturbances of memory

Hypermnesia and hypomnesia could be connected with various psychiatric disorders. These problems could be noticed by their relatives. We can say that their memory could be increased or decreased only if we know their memory capacity before their illness.

Hypermnesia and hypomnesia could be spread among some disturbances as:

The word “hypermnesia“, known since 1882, was created in New Latin as the combination of “hyper” – meaning “beyond” or “super” and “mnesia” – patterned after “amnesia”. It derives from Greek word “mnasthai”, meaning “to remember”.

Hypermnesia	Hypomnesia
Normal state for healthy person Head trauma AD - Manic state Drugs – amphetamines, Cocain (Freud) Mental Retardation (specific memory) During sleep During Hypnosis Situation	Normal state for some healthy persons Head trauma; AD – depressive phase; Drugs – long use of tranquilizers or stimulants; Neurosis; Mental retardation; Dementia; After anesthesia, insulin and electro convulsive therapy.

Case – Maria is a student in medicine. During the session in June she had no difficulties in her examines, and her marks were excellent. She decided one of the examine to take in September. But she was astonished, that she could not prepare and she received a poor mark. She was very depressed and she made tentamen suicide. When she was consulted with the psychiatrist she tolled to him: “I wonder, in June I read the material 1-2 times, each evening I went to discotheque, I had many friends and decided the most easier examine to take in September. And in September I had no ability to learn the material. I read the textbook 4 times, but could not understand anything. I decided that I am very foolish girl and the best for me in that period of time was to die....”

Do You Know that...?

The most famous individual to exhibit hypermnesia was a Russian man, known as “S”, whose amazing photographic memory was studied for 30 years by a psychologist in the early part of the 20th century. “Hypermnesia” sometimes refers to cases like that of “S”, but it can also refer to a specific instances of high tended memory (such as trauma or hypnosis) experienced by people whose memory abilities are unremarkable under ordinary circumstances. This man had exceptional mnemonic ability seemed largely to depend on an outstandingly vivid visual memory, almost eidetic, “photographic” memory. He demonstrated an unusual degree of synesthesia. He reported that stimulation through one sense could lead to experiences in another sense. For example he saw vivid flashes of colours when he was listening music. He was with highly power of concrete visualization made possible unusually of memory far beyond the ordinary persons, but he exhibited weakness in abstract thinking.

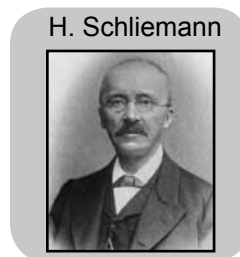
It is known that **Caesar and Alexander the Great** knew visually and the names of 30000 of their soldiers. The famous Bulgarian poet Nikola Vapzarov learned “Foust” by Goethe at the age of 4. Some composers and musicians demonstrated an exceptional auditory memory (Mozart, Beethoven). Bulgarian violinist Vasko Abadjiev on his 6th birthday learned for one day Mozat’s concert.



Wolfgang Amadeus Mozart (b. 27.01.1756) – Mini Biography (TV-14; 03:05) Wolfgang Amadeus Mozart learned the piano at the age of three, and soon developed his skills in all musical forms. Widely recognized as one of the greatest composers of all time, he produced over 600 works. When Wolfgang was four (as noted by his father in his sister’s music book), he was playing the same pieces as his sister. At the age of five, he wrote a miniature andante and allegro (K. 1a and 1b). In 1762, Leopold took the young Mozart and Maria Anna on tour through-out Vienna performing for nobles and ambassadors. Later in 1763, they began a three-and-a-half year tour throughout Germany, France, England, Switzerland, and other countries.

**Heinrich Schliemann
(born 1820)**

- 11 years - wrote essay in Latin for Troya,
- 36 years he spoke the languages:
 - Arabian;
 - English - for 2-3 weeks;
 - French;
 - Holland;
 - Italian;
 - Russian;
 - Portugal;
 - Greece & Ancient Greece for 3 months;
- He married for Sophia, a girl form Greecel



The golden mask



His wife



Exceptional memory capacity is occasionally observed among mathematics, physics, and linguistics. A mathematic professor in Edinburg could reproduce a list of 25 unrelated words after only a brief effort to memorize.

Amnesia “amnesiac” – is a memory disorder. Essentially, amnesia is loss of memory.

Amnesia (from Greek ἀμνησία from ἀ - meaning “without” and μνήμη memory) is a deficit in memory caused by brain damage, disease, or psychological trauma. Amnesia can also be caused temporarily by the use of various sedatives and hypnotic drugs.

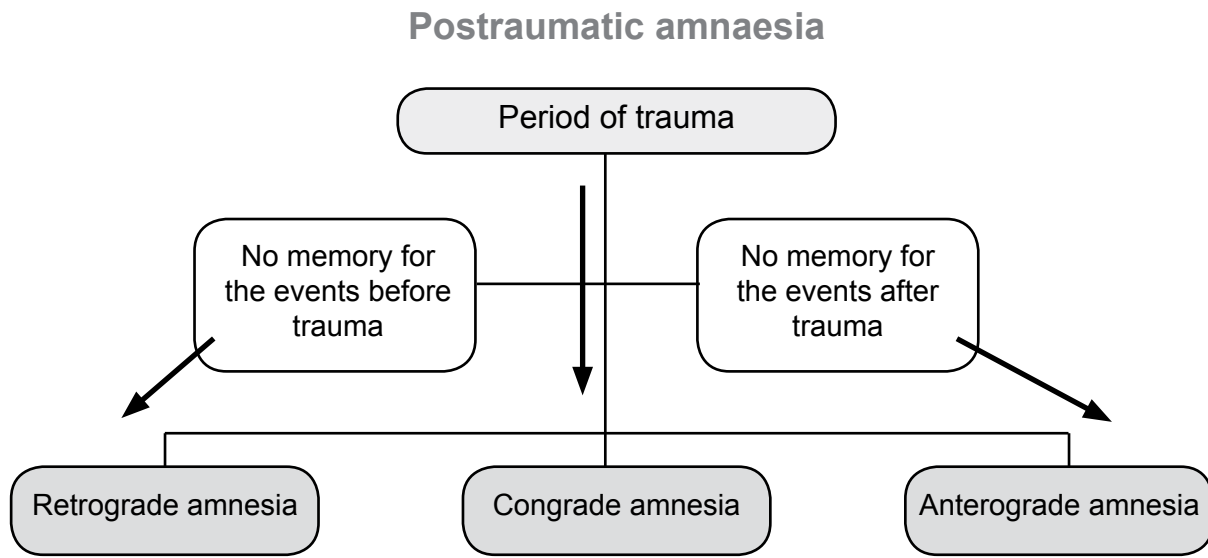


Fig. 4. Postrumatic amnaesia

There are two main types of amnesia:

- **retrograde amnesia** – it is the inability to create new memories due to brain damage, while long-term memories from before the event remain intact. The brain damage can be caused by the effects of long-term alcoholism, severe malnutrition, stroke, head trauma, surgery.

***Patient GD.** after parathyroidectomy, received a severe loss of blood in his left lobe. Even five days after being released from the hospital he was unable to remember what had happened to him. Aside from memory impairment, none of his other cognitive processes seemed to be affected. His memory problems were presented for the next 9.5 years until his death.*

- **anterograde amnesia** – it is inability to recall memories before onset of amnesia. One may be able to encode new memories after the incident. Retrograde is usually caused by head trauma or brain damage to parts of the brain besides the hippocampus. The hippocampus is responsible for encoding new memory. Episodic memory is to be affected than semantic memory. The damage is usually caused by head trauma, cerebrovascular accident, stroke, tumor, hypoxia, encephalitis, or chronic alcoholism.

***The case Henry Molaison (HM)** – HM, suffered from severe epilepsy. Neurologists could not break off his seizures by drugs, so they turned to neurosurgeries. They did lobectomy. His epilepsy improved, but he lost the ability to form new long-term memories (anterograde amnesia). He exhibited normal short-term memory ability. If he was given a list of words, he would forget them in a few minutes. Once HM stopped thinking about the lists he was unable to recall them again from long term memory.*

Acquisition of new declarative information – some patients with anterograde amnesia can still acquire some semantic information, even though it might be more difficult and might remain rather unrelated to more general knowledge. HM could accurately draw a floor plan of the home in which he lived after surgery, even though he had not lived there in years. The patients couldn't form new episodic memories is because a region of the hippocampus was lesioned, and thus the hippocampus couldn't make connections to the cortex.

In addition, specific areas of the **hippocampus** are involved with memory. Research has also shown that when areas of the **diencephalon** are damaged, amnesia can occur. Recent studies have shown a correlation between deficiency of RbAp48 protein and memory loss. Scientists were able to find that **mice with damaged memory have a lower level of RbAp48 protein** compared to normal, healthy mice. In people suffering with amnesia, the ability to recall **immediate information** is still retained, and they may still be able to form new memories. However, a severe reduction in the ability to learn new material and retrieve old information can be observed. Patients can learn new procedural knowledge. Amnesic patients also retain substantial intellectual, linguistic, and social skill despite profound impairments in the ability to recall specific information encountered in prior learning episodes.

Ribot's Law gave the idea to the researchers, those short-term and long-term memories are two different processes.

HM was able to learn things through his **implicit memory**. The psychologists pleased him to draw something on a sheet of paper, but to look at the paper using a mirror. Though he could never remember ever doing that task, he would improve after doing it over and over again. This showed the psychologists that he was learning and remembering things unconsciously. Studies were completed consistently throughout HM's lifetime to discover more about amnesia. Researchers followed-up him for a long period of time. After 14 years, HM still could not recall things that have happened since his surgery. However, he could still remember things that happened prior to the operation. Researchers also found that, when asked, HM could answer questions about national or international events, but he could not remember his own personal memories. After his death the scientists discovered the areas of the brain that had the damage which caused his amnesia. This case study provided important insight to the areas of the brain that were affected in **anterograde** amnesia, as well as how amnesia works.

There are 3 Categories of amnesia

Head trauma	<i>Head injuries, traumatic events (example: seeing something devastating to the mind), or physical deficiencies (example: atrophy of the hippocampus). Retrograde and Anterograde amnesia are more often seen from events like this, an exact example of a cause of the two would be electroshock therapy, which would cause both briefly for the receiving patient.</i>
Traumatic events	<i>Traumatic events dependents on what the person finds to be traumatic. For example the dissociative amnesia - when the person forgets an event that has deeply disturbed them. An example would be a person forgetting a fatal and graphic car accident involving their loved ones.</i>
Physical deficiencies	<i>They are different from head trauma as physical lean more toward passive physical issues. The difference would be having surgery that removes part of your brain, this would be active and thus head trauma, while the surgery caused the surrounding areas to atrophy, which is passive. HM is a great example of physical deficiencies as parts of his brain began to atrophy after his surgery</i>

Among specific causes of amnesia are the following:

- **Electroconvulsive therapy (ECT)** – in which seizures are electrically induced in patients for therapeutic effect can have acute effects including both retrograde and anterograde amnesia.
- **Alcohol can both cause blackouts** and have deleterious effects on memory formation.

Post-traumatic amnesia (PA)

PA is due to a head **injured** (example: a fall, a knock on the head). Traumatic amnesia is often transient, but may be permanent or either anterograde, retrograde, or mixed type. The extent of the period covered by the amnesia is related to the degree of the damage. **Dissociative amnesia** results from a psychological cause as opposed to direct damage to the brain caused by head injury, physical trauma or disease. Dissociative amnesia can include:

- **Repressed memory (“Psychogenic Amnesia”)** refers to the inability to recall information, usually about stressful or traumatic events in persons’ lives, such as death, divorce, calumny, earthquake, flood. The memory is stored in long-term memory, but access to it is impaired because of psychological defense mechanisms. Persons retain the capacity to learn new information and there may be some later partial or complete recovery of memory.
- **Dissociative fugue** – It is caused by psychological trauma and is usually temporary, unresolved and therefore may return. An individual with dissociative fugue disorder is unaware or confused about his or her identity and will travel in journeys away from familiar surroundings to discover or create new identities. It is defined as “one or more episodes of amnesia in which patients cannot recall some or all of their past and either lose their identity or form a new identity. The episodes, called fugues, result from trauma or stress. Dissociative fugue often manifests as sudden, unexpected, purposeful travel away from home.” While popular in fiction, it is extremely rare.
- **Posthypnotic amnesia** – occurs when events during hypnosis are forgotten, or where past memories are unable to be recalled. The failure to remember those events is induced by suggestions made during the hypnosis.
- **Lacunar amnesia** is the loss of memory about one specific event. It could be noticed in psychoses, and in some cases in healthy persons. This disturbance could appear after very serious life events, that deeply damage their personality, and they did not want to accept the reality.

***Case MA** – she is 54 years old female with schizoaffective psychoses. She had a good family, and her husband supported her always during her schizophrenic episodes. They loved each other, and they spend their holidays always together. Two years ago her husband received cardiac infarct, and his doctor advised him to divorce, because his wife was with schizophrenia. After the divorce she made a very serious relapse. As she was infected additionally she died by sepsis. It was strange that during her psychotic episode and before her death she had amnesia about the period of their divorce. She spoke with great love for her husband, and she never mentioned about the divorce.*

- **Childhood amnesia** (infantile amnesia) is inability to remember events from one’s own childhood. *Sigmund Freud notoriously attributed this to sexual repression.* The modern scientific approaches generally attribute it to aspects of brain development or developmental psychology, included language development – people don’t easily remember pre-language events.

- **Transient global amnesia** – this form of amnesia is distinct in that abnormalities in the hippocampus can sometimes be visualized using a special form of magnetic resonance imaging of the brain known as diffusion-weighted imaging (DWI). Symptoms typically last for less than a day and there is often no clear precipitating factor or any other neurological deficits. The cause of this syndrome is not clear. The hypothesis of the syndrome includes transient reduced blood flow, possible seizure or an atypical type of migraine. Patients are typically amnesic of events more than a few minutes in the past.
- **Situation-Specific amnesia** can arise in a variety of circumstances (e.g., committing an offence, child sexual abuse) resulting in PTSD. It has been claimed that it involves a narrowing of consciousness with attention focused on central perceptual details and/or that the emotional or traumatic events are processed differently from ordinary memories.
- **Korsakoff's syndrome** can result from long-term alcoholism or malnutrition. It is caused by brain damage due to a vitamin B1 deficiency and will be progressive if alcohol intake. Other neurological problems are likely to be presented in combination with this type of amnesia. Korsakoff's syndrome is also known to be connected with **confabulation**. It should be noted that the person's short-term memory may appear to be normal, but the person may have a difficult time attempting to recall a past story, or with unrelated words, as well as complicated patterns.
- **Drug-induced amnesia** – is caused by injection of an amnesiac drug to help a patient forget surgery or medical procedures, particularly those not performed under full anesthesia, or likely to be particularly traumatic. Such drugs are also referred to as "premedicants." Benzodiazepines such as midazolam or flunitrazepam is the drug of choice, although other strongly amnesic drugs such as propofol or scopolamine may also be used for this application. Memories of the short time-frame in which the procedure was performed are permanently lost or at least substantially reduced, but once the drug wears off, memory is no longer affected.

Case – MN is a young 28 years old doctor. She had 4 surgery interventions for 12 days, and about 16 hours she was with anaesthesia. After an year she recovered, but she was astonished that could not remember the names of some everyday used drugs, and the names of her patients, that she treated before the operations. Three months later her amnesia was overcome and she had no more problems till her life. It was for a short period of time and the amnesia was connected with the influence of the anaesthetic drugs.

- **Prosopamnesia** is the inability to recognize or remember faces, even in the presence of intact facial recognition capabilities. Both acquired and inborn cases have been documented.

Case – KK is a 2 years old girl. After her birth she was crying during all the day and night. No physical disturbances were found. Nobody from the family could calm her. "We can not sleep at the day and all the night, because the child was crying always". When she came in the clinic I gave her 2 drops of Largactil. The child became little quite. Than I gave her mother the bottle with the medicament and tolled her to give the child 2-3 drops each 1-2 hours. After 20 days the mother ringed me up the telephone and said: "Now everybody from the family could sleep in the night". May be the little baby has a rare psychiatric symptom of prosopamnesia, and she could not remember the faces of her parents. The appearance of her parents every time for her look liked unknown, and she was frightened, because she could not recognise them. But after medication she became quiet and could recognise them by their voices.

- **Transient epileptic amnesia** is a rare and unrecognized form of temporal lobe epilepsy, which is typically an episodic isolated memory loss. It has been recognized as a treatment-responsive syndrome congenial to anti-epileptic drugs.

PARAMNESIA

The term **paramnesia** was introduced by a German psychiatrist, Emil Kraepelin, in 1886 to denote errors of memory. He distinguished three main varieties; one he called simple memory deceptions, as when one remembers as genuine those events imagined or hallucinated in fantasy or dream. This is not uncommon among confused and amnesic people and also occurs in paranoid states.

DEFINITION – paramnesia is a disturbance of memory in which real facts and fantasies are confused. Thus, a patient was unable to tell whether he had dreamed or actually experienced that which he was given an account. Paramnesia is a common phenomenon in dreams, and in a schizophrenia where it often appears, as false recognition such as *deja fait*, *déjà vu* etc. Such paramnesiae may also occur in the normal persons.

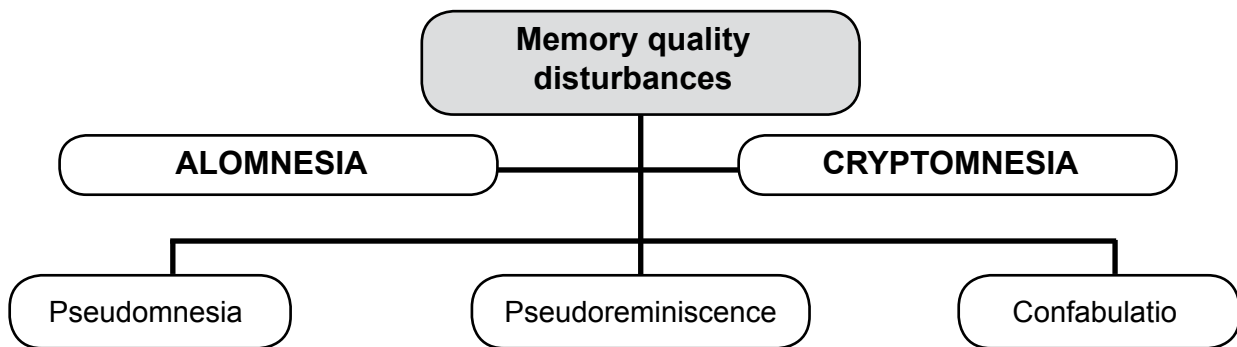


Fig. 5. Quality disturbances of memory

Cryptomnesia occurs when a forgotten memory returns without it being recognized as such by the subject, who believes it is something new and original. It is a *memory bias* whereby a person may falsely recall generating a thought, an idea, a song, or a joke, not deliberately engaging in *plagiarism* but rather experiencing a memory as if it were a new inspiration.

In the first empirical study of cryptomnesia, people in a group took turns generating category examples (e.g., kinds of birds: parrot, canary, etc.). They were later asked to create new exemplars in the same categories that were not previously produced, and also to recall which words they had personally generated. People inadvertently plagiarized about 3–9% of the time either by regenerating another person’s thought or falsely recalling someone’s thought as their own. Similar effects have been replicated using other tasks such as word search puzzles and in brainstorming sessions.

The second type of cryptomnesia results from an error of authorship whereby the ideas of others are remembered as one’s own. In this case, the plagiarizer correctly recognizes that the idea is from an earlier time, but falsely remembers having been the origin for the idea (or, having lost the specific memory of encountering it in print or conversation, assumes that it “came to” the plagiarizer as an original idea). Various terms have been coined to distinguish these two forms of plagiarism – occurrence forgetting vs. source forgetting and generation errors vs. recognition errors.

The two types of cryptomnesia appear to be independent: no relationship has been found between error rates and the two types are precipitated by different causes.

Skinner described his own experience of self-**plagiarism**: “One of the most disheartening experiences of old age is discovering that a point you just made – so significant so beautifully expressed – was made by you published long ago.”

Some historical cases about cryptomnesia

Helen Keller compromised her and her teacher's credibility with an incident of cryptomnesia which was misapprehended as plagiarism. *The Frost King*, which Keller wrote out of buried memories of a fairytale read to her four years previously, left Keller a nervous wreck, and unable to write fiction for the rest of her life.

Nietzsche – Jung gives example in *Man and His Symbols*. Nietzsche's book *Thus Spoke Zarathustra* includes an almost word for word account of an incident also included in a book published about 1835, half a century before Nietzsche wrote. This is considered to be neither purposeful plagiarism nor pure coincidence: Nietzsche's sister confirmed that he had indeed read the original account when he was 11 years old; his later cognitive degeneration due to neurosyphilis, and his accompanying psychological deterioration (specifically, his increasing grandiosity as manifested in his later behavior and writings)

Byron – readers of Lord Byron's closet drama *Manfred* noted a strong resemblance to Goethe's *Faust*. In a review published in 1820, Goethe wrote, "Byron's tragedy, *Manfred*, was to me a wonderful phenomenon, and one that closely touched me. This singular intellectual poet has taken my *Faustus* to himself, and extracted from it the strangest nourishment for his hypochondriac humour. He has made use of the impelling principles in his own way, for his own purposes, so that no one of them remains the same; and it is particularly on this account that I cannot enough admire his genius." Byron was apparently thankful for the compliment; however, he claimed that he had never read *Faustus*.

Robert Louis Stevenson refers to an incident of cryptomnesia that took place during the writing of *Treasure Island*, and that he discovered this several years afterward: "I am now upon a painful chapter. No doubt the parrot once belonged to *Robinson Crusoe*. No doubt the skeleton is conveyed from *Poem*."

Umberto Eco described the rediscovery of an antique book among his large collection, which was similar to the main object in his novel *The Name of the Rose*. He had read this book in his youth, and almost had forgotten this fact.

Reduplicative paramnesia (RP)

The term **reduplicative paramnesia** was first used in 1903 by neurologist Arnold Pick to describe a condition in a patient with suspected Alzheimer's disease who insisted that she had been moved from Pick's city clinic, to one she claimed looked identical but was in a familiar suburb. To explain the discrepancy she further claimed that Pick and the medical staff worked at both locations. RP is the delusional belief that a place or location has been duplicated, existing in two or more places simultaneously, or that it has been "relocated" to another site. It is one of the *delusional misidentification syndromes* and, although rare, is most commonly associated with acquired brain injury, particularly simultaneous damage to the right cerebral hemisphere and to both frontal lobes.

Pseudologia fantastica (PF) – pseudoreminiscence

PF is a clinical syndrome characterized by fantasy construction, usually extensive, consisting of superstructure of some actualities erected upon a foundation of fantasy. PF is seen mainly in the so-called psychopathic group and in order acting-out types of disturbance, and appears often to arise in an attempt to produce an ego lift; the fantasy is believed only momentarily and is quickly dropped when the patient is confronted with contradictory evidence.

Confabulation – unconscious filling in memory by imaging or untrue experiences that have to bases in fact – most often with organic pathology, syphilis (*Tabes dorsalis*) – many famous persons (as Eduard Manet, Charles Baudelair, Guy De Maupassant), suffered from syphilis.

False recognition Retrospective falsification – Memory becomes unconsciously distort by being filtered through patient’s present emotional, cognitive and experiential state.

Déjà vu – illusions of visual recognition in which a new situation is incorrectly regarded as a repetition of previous memory.

Jamais vu – False feeling of unfamiliarity with a real situation one has experienced

Deja entendu – illusion of auditory recognition

Deja pense – illusion that a new idea, thought is recognized as a thought previously felt or expressed.

DEMENTIA

Dementia is the gradual deterioration of mental functioning that effects memory, mood, thinking, concentration, and judgment. These changes often affect a person’s ability to perform normal daily activity. Dementia is an illness that usually occurs slowly over time, and usually included a progressive state of deterioration.

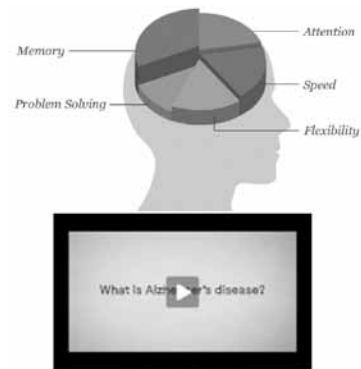
Everyone become forgetful from time to time: forgetting where you placed the car keys, not remembering to pick up an item at the grocery store, forgetting to return a friend’s phone call. As we aged we become increasingly forgetful. At least half of the persons over 65 noticed that they are more forgetful, in comparison with young age.

The earliest sings of dementia are usually memory problems, confusion, and changes in the way a person behaves and communicates.

Cognitive symptoms of dementia can include poor problem solving, difficulty learning new skills, and impaired decision making. Behavior changes can include fear, insecurity, anger, and often depression like symptoms.

Dementia is caused by various diseases and conditions that result in harmed brain cells. Brain cells can be destroyed by brain diseases, such as Alzheimer’s disease, or strokes (called vascular or multi-infarct dementia), which decrease blood flow to the brain.

Alzheimer’s disease is the most common cause of dementia.



VIDEO: Understanding Alzheimer’s Disease

Forgetting a friend’s name or not remembering a lunch date is something that most people without dementia do from time to time. Persons with early dementia might repeatedly forget names or plans, and forget something that happened the previous day, but they recall in details events that happened many years ago, for instance in early school period.

In order to distinguish the ordinary forgetfulness that comes with aging from more serious problems like Alzheimer’s disease, it helps to consider some key symptoms of mild cognitive deficit and the early stages of dementia.

Sensory memory

Sensory memory holds sensory information for less than one second after an item is perceived. The ability to look at an item and remember what it looked like with just a split second of observation, or memorization, is the example of sensory memory. It is out of cognitive control and is an automatic response. With very short presentations, participants often report that they seem to “see” more than they can actually report.

George Sperling in **1963** did the first experiments of sensory memory) using the “partial report paradigm”. Subjects were presented with a grid of 12 letters, arranged into three rows of four. After a brief presentation, subjects were then played either a high, medium or low tone, cuing them which of the rows to report. Based on these partial report experiments, Sperling was able to show that the capacity of sensory memory was approximately 12 items, but that it degraded very quickly (within a few hundred milliseconds).

Three types of sensory memories exist: *visual information; echoic memory* (auditory information); *haptic memory*.

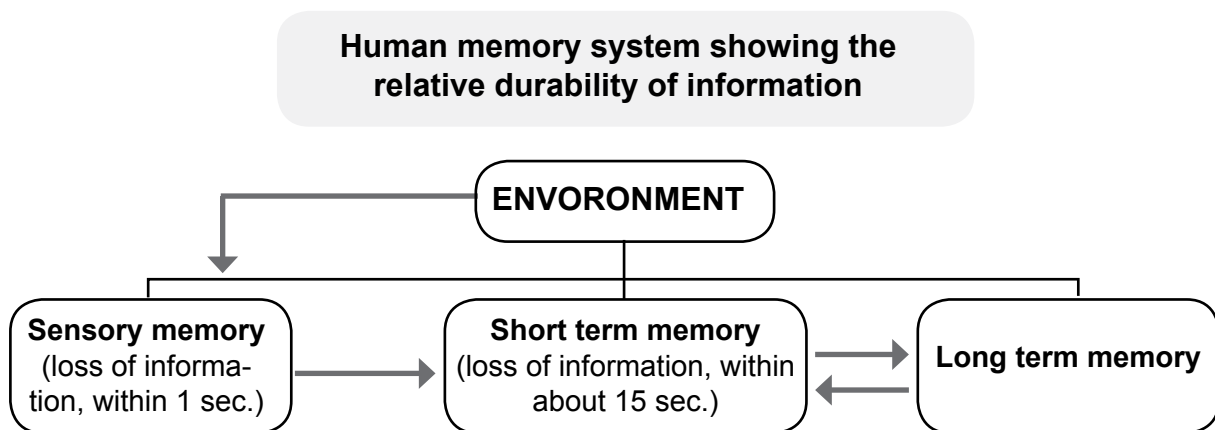


Fig. 6. Short and long term memory

Short-term memory

It allows recall for a period of several seconds to a minute without rehearsal. Its capacity is also very limited: experiments showing that the store of short-term memory was 7 ± 2 items. Modern estimates of the capacity of short-term memory are lower, typically of the order of 4-5 items; however, memory capacity can be increased through a process. Short-term memory is believed to rely mostly on an acoustic code for storing information, and to a lesser extent a visual code. **Conrad (1964)** found that test subjects had more difficulty recalling collections of letters that were acoustically similar (e.g. E, P, D). Confusion with recalling acoustically similar letters rather than visually similar letters implies that the letters were encoded acoustically. Conrad’s study, deals with the encoding of written text; thus, while memory of written language may rely on acoustic components, generalizations to all forms of memory cannot be made.

Long-term memory

The storage in sensory memory and short-term memory generally has a strictly limited capacity and duration, which means that the information is not retained indefinitely. By contrast, long-term memory can store much larger quantities of information for potentially unlimited duration (sometimes a whole life span). Its capacity is immeasurably large.

For example, given a random seven-digit number we may remember it for only a few seconds before forgetting, suggesting it was stored in our short-term memory. On the other hand, we can remember telephone numbers for many years through repetition; this information is said to be stored in long-term memory.

While short-term memory encodes information acoustically, long-term memory encodes it semantically: **Baddeley (1966)** discovered that, after 20 minutes, test subjects had the most difficulty recalling a collection of words that had similar meanings (e.g. big, large, great, huge) long-term. Another part of long-term memory is episodic memory, “which attempts to capture information such as ‘what’, ‘when’ and ‘where’”. With episodic memory, individuals are able to recall specific events such as birthday parties and weddings.

Psychophysiology of short-term memory and long-term memory

Short-term memory is supported by transient patterns of neuronal communication, dependent on regions of the *frontal lobe* (especially *dorsolateral prefrontal cortex*) and the *parietal lobe*.

Long-term memory is maintained by more stable and permanent changes in neural connections widely spread throughout the brain. **The hippocampus** is essential (for learning new information) to the consolidation of information from short-term to long-term memory, although it does not seem to store information itself. **Without the hippocampus, new memories are unable to be stored into long-term memory, as learned from the patient.**

Research has suggested that long-term memory storage in humans may be maintained by DNA methylation, or prions.

Criticisms of Memory Experiments

Almost all of the studies on memory were done in laboratories – mainly to repeat several words, or recalling lists of words and numbers, an attempt to memorize and recall a list of unconnected words in their daily lives. The low ecological validity of lab experiments could be explained with the fact that they are not realistic or true to life, as the laboratory is not a real situation. Many experiments designed to investigate memory have been criticized for having low ecological validity.

What is Your manner of memory

1. Visual memory The 1st task is to remember 16 “homo signs” – symbols, used by migrant workers in US to communicate between themselves.	2. Integrated memory skills – Your ability to apply all of your visual, associative, verbal and imaginative memory skills will be put to the list in this text challenge.	3. Integrated memory skills Your ability to apply all of your visual, associative, verbal and imaginative memory skills will be put to the list in this text challenge.	4. Learning list This exercise tests your ability to memorize sequences of events.
5. Verbal memory — learning languages Test — you count 5 towns and the persons must repeat them. After 5 min. They must repeat the words.	6. Logical memory Mathematics, Physics, chemistry Musician memory	7. Remembering objects Now, give yourself two minutes to look at the collection of objects. Write down. In any order, as many objects as you can remember In two minutes. You get one point for each correctly recalled item .	8. Sensory memory- touch the hot stove. 9. Moving Memory — dancers, artist, ballerina. 10. Memory connected with association

1. Visual memory

The 1st task is to remember 16 “homo signs” – symbols, used by migrant workers in US to communicate between themselves.

You have 2 min. to learn the appearance of these signs, and 2 min. to draw them from memory.

You get one point for each correct symbol, with half a point any near -misses.

This memory is typical for painters, as Leonardo da Vinci, Russian artist Vereshchagin, s. o.

The 3 largest Japanese newspapers

When you see the titles of these newspapers can you remember/write them easily?

Asahi Shimbun 朝日新聞 あさひしんぶん
Mainichi Shimbun 毎日新聞 まいにちしんぶん
Yomiuri Shimbun 読売新聞 よみうりしんぶん

It is possible to learn these written text for 10 minutes? But can Japanese learn easily Bulgarian language?

3. Learning languages

The idea is to test your ability to get our head around the unfamiliar. You must learn for 4 min. 20 Swahili words. After that for 2 min. you must supply the Swahili when prompted with the English. You will get 1 point for each near-miss.

Some persons have natural ability in learning to be a good linguist (as Heinrich Shliman) who learned about 11 foreign.

4. Learning lists

This exercise tests your ability to memorise sequences of events. Between the two world wars, there were 20 winners of the FA Cup – all familiar teams. (You don't need to be into football for this challenge.) You have two minutes to learn the correct chronological sequence of the FA Cup winners, and two minutes to fill in the table on the answers PDF. You get one point for each correct answer and five extra points if you have no interest in football.

Sensory memory

It is a momentary lingering of sensory information after stimulus has been removed. (If you touch the palm of your hand with the point of the pencil, for instance, you continue to feel the sensation for several seconds after the point is withdrawn.)

2. Integrated memory skills

Your ability to apply all of your visual, associative, verbal and imaginative memory skills will be put to the list in this text challenge. Your task is to learn in 4 min. the names of 25 tropical fish. After 3 min. you must to fill them in a table. You will get 1 point for each correct answer and 1/2 a point for any near-misses.

In ordinary practice – the psychologist count the names of 5 towns or 5 rivers, countries, fruits and s. o. The examined person must repeat them immediately. After 10 min. he must repeat them in the same order

Short term memory

It is far more durable than sensory is. Short term memory is believed to contents of your conscious awareness – what you are actively thinking about at any particular time. It could be a new stimulus you have just encountered, or it could be information retrieved from long-term storage.

Long term memory

Long term memory in contrast, can store things indefinitely without active effort. It can be thought of as a library of information, and its capacity is believed to be virtually limitless.

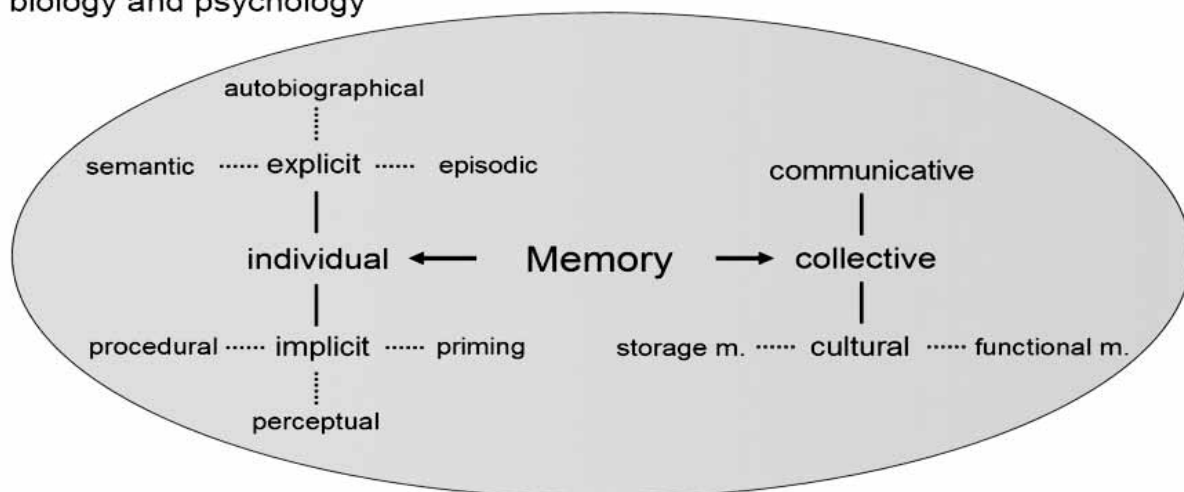
Marijuana and Memory

During the last decade the scientists are working about the negative and positive effect on brain by the use of Marijuana. It is known that it is used for the treatment of AIDS, cancer, glaucoma, multiple sclerosis, and chronic pain. It has an effect on the memory, and emotions of a persons central nervous system.

Marijuana is attached to brain's nervous and interfering with normal communication between the neurons. If one nerve is supposed to assist one in retrieving, a short-term memory, cannabinoids receptors make them do the opposite. So if one had to remember what he did 5 minutes ago, after smoking a high dose of marijuana, he had trouble. Marijuana plant contains 400 chemicals and 60 of them are cannabinoids, which are psychoactive compounds that are produced inside the body after cannabis is metabolized. It affects the brain by binding to and activating specific receptors, known as cannabinoid receptors. These receptors controlled memory, thought concentration, time and depth, and coordinated movement. THC also affect the production, release or re-uptake (a regulating mechanisms) of various neurotransmitters. Neurotransmitters are chemical messenger molecules that carry signals between neurons. Some of these affects are personality disturbances, depression and chronic anxiety. Psychiatrists who treat schizophrenic patient advice them not to use this drug, because it can trigger sever mental disturbances, and can cause a relaps.

*When one's memory is affected by high dose of marijuana, short-term memory is first to be triggered. Marijuana' damage to short-term memory occurs, because THC alters **the way in which information is processed by the hippocampus, a brain area responsible for memory formation.*** Hippocampus is very important brain structure for the memory, leaning, and the integration of sensory experiences with emotions and motivation. When THC attaches to receptors in the hippocampus, it weakness the short-term memory, and damages the nerve cells by creating structural changes to the hippocampus region of the brain. The use of high dose of this substance does not permit to be registered a new information for more than a few minutes. It decreased the activity of nerve cells too. It affected **recognition memory**, the ability to recognize correct word and the ability to **freely recall** words from a list that has been presented. Cognitive problems are often spread among the users (**A.Ejelonu, 2004**). Marijuana influenced on the **emotions** as uncontrollable laughter one minute and paranoia the next. It is connected with limbic system. It caused also euphoria, increased heart rate, motor disturbances, panic attacks. The effect of happiness is short. **Hallucinations** – more spread among users.

biology and psychology



social and cultural studies

Case of 21 years student with marihuana and heroin – Mira lives together with her parents. She is a student in the 1st course. She used psychoactive drugs (marijuana several times, when she was 16 years old and the last year from time to time heroin. Her disorder begins suddenly on the 1st of June, 2004. Her mother noticed that her behavior was strange, when they were shopping. When she fit on the cloths she dressed and undressed in front of the passing people without having the feeling of shame. She was with high mood, she joked and speaks loudly. When her mother noted her that her behavior is not correct, she said, that she does not feel ashamed of the other people. During the night she became very agitated, she could not recognize her mother and her father. She spoke nonsense, she was not orientated – did not know the day of the week, the date, the season of the year. After that she became torpid, her pupils were very wide. She was in stupor – did not move, did not speak, did not eat. Her parents made a consultation with medical service and first she was examined with various tests for intoxication. The laboratory tests show that she had high values of Parkisan. After consultations with various specialists she was hospitalized in the Department of Psychiatry. Psychiatric status – her movements were suppressed, poor orientation for personality, disorientation for time and place. Hyperbulia, hyperthymia, incoherence thinking, eholalia, echpraxia.

On the next day she developed catatonic stupor. As the classical therapy with neuroleptic was without any effect, we decided to continue with ECT (electro-convulsive therapy). After the 4th procedure she received seizer. So we had to continue again with neuroleptic. For a period of one year she did not speak with anybody, she could not control her defecation and urine and was with pampers, the communication was only by mimics and gestures. Later when we asked her short questions and her answer had to be with “Yes” or “No”, she gave meaningless answers by shaking her head. She could not self-service. At home she had no interest in music, TV, books, newspapers, and friends. After an year she began to recover slowly. First she begin to answer to our questions in written form, but the letters of the words were written vertical. Later her answers were with “Yes” or “No”. Gradually her writing and her speech recovered, her memory also was improved. Two years after that she was stabilized and continued her education.

Her psychic state with various psychiatric symptoms and disturbances of memory were connected with the use of marihuana and heroin.

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5. Thinking

Thinking is the process of reflection on objective reality; the highest level of human cognition. Although the sole source for thinking is sensations, thinking transcends the limitations of direct sensory reflection and enables the human being to receive knowledge about objects, qualities, and relationship of the real world that can not be sensed directed. (F. Engels)

Thinking is a subject matter of study in the theory of knowledge and logic, in psychology, and in neurophysiology. In cybernetics it is studied in connection with problems of the technological simulation of mental operations. (The Great Soviet Encyclopedia, 1979).

Thinking disorders

Normal thinking refers to the ideation components of mental activity, processes used to imagine apprise, evaluate, forecast, plan, create and will. Thinking disorders are of great importance in the differential diagnostics of mental illness.

Thinking disorders are characterized with Inability to distinguish reality from fantasy, impaired reality testing with the creation of a new reality. Thinking disorders are reflected in speech, writing, and representational creativity.

The thinking disturbances could be divided into 3 main groups:

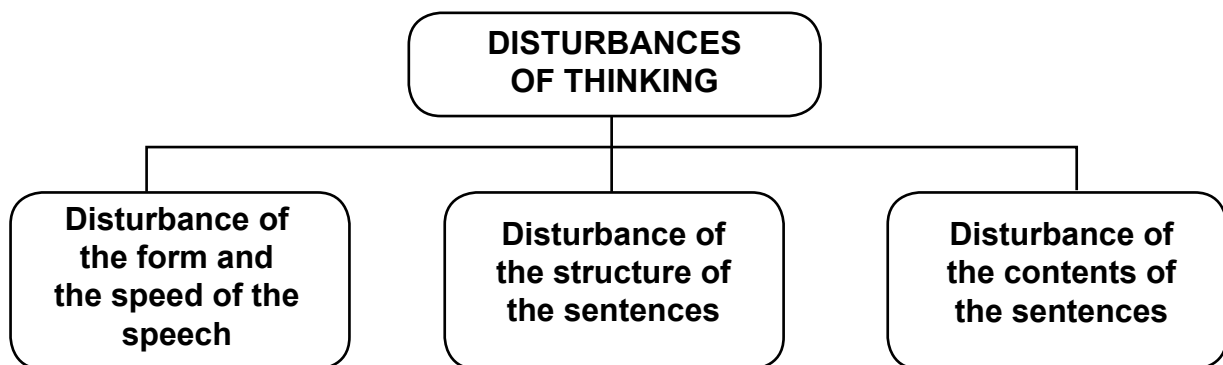


Fig. 1. Disturbances of thinking

I. Disturbances of form and the speed of the speech

In considering whether an individual has thought disorders, patterns of their speech are closely observed. Although it is normal to exhibit some of the following during times to extreme stress (e.g. cataclysmic event at the end of a war) it is the degree, frequency, and the resulting functional impairment that leads to the conclusion had the person being observed has a thought disorder.

During our conversation with the patient our first impression is about the speed of his speech, and the grammar construction of the sentences. Significant changes in the speech of thought are possible. One can notice to emotionally excited persons, acceleration of flow of ideas that may reach the level of an undirected **“flight of ideas”**. A **retardation of thinking** is characterized with slow emergence of concepts, or by slow formation of ideas and judgments in depressions, neuroses, mental retardation.

II. Disturbances of the structure of thinking

- **Neologism** – neologism simulate coherent speech, because of the new word formations. This may involve of two words, that are similar in meaning or sounds, e.g. “I got so angry. I picked up a dish and threw it at the geshinker”. The expression of a revelatory message through unintelligible words (also known as speaking in tongues); not considered a disturbance in thought if associated with practice of specific religions.

- **Incoherence (word salad)** – speech that is unintelligible because, though the individual words are real words, the manner in which they are strung together results in incoherent gibberish, e.g. the question “Why do people comb their hair?” elicits a response like “Because it makes a twirl in life, my box is broken help me blue elephant. Is not lettuce brave? I like electrons, hello please!” Incoherence, inertia, in which a single idea or impression prevails (**perseveration**); and “getting bogged down”, or in which thinking is far the essential point is drowned in a mass of unnecessary details, or in which thinking is far from reality. The parallel flow of several different thoughts; sudden breaks of thoughts, and complete disjunction of the content of thinking. Thought that is generally not understandable; running together of thoughts or words with no logical or grammatical connection, resulting in disorganization. Perseveration-persistent repetition of words or ideas even when another persons attempts to change the topic e.g. “It’s great to be here in Plovdiv, Plovdiv, Plovdiv, Plovdiv... This may also involve repeatedly giving the same answer to different questions e.g. “Is your name Mina?”, “Yes”, “Are you in the hospital?”, “Yes”, “Are you a table?” Perseveration can include palilalia and logoclonia, and can be indication of organic brain disease such as Parkinsonism.

- **Verbigeration** – Meaningless repetition of specific words or phrase.

Case: MM is a girl of 18 years. She is hospitalized for the 1st time in the clinic with a schizophrenic disorder. When the psychiatrist asked her what has been happened with her, she answered: “Heat, sun, no air, nose... basket...”. Asking her, where is she, she tolled: “Here is a laboratory. I am not quiet of the birds”. She looked through the windows at the birds. Than continued: “The leaflets to munch like a lambkin, it is “L”, because begins with the letter “L”, I want peace, the letter is “P”, because begins with the letter “P”. I do not where is the piece of paper to clean my anus.... Look between your legs and if there is a blood, it is good....this my mother-in-law says....Puts your glasses....it is good. It is “A”, because there is a letter “A”.... Oh....oh...I have no strength. I must go to my bad to sleep...”

- **Circumstantiality** – inability to answer a question without giving expressive, unnecessary details. This differs from tangential thinking, in that the person does eventually return to the original point.

- **Tangentiality** – Wandering from the topic and never returning to it or providing the information requested. [9] e.g. in answer to the question “Where are you from?”, a response “My dog is from England. They have good fish and chips there. Fish breathe through gills.”

- **Clanging or Clang association** – Ideas that are related only by similar or rhyming sounds rather than actual meaning. This may be heard as excessive rhyming and/or alliteration. e.g. “Many moldy mushrooms merge out of the mildewy mud on Mondays.” “I heard the bell. Well, hell, then I fell.”

- **Blocking** – abrupt interruption in train of thought before a thought or idea is finished. The individual may not be able to continue his idea. This is a type of formal thought disorder that can be seen in schizophrenia.

- **Flight of ideas** – excessive speech at a rapid rate that involves fragmented or unrelated ideas. It is common in mania.

• **Echolalia** – echoing of another’s speech that may only be committed once, or may be continuous in repetition. Psychopathological repeating of words or phrases of one person by another. This may involve repeating only the last few words or last word of the examiner’s sentences. This can be a symptom of Tourette’s Syndrome. e.g. “What would you like for dinner?”, “That’s a good question. *That’s a good question. That’s a good question. That’s a good question.*”

II. DISTURBANCES OF THE STRUCTURE OF THOUGHT	1. Neologism	New word created by the patient
	2. Word salad	Incoherent mixture of words and phrases (after serious organic disorder)
	3. Circumstantiality	Indirect speech, characterized by an over inclusion of details and parenthetical remarks
	4. Tangentiality	Inability to have goal-directed associations of thoughts patient never gets from desired point to desired goal
	5. Incoherence	Thoughts that generally are not understandable – running together of thoughts or words with no logical or grammatical connection, resulting in disorganization.
	6. Perseveration	Persisting response to a prior stimulus after a new stimulus has been presented, often associated with cognitive disorders.
	7. Verbigeration	Meaningless repetition of specific words or phrase.
	8. Echolalia	Psychopathological repeating of words or phrases of one person by another.
	9. Flight of ideas	Rapid continuous verbalization or plays on words produce constant shifting from one idea to another.
	10. Clang association	Association of words similar in sounds but not in meaning; words have no logical connection, may include rhyming and punning.
	11. Blocking	Abrupt interruption in brain of thinking before a thought or idea is finished; after a brief pause the person indicates no recall of what was being said or was going to be said.
	12. Glossolalia	The expression of a revelatory message through unintelligible words spiking in tongue.

• **Glossolalia** – it is constructed from Greek word (γλωσσολαλία), itself a compound of the words glossa ((γλῶσσα), meaning “tongue” or “language and λαλέω (laleō)”, to speak, to talk, chat, prattle, or to make a sound. The word “glossolalia” for the 1st time was used by Frederic William Ferrar in 1979. It could be seen among people in trans during sleep, the structure of the phrases is not correct, typical for some psychiatric disorders.

Other disturbances of thinking include:

• **Alogia** – a poverty of speech, either in amount or content; it can occur as a negative symptom of schizophrenia, also in patients with mental retardation or dementia.

• **Illogicality** – Conclusions are reached that do not follow logically (non-sequiturs or faulty inferences). e.g. “Do you think this will fit in the box?” draws a reply like “Well duh; it’s brown, isn’t it?”

- **Derailment** (also loose association and knight's move thinking) – Ideas slip off the topic's track on to another which is obliquely related or unrelated. e.g. "The next day when I'd be going out you know, I took control, like uh, I put bleach on my hair in California."

- **Distractible speech** – during mid speech, the subject is changed in response to a stimulus. e.g. "Then I left San Francisco and moved to... where did you get that tie?"

- **Logorrhea (Volubility)** – copious, coherent, logical speech.

- **Evasive interaction** – attempts to express ideas and/or feelings about another individual come out as evasive or in a diluted form, e.g.: "I... er ah... you are uh... I think you have... uh... acceptable erm... uh... hair."

- **Loss of goal** – failure to follow a train of thought to a natural conclusion e.g. "Why does computer keep crashing?", "Well, you live in a stucco house, so the pair of scissors needs to be in another drawer."

- **Phenomenic paraphasia** – mispronunciation; syllables out of sequence e.g. "I slipped on the lice and broke my arm."

- **Pleasure of speech** – unrelenting rapid speech without pauses. It may be difficult to interrupt the speaker, and speaker may continue speaking even when a direct question is asked.

- **Self-references** – patients repeatedly and inappropriately refers back to self e.g. "What's the time?", "It is 7 o'clock. That's my problem".

- **Semantic paraphasia** – substitution of an inappropriate word e.g. "I slipped on the coat, on the ice I mean, and broke my book..."

- **Stilted speech** – speech is characterized by the use of words or phrases that are flowery, excessive, and pompous e.g. "The attorney comported himself indecorously".

- **Word approximations** – old words used in a new and unconventional way e.g. "His boss was a see over."

- **Thinking aside** – the patients loses himself in insignificant side association with the results that no unitary train of thoughts developed (mainly in schizophrenia).

- **Thinking associative** (Vorbeireden; taking past the point) – verbal catharsis that deals with immediate problems of patients in their everyday life, rather than with traumatic problems oriented in infancy.

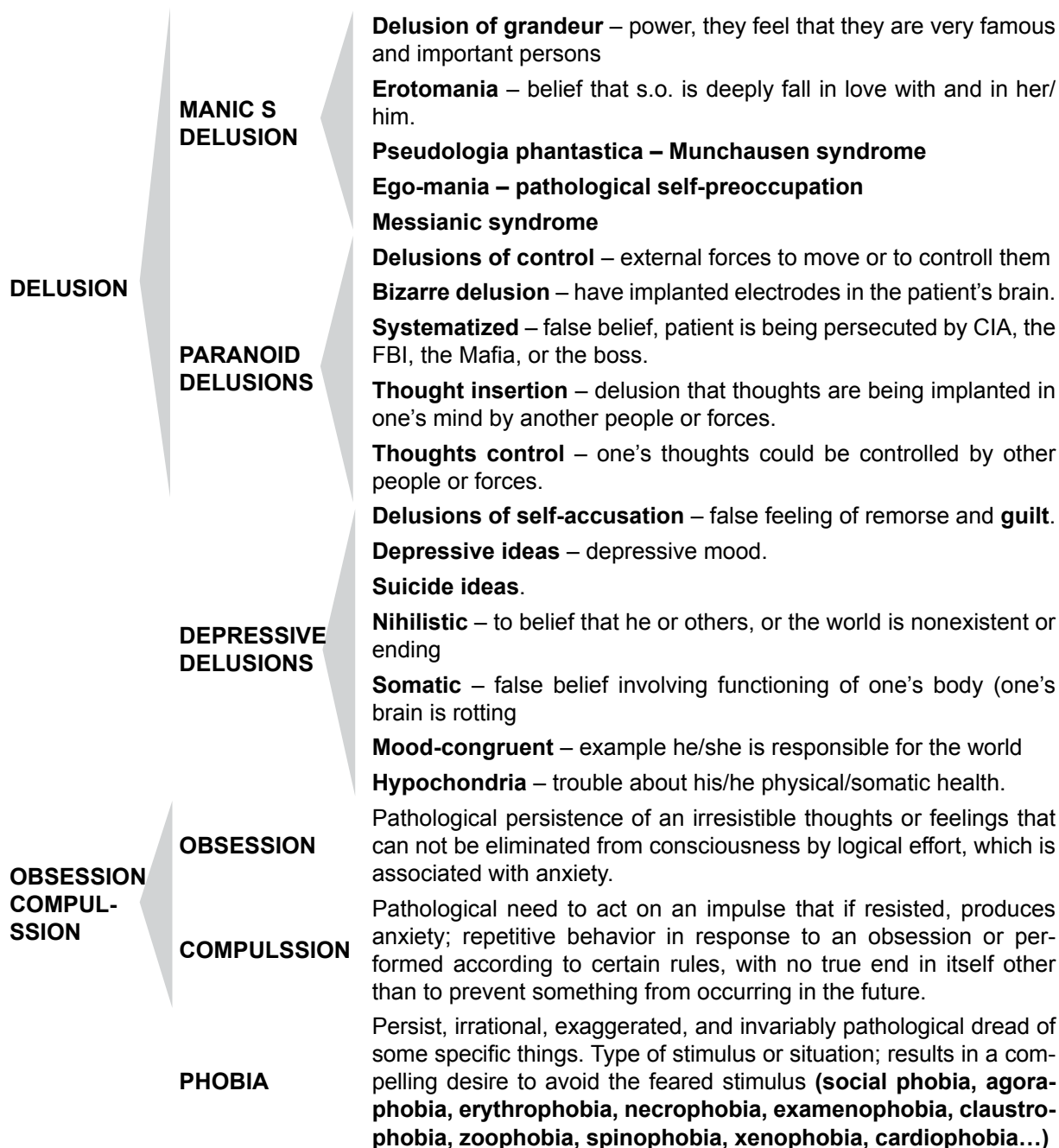
- **Free association** – is regressive in its nature, which is not the case with associative thinking.

- **Thinking fragmentation** – it is a disturbance in association, pathognomonic sign of schizophrenia in which even such basic concepts as "father" and "mother" become vague and obscure and the thinking processes become so confused that they can not result in a complete idea or action, but merely in vague movements. Bleuler called these primary symptoms of schizophrenia. He believed that it is no longer following the logical pathways indicated by past experience. Instead of associations easily take new and seemingly illogical and fantastical. So two ideas fortuitously encountered, are combined into one thought. Associations lack the concept of purpose. When the symptom is of mind degree it may be noticed only that the patient give generalized rather than precise answer.

- **Physiognomonic thinking – the 1st stage** in the development of thought in child is characterized that it animates objects and projects his Ego into them, as when he plays with a stick and calls it a horse. Piaget calls it a syncretic thinking. **The 2nd stage** is a concrete thinking, characterized by literalness and lack of generalizations. In this stage for example the word "table" refers not to the tables in general, but to the particular table in the subject's house. The 3rd stage developed abstract or categorized thinking, and the use of abstractions and generalizations is typical. It appears later.

- **Autistic thinking** – Preoccupation with inner world. Term used somewhat synonymously.

Disturbance of the contents of the sentences



Magical thinking – archaic, primitive, prelogical thinking, such as is seen in the unconscious of neurotics, in small children, in normal persons under conditions of fatigue, as antecedents of thought, in primitive persons, and in schizophrenic thinking. The speech and thinking of the schizophrenia are frequently more concrete and active than normal, not yet capable of realistic abstraction, and more a symbolic equivalent of action. Magical thinking is a form of unrealistic thought; thinking that is similar to that of preoperational phase of children (thoughts, words, or action can cause or prevent events).

Case MM is a medical sister. She had great ambitions. When she was at the age of 44 years she had many serious life events – her parents died, her daughter had a serious problems with her health, her husband wanted divorce. One day she found a strange piece of paper in front of her door of the flat. It was under the door mat. A very strange idea appeared in her mind. She thought that some body make a black magic and all troubles she connected with this. She did not know who did her the black magic, but thought that her mother-in-law wanted to destroyed and to damage her family. After this incident she could not sleep. She had terrible nightmarish. One month later she found out another strange piece of paper full with many black and other dark colours under her carpet in the guest room. She was very frightened and was afraid for the life of her daughter and for her own life. She had no idea how these pieces of paper appeared in her house. Ten days after that she listened voices that tolled her, that she and her daughter will be poisoned. She stopped to eat anything. She was sure that the voices tolled her the true. The voices were spoken that her husband and his mother wanted to poison her and her daughter.

One day she was very agitated and she was aggressive toward her husband, blamed him for her terrible state and took the knife with the idea to damage him. This was the reason for her first hospitalization. The psychiatrists established that she was suffering from Paranoid form of schizophrenia. Syndrome of auditory hallucinations.

Messianic syndrome – patients with this syndrome have the strange ideas that they have a special mission on the Earth. They received a message from God to save humanity from flood. Most of these patients have visual and verbal hallucinations.

On the picture: Jeane d'Ark speaks with Archangel Michael and San Ekaterina that told her that she will help the French people to send away the Englishmen and to help to crown the king.

**Do you think that Jeane D'Ark had a mes-
sianic syndrome?**



Paralogical thinking – preconscious thinking is not in accordance with reality. All of its features are primitive and archaic. First, since it is ruled by the emotions, and strive for the discharge of tension, it is full of wishful or fear-laden misconception. Second, it is carried out through the concrete pictorial images. Third it is magical type of thinking: “The object and the idea of the object, the object and a picture or model of the object are equated: similarities are not distinguished from identities; ego and non-ego are not yet separated. What happens to objects might (by identification) be experienced as happening to the ego, and what happens to the ego causes the same thing to happen to the object...” Last the think is symbolic and thus vague, for the world is experienced and apperceived in symbolic forms. Stimuli that provoke the same emotional reactions are looked upon as identical. Thus if penis and snake provoke the same emotions they are apprehended by a common conception: they are one and the same thing. Although illogical and in effective, this preconscious fantasy thinking is an attempt to master reality it does postpone immediate discharge reactions and attempts to anticipate reality and bring about a more adequate discharge of tensions. With the acquisition of words and the development of the faculty of speech, thinking becomes logical and organized. Words can be linked to idea. This is the decisive step in the final differentiation of conscious and unconscious and in the development of reality-testing.

Guy De Maupassant is an example for various psychopathological symptoms and syndromes.

PARANOID DELUSIONS

Delusions of control – external forces controlled them

Bizzare delusion – have implanted electrodes in the patients brain

Systematized – false belief, patient is being persecuted by CIA, the FBI, the Mafia, or the boss.

Thoughts insertion – delusion that thought are being implanted in one's mind by another people or forces

Thoughts control – one's thought could be controlled by another people or forces

GUY DE MAUPASSANT

(05.08.1850 – 06.07.1893)



Broken home complex – syphilis (20 years), paralysis progressive – (40 year). Suicide in 1892 (to cut up his throat). Strange ideas – visceral hallucinations, delirium, syphilis-phobia, dysmorphophobia, he thought that s. o. have had stolen his money that he prepared to travel to Paradise. He provoked the war between France and Germany, because he wrote an article

in the newspaper “Figaro”, and France lossed 400 millions franks. From the top of Tour Eiffel he urinate diamonds.

Preconscious thinking, however, recurs in the adult in several different ways. Before acquiring verbal formulation, all thoughts run through initial phases that resemble preconscious thinking. In dreams and in fatigue, words are retranslated into pictures. Conscious idea may be symbols, hiding objectionable unconscious idea and in dreams symbols appear not only in order to distort, but also as a characteristic of, archaic pictorial thinking visualizing abstract thoughts. In this way the fact that the symbol and the symbolized were once the same thing is utilized. Preconscious thinking may also appear as a substitute for unpleasant reality or a reality that can not be influenced. This occurs, for example, in the magical daydreaming fantasies of the hysterical patients. In the compulsion-neurotic the magic power of concept can be observed. Finally, psychotic thinking is identical with the preconscious thinking of small children, described above. (**Psychiatric Dictionary (1981)**, R. Campbell, New York, Oxford – Oxford University Press).

COMPULSION

Pathological need to act on an impulse that if resisted, produces anxiety; repetitive behavior in response to an obsession or performed according to certain rules, with no true end in itself other than to prevent something from occurring in the future.

OBSESSION COMPULSION

Pathological persistence of an irresistible thoughts or feelings that can not be eliminated from consciousness by logical effort, which is associated with anxiety.

PHOBIA

Persist, irrational /foolish/, exaggerated or magnify, and invariably pathological fear (fright or dread) of some specific Type of stimulus or situation; results in a compelling desire to avoid the feared stimulus (social phobia, agoraphobia, erythrophobia, necrophobia, examenophobia, claustrophobia, zoophobia, spinophobia, xenophobia, cardiophobia ...)

Examples for fobia

- Zoophobia – mouse-phobia, bee-phobia, spider-phobia, insect-phobia, butterfly-phobia.
- Misophobia – phobia from contamination; infection; pollution. (female in the bath)
- Sharp subjects – knife, trenchant satire.
- Height – example with the wife that could not make suicide
- Claustrophobia – a fear from a closed place, can not stay alone;
- Agoraphobia – a fear to cross a big space (a square; a market place:
- Phobia of traveling by bus (when it is full with many people)

Charles Darwin, was an English naturalist and geologist, best known for his contributions to evolutionary theory, had some psychiatric symptoms. After his marriage and the death of some of his children he suffered from agoraphobia. The last 30 years of his life he never leaved his domain. He was always accompanied by his wife Emma, during his walks in the domain. After the death of his daughter Ann and during his illness from fever he had visual hallucinations. He saw his daughter and run after the imagination figure of Ann. The hallucinations disappeared when he recovered.

Psychophysiology of thinking

Thinking is a function of the brain and in that sense it is a natural process

However each human being becomes a subject of thinking only by mastering language, concepts, and logic, which are products of the development of social practice. Even the problems with which each individual confronts his intellect are generated by the social conditions of his life. Thus human thinking has a social and historical quality. Through out the history of philosophy, the character of thinking and the relationship between thinking (consciousness) and being has been the central philosophical problem. The concrete historical study of thinking, which developed in the 19th century, was influenced by the concepts of formal logic and by the theory of associations. Thinking is a function of the brain, and in that science it is a natural process. Each human being is a subject of thinking only by mastering language, concepts, and logic, which are products of the development of social practice. Naturalistic and mechanistic descriptions were developed further by the behaviorists, who explained mental activity as the totality of inner, soundless speech habits, formed according to a “stimulus-response” pattern. There is a widespread agreement that thoughts experiments play a very important role in philosophy and natural sciences.

Mechanisms of thinking

The hierarchical nature of mechanistic explanations;

The depolarization mechanism is a part of the mechanism for chemical neuro-transmission, which is in turn a part of the *mechanism for neuron-to-neuron* signaling, and neuron-to-neuron signaling is a part of virtually every cognitive mechanism. *In molecular biology, the lowest level entities are the macromolecules, molecules and ions that are involved in biological processes. Molecular biology rarely peers below the atomic layer, but it is not an impassable barrier. As for the lowest level activities, the authors identify four that are of interest to the molecular biologist:*

1. ***Geometrico-mechanical activities:*** these are familiar from classical mechanics. They include activities such as fitting, turning, colliding, bending, pushing and so on.
2. ***Electro-chemical activities:*** these are the attractions, repulsions and bondings that constitute the field of biochemistry.
3. ***Energetic activities:*** these are activities that involve thermodynamic processes. For example, diffusion of molecules along a concentration gradient.
4. ***Electro-magnetic activities:*** these are only occasionally used in molecular biology, but they are crucial to understanding the conduction of electrical impulses along nerve cells.

• The importance of mechanism schemata in scientific discovery;

They can help to develop predictions. For example, the central dogma schema, with some detail about the **DNA code, predict the order of amino acids in a protein**. They provide blueprints for designing research protocols. The experimenter can try to intervene in some part of the mechanism and observe the changes this results in.

Intelligibility

The final point about mechanistic explanations is that they render the universe intelligible.

They do so by setting out an elucidative relation between set-up conditions and intermediate activities (*explanans*) and termination conditions (*explanandum*). It is important to note that intelligibility has nothing to do with truthfulness: an intelligible explanation may be false. Intelligibility is all about cognitive attractiveness.

Mechanism Schemata and their Uses

The mechanism schemata are an abstract description of a type of mechanism. It usually pinpoints the entities and activities that are involved in the mechanism. An example (used by the authors) is Francis Crick's description of the central dogma of molecular biology.

EEG studies and thinking

It was established, that during thinking the examined persons there is an interrelationship of various kind of information, that the various impulses are directed in different parts of the brain. Each element of these impulses is an wave of depolarization, that turn over the way o-f the nervous fibres. This activity is electro-chemical, because depolarization is the physical aspect of an exact physical event that is connected with the penetration of Na-ion in the fibre. There is no doubt that there is a motive component of the thought, even when the person's body, larynx and tongue are paralysed. It was established also that during thinking are registered potentials of the muscles that participate in our speech.

If the examined person calculates in mind (silently) the normal EEG-record of alfa-rhythm is replaced with not so high waves that are not normal and quicker or s. c. beta-waves.

Mölle, M., et al. (2003) – EEE record was done to 28 men while solving tasks of divergent and convergent you can measure thinking and during mental relaxation. It was done a comparison between these 3 moments. ***The dimensional complexity of the EEG was greater during divergent thinking than during convergent thinking.*** While solving tasks of divergent thinking, subjects with high performance scores had a lower EEG dimension than did subjects with low scores, in particular over frontal cortical areas. *Based on Hebb's view of neuron assemblies as functional processing units, the higher EEG complexity during divergent than convergent thinking could be the result of the concurrent activity of independently oscillating processing units.*

Glaubman, H., Orbach, I, Aviram, O. et al. (2007) – the contribution of REM sleep to divergent thinking was studied. 10 students were deprived of REM sleep and of equal length of NREM sleep. In both cases a divergent thinking task was assigned in the evening to be performed in the morning. The subjects' responses after NREM deprivation were numerically greater, included more positive reactions and were more divergent and original than those produced after REM-deprivation. ***Their hypothesis is that REM-sleep contributes thinking and encouraged the individual's adaptation to new situations.***

Psychophysiological marker of delusions

David and M. Phillips (1994) studied the information processing in schizophrenic patients with severe delusions and again when the delusions were subsiding using scan path compared with 9 normal controls. Deluded subjects had abnormal scan paths in a recognition task, fixating non-feature areas significantly more than controls, but were equally accurate. Re-testing after improvement in delusions established fewer group differences. The results show state-dependent abnormal information processing in schizophrenics when deluded, with reliance on less-salient visual information for decision-making.

Pavlov – thinking is nothing else, but associations, at the beginning they are elementary. The 1st association is a signal that the thought will appear.

According to **RM Granovskaja (1988)** the two brain hemispheres participate in the process of thinking and they are connected with the ability to receive the new information. In this process are included several consecutive stages, that are characterized with the dominant function of the light or of the left hemisphere. For instance when the left hemisphere is dominant the thinking processes are verbalized and sensitive. When the right hemisphere is dominant is not possible the process of realization and verbalization.

Intuition

Intuition is the ability to acquire knowledge without inference or the use of reason. The word intuition comes from Latin verb *intueri*, which is usually translated as to look inside or to contemplate. It is a kind of inner perception, some times regarded as a real lucidity or understanding.

Cases of intuition are of great varieties, and the processes by which they happen typically remain mostly unknown to the thinker, as opposite to the thinker of rational thinking.

The right brain is associated with the intuitive processes such as aesthetic or generally creative abilities. By the method of an inquiry among psychiatrist was established that 86% of them could put the correct diagnosis of their patients during the 1st minutes. They connected this with their clinical practice.

The mechanisms of intuition are connected with the ability the information to be processed in the one hemisphere and so it is prepared to be realized and conscious of before to be transfer to the other hemisphere. When the working process is done in the left hemisphere the information and the working process are more full.

In some dangerous professions (aviators, pilots, sailors, cosmonauts) in risk situations, when they have not enough time and information their intuitive decision help them to serve.

According to Jung’s theory of Ego, the intuition is an “irrational function”

It opposed most directly by sensation, and opposed less strongly by the “rational functions” of thinking and feeling. Jung defined intuition as “perception via the unconscious”, using sense-perception, only as a starting point to bring forth ideas, images, possibilities, ways out of a blocked situation, by a process that is mostly unconscious.

According to neuropsychologist and neurobiologist Roger Wolcott Sperry thought, intuition is a right brain activity, whereas mathematical analysis is a left-brain activity. Intuition depends on past knowledge and occurrence in a specific area.

Rudolf Steiner

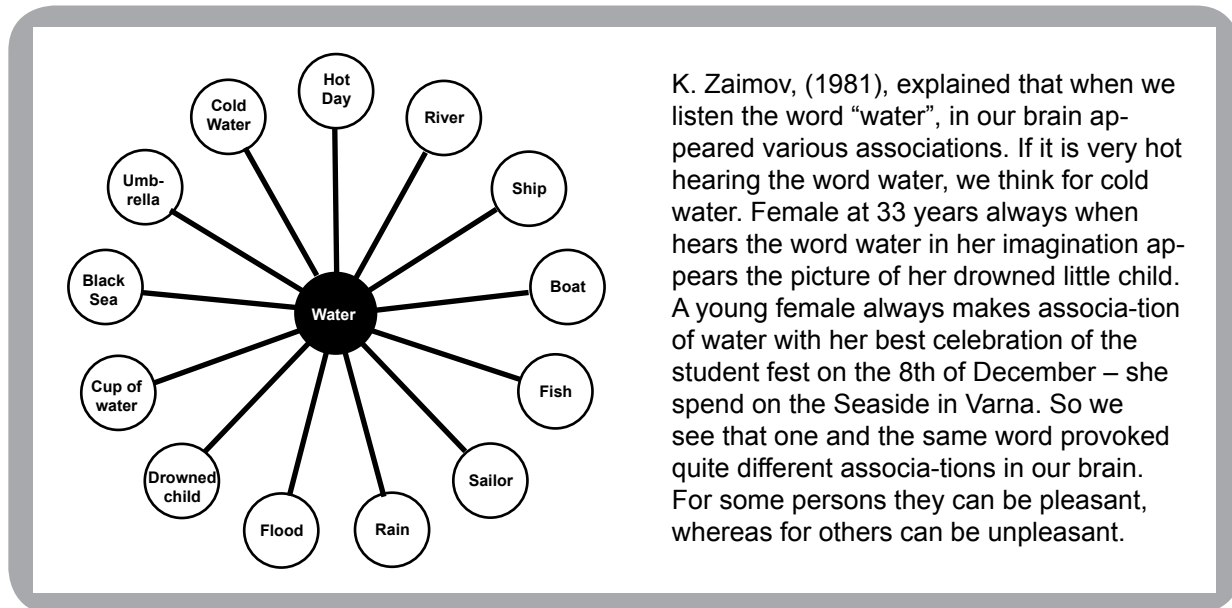
He postulated that intuition is the third of three stages of higher knowledge, coming after imagination and inspiration, and is characterized by a state of immediate and complete experience of, or even union with, the object of knowledge without loss of the subject’s individual ego.

One task could be decided in different ways

Right hemisphere	Left hemisphere
<p><i>If the hypothesis is that the decision of a given task must be formed in the right hemisphere it will be generalized and summarized very quickly. During this process it is difficult to pass from not-visual image into visual image, that is difficult to replace hardly understood and absence of the sections of formal-logical relations. It is possible only by the use of our intuition.</i></p>	<p><i>If the hypothesis is formed in the left hemisphere the passage between the initial position and the result comes after series of consecutively small jumps that go on legality. This method is more promising, as it is supported with many checking up the before each not so big jump. This way is very slowly, because of the absence of the visual component between the intervals and each next jumps is followed after many uselessly checking.</i></p>

Para-adaptive reaction of thinking

K. Zaimov is the author of para-adaptive reaction of thinking. He had recognized with all classical experiments of many physiologists as parabiosis of Vedenskii, paradoxal phase of Pavlov, and others. According Bleuler the in schizophrenic patients the normal and adequate reactions are suppressed and deblockade the pathological and anadequate reaction, that is not typical for the given situation. Schizophasia Bleuler explained: “the normal person does not think for the crystal clean water, when the water floods his house...” He demonstrated visually (see the next figure).



K. Zaimov, (1981), explained that when we listen the word “water”, in our brain appeared various associations. If it is very hot hearing the word water, we think for cold water. Female at 33 years always when hears the word water in her imagination appears the picture of her drowned little child. A young female always makes association of water with her best celebration of the student fest on the 8th of December – she spend on the Seaside in Varna. So we see that one and the same word provoked quite different associations in our brain. For some persons they can be pleasant, whereas for others can be unpleasant.

K. Zaimov thinks that if some body is dry, immediately in his brain structure become alive the images of water and dry. This ability for associations in our conscious could be used successful in our practice – to learn persons to positive thinking.

A girl (16 years) is hospitalizes for the 1st time in a psychiatric hospital. Her mother puts some questions to the doctor Psychotherapy is necessary for the mother.

THE MOTHER MAKES ASSOCIATIONS:

PSYCHIATRIST/PSYCHOLOGIST MUST DIRECT HER TO ANOTHER ASSOCIATIONS

MADHOUSE
 AGITATED/EXCITED PATIENTS
 SHE IS OUT OF SENCE
 SHE IS LIKE OUR NEIGHBOUR “CRAZY JANE”
 YOU WILL TIE HER HANDS/FEET
 CHILDREN WILL MAKE FUN OF HER
 WE’LL HAVEN’T PEACE OF MIND ANY MORE
 DISPENSARY
 LONG THERAPY
 NO CAREER FOR HER IN FUTURE
 SHE WILL NEVER BE A STUDENT
 NOBODY WILL MAKE AN OFFER OF MARRIAGE
 SHE WILL NEVER BECOME A MOTHER
 I WILL NEVER BECOME A GRANDMOTHER
 FROM ILL PARENTS WILL BE BORN ILL CHILD

NO, IT IS A HOSPITAL FOR MENTALLY ILL PERSONS
 IT HAS BEEN IN THE PAST
 ITS IS LIKE THE OTHER DISORDERS
 NOW WE HAVEN’T SUCH PATIENTS
 NOW WE DON’T USE ANY BELTS
 IT COULD HAPPEN TO EVERYBODY
 THE PSYCHOSES ARE NOT FOR EVER
 STABILIZATION
 PATIENTS WITH DIABETES ARE ON INJECTIONS
 TOO MANY FAMOUS PERSONS SUFFER FROM SCH
 NASH IN THE FILM “BEUTIFULL MIND” – NOBEL PRICE
 WHEN SHE RECOVERED SHE CAN MARRY
 MANY PATIENTS HAVE GOOD FAMILIES
 SHE COULD BORN OR ADOPT SON/DAUGHTER
 “GOD ONLY KNOWS” – IN PRACTICE HAPENCE AND
 THE OPPOSITE – ILL PERSONS COULD HAVE
 HEALTHY CHILDREN.

A girl (16 years) is hospitalized for the 1st time in a psychiatric hospital. When she is discharged from hospital she puts some questions to the doctor/psychologist (Psychotherapy is necessary for the patient)

Patient's questions

- What must be my behavior?
- If s.o. mentions me about the psychiatric clinic, what to do?
- What to do if my classmates make fun of me?
- How long I must use the drugs?
- Can I continue my education?
- Must I leave my native town?
- Can I marry?

Psychiatrist's answers

- You must be as a healthy person.
- You know that it could happen to every one.
- You must not pay attention of their remarks.
- It depends on your psychic state.
- It is the best for you
- You must be strong and go on.
- Yes, but always to advice with the doctor, and planed the pregnancy

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6. Intelligence

Definition – The ability to learn or understand things or to deal with new or difficult situations. The ability to apply knowledges to manipulate one’s environment or to think abstractly as measured by objective criteria (as tests).

We must stress on the fact that among the most spread definitions from “Mainstream Science on Intelligence” (1994) and “Intelligence: Knowns and Unknowns” (1995) from American Psychiatric Associations there are various definitions by psychologists and learning researchers as:

Researchers	Quotation
David Wechsler	The aggregate or global capacity of the individual to act purposefully, to think rationally, and to deal effectively with his environment.
Lloyd Humphreys	“..the results of the process of a acquiring strong in memory, retrieving, combining, comparing, and using in new contexts information and conceptual skill
Cyril Burt	Innate general cognitive ability.
Howard Gardner	To my mind, a human intellectual competence must entail a set of skills of problem solving – enabling the individual to resolve genuine problems or difficulties that he/she encounters and, when appropriate, to create an effective product – and must also entail the potential for finding or creating problems – and thereby laying the groundwork for the acquisition of knowledge.
Linda Gottfredson	The ability to deal with cognitive complexity.
Sternberg & Salter	Goal-directly adaptive behavior.
Reuyen Feuerstein	The theory of Structural Cognitive Modifiability intelligence is described as “the unique propensity of human beings to change or modify the structure of their cognitive functioning to adapt to the changing demands of a life situation.
Charles Spearsman	“...all branches of intellectual activity have in common one fundamental function, whereas the remaining of specific elements of activity seem in every case to be wholly different from that in all the others.

Origin of intelligence

The word comes from Latin *intelligentia*, from *intelligent* – *intelligens*, *intelligent*. For the 1st time was used in the 13th century. Greek philosophical term *nous* was strongly linked to the metaphysical and cosmological theories of teleological scholasticism, including theories of the immortality of the soul, and the concept of the Active intellect (also known as the Active intelligence).

Intelligence (disambiguation)

It has been defined in many different ways such as in terms of one’s capacity for logic, abstract thought, understanding, self-awareness, communication, learning, emotional knowledge, memory, planning, creativity and problem solving. It can also be more generally described as the ability to perceive and/or retain knowledge or information and apply it to itself or other instances of knowledge or information creating referable understanding models of any size, density, or complexity, due to any conscious or subconscious imposed will or instructions to do so. Intelligence is studied in humans, but it has been observed in non-humans animals and in plants. Artificial intelligence is simulation of intelligence in machines.

With the development of psychology, various approaches to human intelligence have been adopted.

Aptitude & Intelligence

An aptitude is a component of a competency to do a certain kind of work at a certain level, which can also be considered “talent”. Aptitudes may be physical or mental. Aptitude is not developed knowledge, understanding, learned or acquired abilities (skills) or attitude. The innate nature of aptitude is in contrast to achievement, which represents knowledge or ability that is gained through learning.

Aptitude and intelligence are related, and in some way opposite views of human mental ability. Whereas IQ intelligence as being a single measurable characteristic affecting all mental ability, aptitude refers to one of many different characteristics which can be independent of each other, such as aptitude for military flight, air traffic control, or computer programming. This is more similar to the theory of multiple intelligence. Concerning a single measurable characteristic affecting all mental ability, analysis of any group of intelligence test scores will nearly always show them to be highly correlated. Some tests for intelligence for instance, are determined by combining Verbal, Numerical and Spatial aptitude subtests. The results for the different persons can vary – some are lower, others are higher. It is known that the skill abilities of the various tests are different for each person.

Combined aptitude and knowledge tests

Combined aptitude and knowledge tests are called achievement tests. Certain tests can assess both types of constructs for example ASVAB (Armed Service Vocational Aptitude Battery). It tests mathematical reasoning, which depends both on innate mathematical ability and education received in mathematics.

Aptitude tests are grouped according to the type of cognitive ability they measure.

Fluid intelligence (FI)	Crystallized intelligence (CI)
The ability to think and reason abstractly, effectively solve problems and think strategically. It is more commonly known as “street smart” or the ability to “quickly think on your feet”. An example of what employers can learn from your fluid intelligence is your suitability for the role for which you are applying.	The ability to learn from past experiences to apply this learning to work-related situations. Work situations require CI, include producing and analysis written reports, comprehending work instructions, using numbers as a tool to make effective decisions, etc.

Intuition

Intuition is the ability to acquire knowledge without inference or the use of reason. The word intuition comes from Latin verb intueri, which is usually translated as to look inside or to contemplate. It is a kind of inner perception, some times regarded as a real lucidity or understanding. Cases of intuition are of great varieties, and the processes by which they happen typically remain mostly unknown to the thinker, as opposite to the thinker of rational thinking. The right brain is associated with the intuitive processes such as aesthetic or generally creative abilities. By the method of an inquiry among psychiatrist was established that 86% of them could put the correct diagnosis of their patients during the 1st minutes. They connected this with their clinical practice.

The mechanisms of intuition are connected with the ability the information to be processed in the one hemisphere and so it is prepared to be realized and conscious of before to be transfer to the other hemisphere. When the working process is done in the left hemisphere the information and the working process is more full.

In some dangerous professions (aviators, pilots, sailors, cosmonauts) in risk situations, when had not enough time and information their intuitive decision helps them to survivor.

According to Jung’s theory of Ego, the intuition is an “irrational function”, opposed most directly by sensation, and opposed less strongly by the “rational functions” of thinking and feeling. Jung defined intuition as “perception via the unconscious”, using sense-perception, only as a starting point to bring forth ideas, images, possibilities, ways out of a blocked situation, by a process that is mostly unconscious.

According to neuropsychologists and neurobiologists Roger Wolcott Sperry thought, intuition is a right brain activity, whereas mathematical analysis is a left-brain activity. Intuition depends on past knowledge and occurrence in a specific area. Rudolf Steiner postulated that intuition is the third of three stages of higher knowledge, coming after imagination and inspiration, and is characterized by a state of immediate and complete experience of, or even union with, the object of knowledge without loss of the subject’s individual ego.

What is different between Talent and Genius

Talent	Genius
<p>A special ability that allows someone to do something well. A persons or a group of people with a special abilities to do something well. The 1st signs of talent are connected with music, mathematics, painting, dancing, technique, and s. o. their achievements are to do something that is created till this moment. According to Terman the emotionality of the talent persons are stable and they do not suffer from neurotic disorders.</p>	<p>A genius person is this person who has exceptional intellectual abilities, creativity, or originally ideas, typically to degree that is associated with the achievements of new advances in a domain of knowledge as Leonardo da Vinchi, Albert Einstein, Charles Darwin, Paskal, Galileo, Kopernik and s. o. This is not scientifically precise definition of genius, and the question of whether the notion itself has any real meaning has long been a subject of debate, although psychologists are converging on a definition that emphasizes creativity achievements. The genius persons takes everything, that is done from society and help to be constructed some new very important ideas and hypotheses for the development of the sciences, art, technique and s. o.</p>

Genius

A number of people commonly regarded as geniuses have been diagnosed with mental disorders, for example Vincent van Gogh, Jonathan Swift, John Nash, Ernest Hemingway.

Etymology - In ancient Rome, the genius (plural in Latin genii) was the guiding spirit or tutelary deity of a person, family (gens), or place (genius loci). The noun is related to the Latin verb genui, genitus “to bring into being, create, produce”.

Gatton is the founder of psychometry. He studied the work of his older half-cousin Charles Darwin, about biological evolution. Later in the 19th century his ideas were used in statistical methods.

Genius in Psychology

It is expressed in a variety of forms (e.g., mathematical, literary, musical performance). Persons with genius tend to have strong intuitions about their domains, and they build on these insights with tremendous energy. Carl Roger, a founder of the Humanistic Approach to Psychology, expands on the idea of a genius trusting his/her intuition in a given field, writing.

IQ and genius

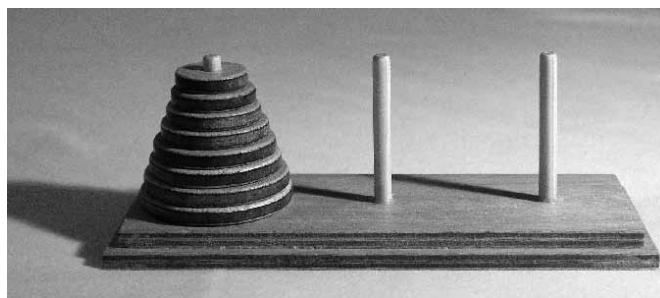
Lewis Terman began publishing about a longitudinal study of California schoolchildren who were referred for IQ testing by their teachers. Catherine Cox wrote a book “The Early Mental Traits of 300 Geniuses”, in which she analyzed biographical data about historical geniuses. Although her estimates of childhood IQ score of historical figures who never took IQ tests have been criticized on methodological grounds, Cox’s study was in finding out what else matter besides IQ in becoming a genius. David Wechsler specially commented that “we are rather hesitant about calling a person a genius on the basis of a single intelligence test score.

Tower of Hanoi

Hanoi tower is a mathematic task that was thought out in 1883 by the French mathematician Edouard Lucas. The game contains 8 disks with different sizes. The tower of Hanoi is a popular problem. You have three poles and n-number discs, which fit on the poles. All disks have different size. They are stacked on pole 1 in the order of their size. The largest disk is on the bottom, the smallest is on the top.

The task is to move all disk from pole 1 to pole 3 under the following restrictions.

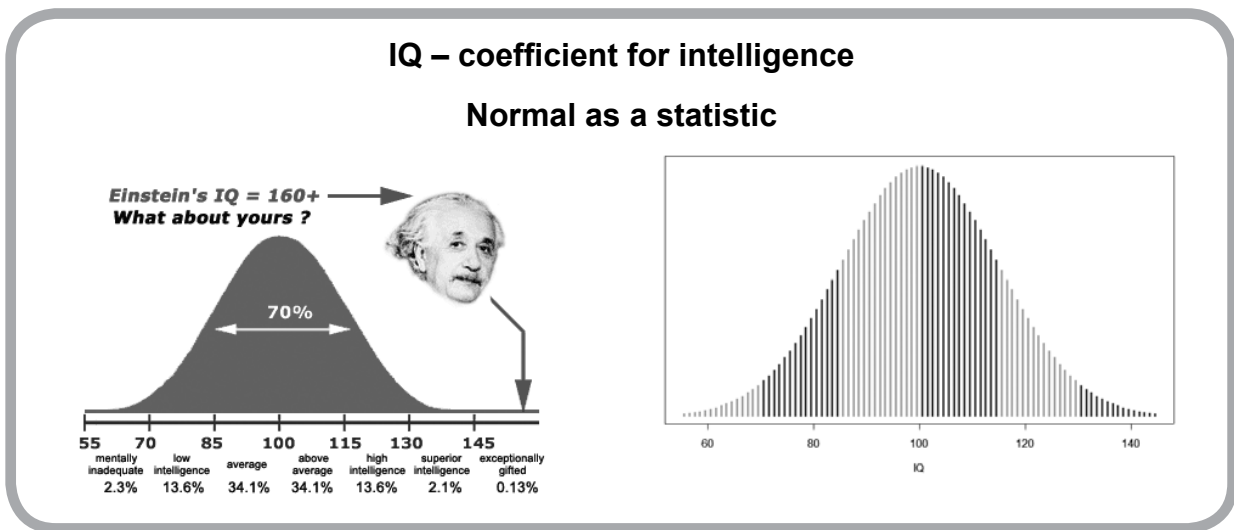
1. only one disk can be moved;
2. a larger disk can not be placed on a smaller disk.



The recursive algorithm works like the following: move n-disk from the starting pole to the pole which is neither start nor target (intermediate), move disk n to the target pole and then move n-1 disk from the intermediate pole to the target pole. The n-1 disks are moved recursively. With 3 disks the puzzle can be solved in seven moves. The minimum number of moves required to solve a Tower of Hanoi puzzle is $2^n - 1$, where n is the number of disks.

Does the IQ really measure intelligence?

Well if we would like to answer this question, first of all we must answer the question “What is intelligence?” The main problem is that the term “intelligence” had never been defined correctly, and I suspect if anybody could really knows what is IQ-test.



Einstein (no one knows his real IQ) gives us a puzzle like this, for he stressed examining assumptions, and once wrote: “The important thing is to not stop questioning.”

Facts:

1. There are 5 houses in 5 different colours
2. In each house lives a person with a different nationality..
3. These 5 owners drink a certain beverage, smoke a certain brand of cigar and keep a certain pet.
4. No owners have the same pet, smoke the same brand of cigar or drink the same drink.

Hints:




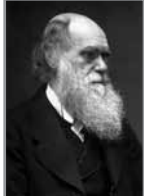




1. The Brit lives in a red house.
2. The Swede keeps dogs as pets.
3. The Dane drinks tea.
4. The green house is on the left of the white house.
5. The green house owner drinks coffee.
6. The person who smokes Pall Mall rears birds.
7. The owner of the yellow house smokes Dunhill.
8. The man living in the house right in the centre drinks milk.
9. The Norwegian lives in the first house.
10. The man who smokes Blend lives next to the one who keeps cats.
11. The man who keeps horses lives next to the man who smokes Dunhill.
12. The owner who smokes Blue Master drinks beer.
13. The German smokes Prince.
14. The Norwegian lives next to the blue house.
15. The man who smokes Blend has a neighbour who drinks water.

The question for the Einstein test is ... WHO KEEPS THE FISH?

Please follow this link to find the solution for the Einstein test, in case that you didn't solve yourself the quiz.

How to Be Genuine: In a world full of knock-offs, spin-offs, and cheap imitations, being “genuine” seems a little off the beaten track. Should you decide to see what the world thinks of the real you (and kudos, by the way!), here’s how to start finding him or her.

IQ of some famous persons

<p>Goethe IQ = 210</p> 	<p>Kasparov IQ = 190</p> 	<p>Da Vinci IQ = 220</p> 	<p>Charles Darwin IQ = 165</p> 
<p>Kim Ung Yong IQ = 210</p> 	<p>Nuton IQ = 190</p> 	<p>Pascal IQ = 195</p> 	<p>Galileo IQ = 185</p> 

What do you think about animals? Are they intelligence?

“Super dogs,” meaning those in the top 20% of canine intelligence, can learn at least 250 words and signals. Intelligence, at least as measured by humans, varies per breed, with border collies tending to be the brightest. Dogs understand arithmetic, according to Stanley Coren of the University of British Columbia’s Department of Psychology. Studies show, for example, that dogs notice errors in simple computations, such as $1+1=3$. The average dog, Coren said, can learn 165 words. *Dogs have feeling too.*

Angry Birds: Crows Never Forget Your Face – A recent study published in *PLoS ONE* reported that crows completed an “Aesop’s fable paradigm” task, which required crows to drop stones into water to rise the water level so the hungry birds could obtain an out-of-reach reward. Crows continue to demonstrate that they are very brainy birds. In fact, their intelligence can rival that of 7-year-olds.

Honeybees can count, categorize similar objects like dogs or human faces, understand “same” and “different,” and differentiate between shapes that are symmetrical and asymmetrical. Honeybees help to prove that “animals with bigger brains are not necessarily more intelligent,” according to Lars Chittka, a professor of sensory and behavioral ecology at Queen Mary’s Research Center.

Fish can distinguish between larger and smaller quantities, with an additional ability to “count” up to three, according to research on tropical angelfish. Fish, as well as dogs, probably have even more advanced mathematical ability, scientists suspect, but we need more methods to better study these animals.

An Asian elephant male named Koshik can imitate human speech, speaking words in Korean that others who know the language can understand, a *Current Biology* study determined. The elephant’s vocabulary at present consists of at least five words: annyong (hello), anja (sit down), aniya (no), nuo (lie down), and choah (good). Given that elephants have a trunk instead of lips, it’s no small feat that Koshik can speak Korean.

Cockatoo, named “Pipin” studied in a University of Vienna, an adult male retrieved a nut after picking a lock that required him to: remove a pin, then a screw, then a bolt, then turn a wheel 90 degrees and then shift a latch sideways.

Horses possess “excellent memories”, Carol Sankey of the University of Rennes told Discovery News. She added that “horses are able to learn and memorize human words,” and can hear the human voice better than even dogs can, due to their particular range of hearing. Horses never forget their human friends.



Dolphins are second only to humans in brainpower – When human measures for intelligence are applied to other species, dolphins are second only to Homo sapiens in brainpower, according to Lori Marino, a senior lecturer in neuroscience and behavioral biology at Emory University.

“If we use relative brain size as a metric of ‘intelligence’ then one would have to conclude that dolphins are second in intelligence to modern humans,” Marino, who performed several MRI scans on dolphin brains.

It should then come as no surprise that a dolphin recently emitted the whistle for the word “sargassum,” referring to a type of seaweed commonly found in the dolphin’s marine environment.

Emotional Intelligence

Emotional intelligence (EI) is the ability to monitor one’s own and other people’s emotions, to discriminate between different emotions and label them appropriately, and to use emotional information to guide thinking and behaviour.

The first use of the term “emotional intelligence” is usually attributed to Wayne Payne’s doctoral thesis in 1983, Howard Gardner’s Frames of Mind: The Theory of Multiple Intelligences introduced the idea that traditional types of intelligence, such as IQ, fail to fully explain cognitive ability. His idea was, that intelligences which included both interpersonal intelligence (the capacity to understand the intentions, motivations and desires of other people) and intrapersonal intelligence (the capacity to understand oneself, to appreciate one’s feelings, fears and motivations).

People with high EI have greater mental health exemplary job performance, and more potent leadership skills. Markers of EI and methods of developing it have become more widely coveted in the past few decades. In addition, studies have begun to provide evidence to help characterize the neural mechanisms of emotional intelligence

EI is the ability to monitor one’s own and other people’s emotions, to discriminate between different emotions and label them appropriately, and to use emotional information to guide thinking and behaviour. The emotionally intelligent person can capitalize fully upon his or her changing moods in order to best fit the task at hand.

There are three models of EI.

1. **Ability model** – Salovey and John Mayer – focused on the individual’s ability to process emotional information and use it to navigate the social environment;

2. **Trait model** – the trait model as developed by Konstantin Vasily Petrides, “encompasses behavioural dispositions and self perceived abilities and is measured through self report”.

3. **Mixed model (usually subsumed under trait EI)** – it is a combination of both ability and trait EI. It defines EI as an array of skills and characteristics that drive leadership performance, as proposed by Daniel Goleman.

<p>Some authors speak also for another kind of emotion intelligence as:</p>	<ol style="list-style-type: none"> 1. Perceiving emotions – the ability to detect and decipher emotions in faces, pictures, voices, and cultural artifacts – including the ability to identify one’s own emotions. 2. Using emotions – the ability to facilitate various cognitive activities, such as thinking and problem solving. 3. Understanding emotions – the ability to understand emotion language and to appreciate complicated relationships among emotions. 4. Managing emotions – the ability to regulate emotions in both ourselves and in others. Therefore, the emotionally intelligent person can harness emotions, even negative ones, and manage them to achieve intended goals.
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Biochemical markers of intelligence: a proton MR Spectroscopy study of normal human brain.

RE Jung et al. (1999) by non-invasive approach **measured N-acetylaspartate (NAA) and choline (Cho)**, putative markers of neuronal and glial integrity. They established that these neurochemicals predict impairment in ill subjects. The data of concentration of NAA and Cho in the left occipito-parietal white matter in 26 healthy persons were compared with intellectual performance assessed by Wechsler Adult Intelligence Scale-3. Their results show that NAA and Cho were independently associated with the Full-Scale Intelligence Quotient.

Brain and intelligence

E. Luders et al. (2009) summarized macro-structural associations with intelligence based on magnetic resonance imaging data from healthy persons. The author tried to localize the presence of correlations between cerebral characteristics and intelligence with high anatomic precision. Their studies investigated the relationship between global (e. g. brain volume), regional (e. g. lobar volume), and highly localized (e. g. voxel-level) brain measurements and intelligence. Measures cover various brain structures (whole brain), cerebral characteristics (volume, concentration, density). Their further findings suggest that they tried to explain the anatomical intelligence. Findings further suggest that the models proposed to explain the anatomical substrates of intelligence should address contributions from not only (pre)frontal regions, but also widely distributed networks throughout the whole brain.

The earliest attempts to establish relationships between brain anatomy and intelligence were based on measuring external head parameters (i.e., perimeter, height, length, width). There was not established a sure connection between intelligence and head width. Other studies have measured brain weight or volume post mortem. The relationships between global brain volume and intelligence have shown predominantly positive correlations. Positive correlations have been reported, where the most significant and frequently detected associations are observed within the frontal, temporal, and parietal lobes, the hippocampus, and the cerebellum.

The correlations between intelligence and tissue volumes for cerebral subregions, prior studies have divided the brain into smaller-sized and possibly more functionally meaningful compartments. This study detected significant **positive correlations between intelligence and prefrontal gray matter volume**; although arguably such an anatomical partitioning approach does not “conform well to the extensive individual differences among subjects in brain size and morphology”.

There is a high significant positive association between intellectual function and gray matter volume in the frontal cortex. Thus, positive correlations between gray matter and intelligence might more closely reflect other micro-topographic features, such as the formation and usage-dependent selective elimination of synapses which help to create and sculpt neural circuitry. For example, fractional anisotropy, a diffusion data-derived measure of white matter integrity, is known to correlate with full-scale IQ. The cerebral cortex holds two thirds of the brain's neurons and thus appears to be a promising candidate for determining the primary neuroanatomical correlates of intelligence. Observations of specific links between cortical thickness and intelligence in this region (and within proximal visual association area) suggest that variations in cortical thickness influence visual analysis abilities, which are integral to cognitive processing. Consequently, **individual intelligence within the human species might be modulated by the degree of cortical convolution.** To our knowledge, there is no information on relationships between intelligence and global whole-brain or regional measures of cortical convolution. Cortical convolution was reported to increase more rapidly with brain size among later evolved (and likely more intelligent) primates compared with earlier evolved primates (Zilles et al., 1988; 1989). Finally, the regional specificity of these observed convolution-based correlations are in agreement with findings of thickness-based correlations in similar temporo-occipital regions across the medial cortical surface (Narr et al., 2007). The regional degree and pattern of the convolution of the cortex has been suggested to reflect regional **interconnectivity or neuronal circuitry.**

The Parieto-Frontal Integration Theory (P-FIT) of intelligence (Jung and Haier, 2007) high lighting the integration of anterior and posterior brain regions in most intelligence research.

The corpus callosum (CC) is a white matter structure and the largest commissure in the human brain, connecting the two hemispheres through more than 200 million fibers. The mid-sagittal callosal area is an indicator of the total number of small diameter fibers within the CC. Since small diameter fibers are particularly involved in transferring higher-order cognitive information, **callosal morphology may reflect the capacity for inter-hemispheric processes that modulate intellectual abilities.** Many studies found out associations between cognitive abilities and callosal characteristics, and were reported positive correlations. Some newer studies tried to explain callosal segmentation, even some of them stressed of the relationships between callosal characteristics and intelligence with high spatial resolution without relying on predefined areas. This approach revealed significant positive correlations between callosal thickness and full-scale IQ in several callosal regions (Luders et al., 2007b). Positive correlations between callosal thickness and full-scale IQ may indicate that additional or better-myelinated callosal pathways facilitate a more efficient inter-hemispheric information transfer, which is likely to benefit the integration and processing of information and positively affect intellectual performance (Luders et al., 2007b).

Modern neuroimaging methods have contributed considerably to our understanding of the neurobiology of intelligence. In addition to structural MRI (which constituted the main focus of this article) other imaging techniques will further contribute to elucidating the physical correlates of human intelligence and have the potential to resolve how structural, physiological, histological, or neuro-chemical characteristics of the brain are interrelated.

Genetic and intelligence

Many scientists around **focused on genetic variation**, which appears to determine about half of a brain's cognitive ability on average, as measured by standard IQ tests. And by using modern scanning techniques, they are gaining much more detailed insights into the structure and function of the brain than the Russians could achieve through dissection.

Where intelligence is in the brain?

For years, Russian scientists tried to locate the source of the intelligence. After V.I. Lenin died in 1924, for example, the Russians invited the great German neuroanatomist **Oskar Vogt to try to locate the “source of genius” in the leader of the Russian revolution. Vogt cut Lenin’s brain into more than 1,100 slices, but he found nothing exceptional except unusually large pyramidal cells.** The last brain that the Russians studied in this way was that of **Andrei Sakharov, the nuclear physicist and human rights activist who died in 1989. From the dozens of brains they studied, the researchers made many observations about brain size, the density of neurons and the number of convolutions of the cortex, but their findings revealed next to nothing about human intelligence (Valeo, T., 2008).**

Parieto-Frontal Integration Theory (P-FIT)

Richard Haiern developed the theory, that human intelligence depends on the links of the frontal lobes, which are responsible in planning, organization and other highly developed human abilities, with the parietal region farther back in the brain, which integrates information from the eyes, ears and other senses. He and other scientists believed that **Parieto-Frontal Integration Theory, or P-FIT, best accounts for the evidence that intelligence** depends on several brain regions tightly linked by axon tracks that form superhigh ways of information.

Rex E. Jung and some other scientists suggest that **the frontal lobes is the seat of human intelligence**, because the damage to the frontal lobes may affect motivation, foresight, modulation of emotion and other higher functions, that leads to intelligence degradation. This is proved by almost all imaging studies.

Genes also contribute to intelligence, according to studies of identical twins, and paradoxically it increases with age. In children, the influence of genes is less than 50, whereas in older persons (after 60s, 70s, and 80s, the heritability grows till 80%. As you grow older the heritability of intelligence *increases. That means “environmental influences become less significant over time, and genetic influences become more pronounced.”* The genetic contribution to intelligence undoubtedly involves many genes, each making a small contribution, but modern techniques for scanning the genome can compare billions DNA base pairs from many subjects very quickly. This will enable the DNA of very intelligent people to be compared with DNA taken from people of average intelligence, which could reveal genes that contribute to IQ.

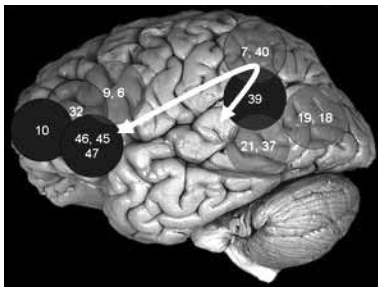
The studies of Russian’ scientists on some laureates of Noble prize showed: Turgenev’s brain was an amazing 30 percent larger than average, while **an exceedingly detailed study of the brain of Mendeleev, the creator of the periodic table, revealed highly developed frontal and parietal lobes on the left side.**

Conclusion:

We could finish with Dr. A.Mohanad’s thoughts: *“From a neurophysiological point of view, human intelligence is considered as a function (output) of many widespread areas of the brain working in concert with each other to produce what characterizes human beings, that is to say cognitive reasoning. These areas include, in order of importance, the language comprehension area in the posterior part of the superior temporal lobe (Wernicke’s area), the parietal lobe, the frontal lobe, the cerebral cortex, as well as the thalamus. The integrative function of all of these areas together can produce a human’s ability to solve social, mathematical, and philosophical problems, and to prognosticate and plan for the future. In this sense intelligence can be considered as acquired skill that requires many activities to be conducted by the involved areas (in intelligence) of the brain.”*

Brain activities that represent the skeleton of intelligence include:

1. Learning;
2. Understanding and comprehension;
3. Memory storage;
2. Data base of the brain;
3. The working memory;
4. Retrieval and read out of stored memories: The thalamus is responsible for the accessing and reading of memories.



The dark circles (No 10, 45, 46, 47, 39) **mark brain areas in the left hemisphere strongly associated with intelligence and reasoning**, while light circles (No 9, 6, 7, 40, 19, 18, 21, 37) mark relevant areas in both hemispheres. The P-FIT model proposes that those areas are linked by a neural pathway known as the arcuate fasciculus, represented by the arrow, which is vital for the production and comprehension of language. (image courtesy of Rex E. Jung and Richard J. Haier).

Must we feel fear of intelligence research – “There’s a fear of how that information would be used.” (Haier)

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Intellectual disability (Mental Retardation)

Intellectual Disability (ID), known as “Mental Retardation”* is a disorder that includes intellectual deficit and difficulty functioning in daily life in areas such as communication, self-care, home living, social and interpersonal skills, self-direction, academic work, leisure, health and safety. About 2-3% of general population is with ID. 75-90% of the affected people have mild intellectual disability.

In the late 19th century, in response to Charles Darwin’s *On the Origin of Species*, Francis Galton proposed selective breeding of humans to reduce intellectual disabilities. Early in the 20th century the eugenics movement became popular throughout the world. This led to forced sterilization and prohibition of marriage in most of the developed world and was later used by Hitler as rationale for the mass murder of intellectually challenged individuals during the holocaust. Eugenics was later abandoned as an evil violation of human rights, and the practice of forced sterilization and prohibition from marriage was discontinued by most of the developed world by the mid-20th century. The terms *mental retardation* and *mentally retarded* were invented in the middle of the 20th century to replace the previous set of terms, which were deemed to have become offensive. By the end of the 20th century, these terms themselves have come to be widely seen as disparaging, politically incorrect, and in need of replacement. The term *intellectual disability* is now preferred by most advocates and researchers in most English-speaking countries.

ID has many different etiologies and may be as a final common pathway of various pathological processes and affect the central nervous system. In 1905, Alfred Binet produced the first standardized test for measuring intelligence in children. In DSM-5, IQ scores have been emphasized. There is no longer a “cut-off” score or threshold for establishing a diagnosis. Rather, scaled IQ scores are evaluated in context of individual’s entire “clinical picture”. A person with IQ score above 70 may have such severe adaptive behavior problems in social judgment, social understanding, and other areas of adaptive functioning that the person’s actual functioning is comparable to that of individuals with a lower IQ score. For this reason, clinical judgment is required to interpret the results of an IQ test. The average IQ is 100. A person is considered intellectually disabled if s. o. has an IQ of less than 70 to 75.

*The term ID was transformed many times in the literature in order to be avoided the social discrimination. Cretin is the oldest and comes from a dialectal French word for Christian. This term is not used in scientific endeavors since the middle of the 20th century and is generally considered a term of abuse. Although cretin is no longer in use, the term *cretinism* is still used to refer to the mental and physical disability resulting from untreated congenital hypothyroidism. Some of the most spread terms were: **mental retardation; Feeble-minded; “Borderline intellectual functioning;”** Some other terms that were used for ID in the world were: **Amentia** – is mostly associated with dementia. *Amentia* was the term used to denote an individual who developed deficits in mental functioning early in life, while *dementia* included individuals who develop mental deficiencies as adults; **Idiot** – is the deepest degree of ID, where the mental age is two years or less, and the person cannot guard himself or herself against common physical dangers. The term was gradually replaced by the term **profound mental retardation** (which has itself since been replaced by other terms); **Imbecile** – ID is not very heavy as idiot. It is divided into two subgroups - as **severe intellectual disability** and **moderate intellectual disability; Moron** – was defined by American Association for **Feeble-minded** in 1910; **Mongolism** – is used for Down Syndrome; **Retarded** comes from the Latin *retardare*, “to make slow, delay, keep back, or hinder”. The term **mental retardation** was recorded in 1426 as a “fact or action of making slower in movement or time.” The term *retarded* was used to replace terms like *idiot*, *moron* and *imbecile*. **Mental retardation** – denote categories of mental functioning such as *idiot*, *imbecile*.

Signs of ID:

- Delays in oral language development, talking late or having trouble with talking;
- Rolling over, sitting up, crawling, or walking late;
- Slow to master things like potty training, dressing, and feeding himself or herself
- Difficulty remembering things;
- Deficits in memory;
- Difficulty learning social rules skills;
- Inability to connect actions with consequences;
- Behavior problems such as explosive tantrums;
- Difficulty with problem-solving or logical thinking;
- Delays in the development of adaptive behaviors such as self-help or self-care skills;
- Lack of social inhibitors;
- Difficulty with problem solving skills.

ID has limitations in two areas:

1. **Intellectual functioning** – this refers to a person’s ability to learn reason, make decisions, and solve problems.
2. **Adaptive behaviors** – these are skills necessary for day-to-day life, such as being able to communicate effectively, interact with other, and take care of oneself.

Children with ID may learn to sit up, to crawl, or to walk later than other children, they learn more slowly than a normal child. They may take longer to learn language, develop social skills, and take care of their personal needs, such as dressing or eating. Learning will take them longer, require more repetition, and skills may need to be adapted to their learning levels. They have problem with exclusively and fine skills in doing anything. After hard training the child is able to learn, develop and become a participating member of the community.

Degree of ID	IQ	Clinical picture
Mild ID	50-69	The signs become obvious, when the child goes to school. When the symptoms are not obvious it is necessary to take expert assessment to distinguish mild intellectual disability from learning disability or emotional/behavioral disorders. People with mild ID are able of learning reading and mathematics skills to approximately the level of a typical child aged nine to twelve. They can learn self-care and practical skills, such as cooking or using the local mass transit system. As individuals with ID reach adulthood, many learn to live independently and maintain gainful employment
Moderate ID	35-40	The signs are obvious within the first years of life. Speech delays are particularly common signs of moderate MR. People with moderate ID need considerable supports in school, at home, and in the community in order to participate fully. Their academic potential is limited, they can learn simple health and safety skills and to participate in simple activities. As adults they may live with their parents, in a supportive group home, or even semi-independently with significant supportive services to help them, to manage their finances. As adults they could work some elementary/primitive labour – in a sheltered workshop.
Severe or profound ID	Lower than 35	They need more intensive support and supervision. They may learn some activities of daily living. Some require full-time care by an attendant.

Cause – the cause is unknown for about 1/3 to 1/2 of the children.

Hippocrates believed in that it was caused by an imbalance in the *four humors* in the brain. In the 13th century, England declared people with ID to be incapable of making decisions or managing their affairs. Guardianships were created to take over their financial affairs. In the past, lead poisoning and infectious diseases were significant causes of ID. Some causes of ID are decreasing, as medical advances, such as vaccination, increase. Other causes are increasing as a proportion of cases, perhaps due to rising maternal age, which is associated with several syndromic forms of ID.

In the 17th century, Thomas Willis provided the first description of ID as a disease. He believed that it was caused by structural problems in the brain. According to him, the anatomical problems could be either an inborn condition or acquired later in life.

The most common causes of ID are:

- **Genetic conditions** – sometimes ID is caused by abnormal genes inherited from parents, errors when genes combine, or other reasons. The most prevalent genetic conditions include Down syndrome, Klinefelter's syndrome, Fragile X syndrome (common among boys), Neurofibromatosis, congenital hypothyroidism, Williams syndrome, Phenylketonuria (PKU), and Prader-Willi syndrome. Other genetic conditions include Phelan-McDermid syndrome (22q13del), Mowat-Wilson syndrome, genetic ciliopathy, and Siderius type X-linked intellectual disability (OMIM 300263) as caused by mutations in the PHF8 gene (OMIM 300560). In the rarest of cases, abnormalities with the X or Y chromosome may also cause disability. 48, XXXX and 49, XXXXX syndrome affect a small number of girls worldwide, while boys may be affected by 47, XYY, 49, XXXXY, or 49, XYYYYY.
- **Problems during pregnancy** – when the fetus does not develop properly, a problem with the way the fetus' cells divide as it grows. A woman who drinks alcohol (see fetal alcohol syndrome) or gets an infection like rubella during pregnancy may also have a baby with intellectual disability.
- **Problems at birth** – If a baby has problems during labor and birth, such as not getting enough oxygen, the ID is due by brain damage.
- **Heavy disease/toxins in early childhood** – whooping cough, measles, or meningitis can cause intellectual disability if medical care is delayed or inadequate. Exposure to poisons like lead or mercury may also affect mental ability.
- **Iodine deficiency** – spread among 2 billion people worldwide, who are living in areas where iodine deficiency is epidemic. Iodine deficiency also causes an enlargement of the thyroid gland. More common than full-fledged cretinism, as ID caused by severe iodine deficiency is called, is mild impairment of intelligence. A medical prophylaxis with iodine products, as salt, or medicaments could be used for prevention of this ID.

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7. Attention

Attention (A) is a conscious and willful focusing of mental energy on one object or one component of a complex experience and at the same time excluding other emotional or thought content. (R. Campbell, in "Psychiatric dictionary", 5th edition, 1981, p. 62).

The attention is the behavioral and cognitive process of selectively concentrating on a discrete aspect of information, whether subjective or objective, while ignoring other perceivable information. **A** is important for various spheres as education, psychology, neurosciences, cognitive neurosciences, and neuropsychology. Areas of active investigation involve determining the source of the sensory cues and signals that generate attention, the effects of these sensory cues and signals on the tuning properties of sensory neurons, and the relationship between attention and other behavioral and cognitive processes like working memory and vigilance. Scientists found out variation of the clinic of A, among different cultures. There is a relationship between the **A** and the consciousness, and the intelligent too.

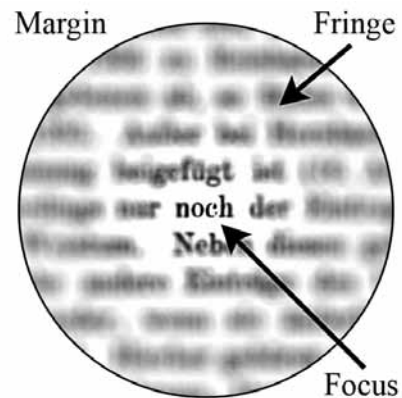
In the past EEG had long been used to study the brain activity, underlying selective attention by cognitive psychophysicologists. After 1990 by the use of PET, and fMRI the scientists had the ability to follow the brain imagination while monitoring attention tasks. With the development of these technological innovations the scientists had special interest that combines sophisticated experimental paradigms from cognitive psychology with brain imagination, received by these new techniques.

Selective attention and visual attention

There are two models used in cognitive psychology, which tried to describe how visual attention works. These models are used to explain the internal processes and to generate hypotheses of the attention. Visual attention operates as a two-stage process.

1st stage – attention is distributed uniformly over the external visual scene and processing of information is performed in parallel.

2nd stage – attention is concentrating on a specific area of the visual scene and processing is performed in a serial ways.



- **“The spotlight” is the 1st model of attention.** William James demonstrated it as having a focus, a margin, and a fringe. The focus is an area that extracts information from the visual scene with a high-resolution, the geometric center of which is where visual attention is directed. Surrounding the focus is the fringe of attention which extracts information in a much more crude fashion (i.e. low-resolution). This fringe extends out to a specified area and this cut-off is called the margin.

- **The zoom-lens model** – is the 2nd model, introduced in 1986. This model inherits all properties of the spotlight model (i.e. the focus, the fringe, and the margin) but has the added property of changing in size. This size-change mechanism was inspired by the zoom lens you might find on a camera, and any change in size can be described by a trade-off in the efficiency of processing. The larger the focus is, the slower processing will be of that region of the visual scene since this fixed resource will be distributed over a larger area. It is thought that the focus of attention can subtend a minimum of 1° of visual angle, however the maximum size has not yet been determined.

- **Feature Integration Theory (FIT)** – posits that “objects are retrieved from scenes by means of selective spatial attention that picks our objects’ feature maps, and integrates those features that are found at the same location into forming objects.

- **Attentional Engagement Theory (AET)** – Duncan and Humphrey. At this phase, descriptions of the objects in a visual scene are generated into structural units; the outcome of this parallel phase is a multiple-spatial-scale structured representation.

- **Neuropsychological model: Lev Vygotsky & Alexander Luria** spoke about 3-part model of neuropsychology: the working brain is represented by 3 co-active processes listed as: Attention, Memory, and Activation. According them Attention is one of the three major co-active processes of the working brain.

- **Kahneman** – explains that there is a single pool of attentional resources that can be freely divided among multiple tasks. His idea to explain the attention in this way is very elementary.

- **Molecular level** – this is one of the new hypotheses, according which attention and concentration in the brain is controlled at the molecular level.

- **Neurotransmitter acetylcholine** – Acetylcholine transmits signals from one nerve cell to another. Memory and concentration may improve by stimulating the receptor in the brain that captures and recognizes acetylcholine. A specific component of the acetylcholine receptor is essential for optimal concentration. In addition, they showed in which part of the brain this process occurs.

Clinical characteristic of attention

Attention is a very basic function that often is a precursor to all other neurological/cognitive functions. The clinical models of attention are used for the evaluation of attention in patients with very different neurologic pathologies and psychiatric disorders. The hierarchic model is based on the picture of attention processes of patients with brain damage, for example patients after coma. Five different kinds of activities of growing difficulty are described in the model;

Clinical Model	Description of clinical models
Focused attention	The ability to respond discretely to specific visual, auditory or tactile stimuli.
Sustained attention (vigilance, concentration)	The ability to maintain a consistent behavioral response during continuous and repetitive activity.
Selective attention	The ability to maintain a behavioral or cognitive set in the face distracting or competing stimuli. Therefore it incorporates the notion of “freedom from distractibility.”
Alternating attention	The ability of mental flexibility that allows individuals to shift their focus of attention and move between tasks having different cognitive requirements.
Divided attention	This is the highest level of attention and it refers to the ability to respond simultaneously to multiple tasks or multiple task demands.

In 1890, William James, in his textbook *The Principles of Psychology*, remarked:

“Everyone knows what attention is. It is the taking possession by the mind, in clear and vivid form, of one out of what seem several simultaneously possible objects or trains of thought. Focalization, concentration, of consciousness are of its essence. It implies withdrawal from some things in order to deal effectively with others, and is a condition which has a real opposite in the confused, dazed, scatterbrained state which in French is called distraction, and Zerstreutheit in German”.

William James differentiated between sensorial attention and intellectual attention. Sensorial attention is when attention is directed to objects of sense, stimuli that are physically present. Intellectual attention is attention directed to ideal or represented objects; stimuli that are not physically present. James also distinguished between immediate or derived attention: attention to the present versus to something not physically present. According to James, attention has five major effects. Attention works to make us perceive, conceive, distinguish, remember, and shorten reactions time.

The characteristic features of attention:

Distractibility	Inability to focus attention; attention drawn to unimportant or irrelevant external stimuli
Selective inattention	Blocking out only those things that generate anxiety.
Hypervigilance	Excessive attention and focus on both internal and external stimuli, a characteristic in PTSD. Sometimes could be noticed a feature of delusional or paranoid states.
Trance	Focused attention and altered consciousness, usually seen in hypnosis, dissociative disorders, and ecstatic religious experiences.
Rumination	Concentration and focus on aspects of experience and unable to easily switch out.
Voluntary attention	The former is stimulus-controlled and involves primarily “bottom-up” processing, whereas the latter is controlled by the central activation of stored representations and thus involves “top-down” as well as “bottom-up” processing.
Simultaneous	It is a type of attention, classified by attending to multiple events at the same time.
Sensorial attention	It is when attention is directed to objects of sense, stimuli that are physically present.
Intellectual attention	It is directed to ideal or represented objects; stimuli that are not physically present.
Immediate/derived	It is the present versus to something not physically present.
Overt orienting attention	It is the act of selectively attending to an item or location over others by moving eyes to point in that direction.
Covert orienting attention	It is the act to mentally shifting one’s focus without moving one’s eyes. Simply it is changes in attention that are not attributable to overt eye movements. Researchers used “filtering” tasks to study the role of covert attention of selecting information. These tasks observe a number of stimuli, but attend to only one.
Visual covert attention	It is a mechanism for quickly scanning the field for interesting locations.
Exogenous attention	it describes attentional processing which is driven by the properties of the objects themselves. Some processes as motion or sudden loud noise, can attract our attention in pre-conscious, or non-volitional way.
Active attention	It is part of the broader theory of ecological perception, although it is a bit older.
Passive attention	In this state no one is at home to experience our life, to receive our sensory impressions, our thoughts and emotions, and to close our actions and responses.

General theories of attention activity assume bottom-up (covert) processes and top-down (overt) processes converge on a common neural architecture. For example, if s. o. attended to the right hand corner field of view, movement of the eyes in that direction may have to be active suppressed.

Disturbances of attention

Attention' disturbances are noted in various psychiatric disorders – the suffering is not able to control the focus of the attention. Sometimes it could be only a psychological problem, but almost in all psychiatric disorders we can find out some of the attention disturbances.

Attention is impaired in various psychological and psychiatric conditions, and it is characterized with inability to control the attention. Sometimes this is interpreted as defensive, due to psychological mechanisms or it is seen as the outcome of physiological disturbance.

Some authors associated **Attention disturbances with low birth weight**. **KM Bohnert and N. Breslau (2008; 2009)** studied 1095 newborn children. The children with sever neurological disturbances were exclude. 62% and 53% of children were classified as having a low birth weight in the urban and suburban communities, respectively. Low birth weight did not influence attention problems in children from the suburban community, whereas the odds of attention problems in the urban community were increased by low birth weight. Their conclusion was that the association between low birth weight and attention disturbance is modulated by social advantage. This was not the case for internalising and externalising problems.

Charles Butter (1987) – proposed that can be discussed various forms of attention disturbances that are related to brain processes differences in the processes involved on the basis of in central activation. A model that incorporates reflex and voluntary attention is presented; according to the model, mechanisms of voluntary attention are “added on” to those of reflex attention and control the latter in a hierarchical manner. It is proposed on the basis of various neurophysiological and neurobehavioral findings that different neural structures control different process that are incorporated in the model.

Although ADD and ADHD are commonly diagnosed in childhood, many struggle with these symptoms into adulthood. This accounts for an addition in the types of attention disorders, which is an adult type. Adult attention disorders may also include either adult ADD or adult ADHD. With either, the same symptoms exist as they do in childhood types. Attention disorders can cause serious implications in an adult's life without proper treatment and many need medication in order to control the symptoms.

ATTENTION DEFICIT HYPERACTIVITY DISORDERS (ADHD)

Attention deficit hyperactivity disorder (ADHD, similar to hyperkinetic disorder in the ICD-10) is a psychiatric disorder of the neurodevelopmental type in which there are significant problems of attention, hyperactivity, or acting impulsively that are not appropriate for a person's age. These symptoms must begin by age six to twelve and persist for more than six months for a diagnosis to be made. In school-aged individuals inattention symptoms often result in poor school performance. In the most cases the cause of this disturbance is unknown. The 1st obvious symptoms appeared when children go to school, at the age between 6-7 years. Sex distribution – 3 times more spread among boys.

Rates are similar between countries and depend mostly on how it is diagnosed. ADHD is diagnosed approximately three times more in boys than in girls. About 30-50% of people diagnosed in childhood continue to have symptoms into adulthood and between 2-5% of adults have the condition. The condition can be difficult to tell apart from other disorders as well as that of high normal activity.

Inattention, hyperactivity (restlessness in adults), disruptive behavior, and impulsivity are common in ADHD. The children have academic difficulties, and problems with relationships. The symptoms can be difficult to define as it is hard to draw a line at where normal levels of inattention, hyperactivity, and impulsivity and significant levels requiring interventions begin. The most typical signs are shown below.

Attention deficit – the child doesn't pay attention of the details, of disturbed concentration at a given function, does not listen the instructions and can not follow them. The child often lose his clothes, shoes and can not remember where they were, could not find them, he forgot the instructions of the teacher, disperse in class

Hyperactivity – even when he is at the chair his hands and legs make various movements – restless legs/hands. He could not play quiet/ calm games,

Impulsivity

He speaks very much, answers before listening the end of the question, highly impulsivity, could not quietly wait for his order, he interrupted the persons during conversation or when they are occupied.

ATTENTION DEFICIT/HYPERACTIVITY DISORDER – 1st DESCRIPTION

- 1865 – Hoffman – The story of restive Philip
- 1886 – France, “unstable child”
- 1902 – England “defect of moral control”
- 1905 – France – “psychological and motor instability”
- 1907 – France “Abnormal children”
- 1914 – France “Children with behavior problems”
- 1922 – Germany, description of children after epidemical encephalitis.
- 1947 – Minimal brain Damage.
- 1962 – Minimal brain dysfunction
- 1971 – sunset of Minimal Brain Damage, Minimal Brain Dysfunction

These hyperactivity symptoms tend to go away with age and turn into “inner restlessness” in teens and adults with ADHD. People with ADHD more often have difficulties with social skills, such as social interaction and forming and maintaining friendships. This is true for all subtypes. About 50% of children and adolescents with ADHD experience social rejection by their peers compared to 10-15% of non-ADHD children and adolescents. People with ADHD have attention deficits which cause difficulty processing verbal and nonverbal language which can negatively affect social interaction. They also may drift off during conversations, and miss social cues.

Cause

The cause of most cases of ADHD is unknown; however, it is believed to involve interactions between genetic and environmental factors. Certain cases are related to previous infection of or trauma to the brain.

Signs and symptoms of ADHD

According to *Diagnostic and Statistical Manual of Mental Disorders (DSM-V)* ADHD could be divided into three subtypes:

Subtypes of ADHD	Signs and Symptoms of ADHD
<p>I. Predominantly inattentive (They may have some or all of the following symptoms).</p>	<ul style="list-style-type: none"> • Be easily distracted, miss details, forget things, and frequently switch from one activity to another • Have difficulty maintaining focus on one task • Become bored with a task after only a few minutes, unless doing something enjoyable • Have difficulty focusing attention on organizing and completing a task or learning something new • Have trouble completing or turning in homework assignments, often losing things (e.g., pencils, toys, assignments) needed to complete tasks or activities • Not seem to listen when spoken to • Daydream, become easily confused, and move slowly • Have difficulty processing information as quickly and accurately as others; • Struggle to follow instructions.
<p>II. Predominantly hyperactive-impulsive</p>	<ul style="list-style-type: none"> • Fidget and squirm in their seats • Talk nonstop • Dash around, touching or playing with anything and everything in sight • Have trouble sitting still during dinner, school, doing homework, and story time • Be constantly in motion • Have difficulty doing quiet tasks or activities • An individual with impulsivity may have some or all of the following symptoms: • Be very impatient • Blurt out inappropriate comments, show their emotions without restraint, and act without regard for consequences • Have difficulty waiting for things they want or waiting their turns in games • Often interrupt conversations or others' activities
<p>III. Combined for both types.</p>	

Associated disorders:

1. Learning disabilities – 20-30%;
2. Tourette syndrome ;
3. Oppositional defiant disorder (ODD) and conduct disorder (CD) – 50%;
4. Hypokalemic sensory overstimulation – 50%;
5. Mood disorders (especially bipolar disorder and major depressive disorder);
6. Anxiety disorders;
7. Obsessive-compulsive disorder;
8. Substance use disorders (alcohol, cannabis);
9. Restless legs syndrome;
10. Iron deficiency anaemia;
11. Sleep disorders – insomnia. Melatonin is sometimes used in children who have sleep onset insomnia

Differential diagnosis (Depression, Anxiety disorder, Mania)

ADHD symptoms which may be related to other disorders		
AD – Depression	Anxiety disorder	AD – manic episode
<ul style="list-style-type: none"> • Depressive symptoms as: guilt, hopelessness, low self-esteem, unhappiness, loss of interest in hobbies, regular activities, sex, or work, suicide ideas • Sleep problems • Unexplained pain • Irritability • Fatigue • Attention • Appetite is changed • Stress – low tolerance 	<ul style="list-style-type: none"> • Persistent feeling of anxiety • Irritability • Inability to relax • Tires easily • Low tolerance for stress • Difficulty paying attention 	<ul style="list-style-type: none"> • Excessive happiness • Hyperactivity • Racing thoughts • Aggression • Excessive talking • Grandiose delusions • Decreased need for sleep; • Inappropriate social behavior • Difficulty paying attention

Alcohol intake during pregnancy can cause fetal alcohol spectrum disorder which can include symptoms similar to ADHD. Exposure to tobacco smoke during pregnancy can cause problems with central nervous system development and can increase the risk of ADHD. Many children exposed to tobacco do not develop ADHD or only have mild symptoms which do not reach the threshold for a diagnosis. A combination of a genetic predisposition with tobacco exposure may explain why some children exposed during pregnancy may develop ADHD and others do not. Children exposed to lead, even low levels, or polychlorinated biphenyls may develop problems which resemble AD Exposure HD and fulfill the diagnosis. Exposure to the organophosphate insecticides chlorpyrifos and dialkyl phosphate is associated with an increased risk; however, the evidence is not conclusive.

“The hunter vs. farmer hypothesis”
T. Hartmann developed the hunter vs. farmer idea as a mental model after his own son was with ADHD. The **hunter vs. farmer hypothesis** states that ADHD in children and its counterpart in adults, the adult attention deficit hyperactivity disorder, have their origins in a tendency in those individuals for behaviors characteristic of hunter-gatherer societies over those of farming societies. This hypothesis suggests that these conditions may be a result of a form of adaptive behavior. Later more recent molecular and clinical researchers, used his idea as a working hypothesis to explain the origin of ADHD.

ADHD - prevalence is probably 3 -5-10% male-to-female 9 -1; Beginning – 6-9 years of age

PATHOGENESIS

- **Morphological and functional –**
- **The size of the brain is smaller;**
- **Disturbed regulation of prefrontal lobe, subcortical lobe, limbic system and reticular formation;**
- **Neurotransmitter level**
- **Disturbed regulation of dopamine, epinephrine and nor-epinephrine, serotonin, and noradrenalin systems.**
- **Brain metabolism**
- **Lower glucose metabolism – prefrontal**

Very low birth weight, premature birth and early adversity also increase the risk as do infections during pregnancy, at birth, and in early childhood. These infections include, among others, various viruses (measles, varicella, rubella, enterovirus 71) and streptococcal bacterial infection. At least 30% of children with a traumatic brain injury later develop ADHD and about 5% of cases are due to brain damage.

The Results of ADHD	Good prognostic signs for ADHD are:
<ol style="list-style-type: none"> 1. Full recover from this disturbance; 2. Some symptoms stay till at a mature age (30-40%); 3. 1/3 of them formed oppositional behavior (OB); 4. 1/3 of children with OB developed behavior disturbances; 5. 1/3 of children with behavior disturbances formed antisocial personality at a mature age; 6. Children with ADHD more often suffered from alcohol, drug dependent and s.o. narcotics, nicotine, stimulants. 7. They often are with some psychiatric diseases at a mature age. 	<ol style="list-style-type: none"> 1. Sex – good prognosis for girls; 2. Intelligence – the high intelligence is a good mark for good prognosis; 3. The beginning is later; 4. No correlation with other psychiatric symptoms; 5. The number of the symptoms is lower; 6. Good family relationship; 7. Medication – regular.

ADHD management usually is a combination of, life style, changes, and medication. Medication is necessary in children with sever symptoms. Long-use of medicaments is not recommended. We must stress on the necessity of adolescents and adults to develop coping skills.

THERAPY	PSYCHOTHERAPY
<ul style="list-style-type: none"> ● Psychotherapy – family, with the child & the parents; ● Co-medication – drug therapy & psychotherapy ● Medication with drug therapy: <ul style="list-style-type: none"> – Stimulants – methylphenidat (Concerta); amphetamine; – Antidepressants – tricyclic, bupropion, SSSR, MAO, 	<ul style="list-style-type: none"> ● To educate the parents (their behavior); ● To educate the child; ● To learn the parents how to communicate with the child; ● To lean to use various methods connected with their behavior ● To learn what kind of rewords to use in order to activate the good behavior in the child; ● Never to be aggressive with the child; ● The room for education must not be with various colors and noises.

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8. Consciousness

Consciousness – The having of perceptions, thoughts, and feelings; awareness. The term is impossible to define except in terms that are unintelligible without a grasp of what consciousness means. Many fall into the trap of equating consciousness with self-consciousness – to be conscious it is only necessary to be aware of the external world. Consciousness is a fascinating but elusive phenomenon: it is impossible to specify what it is, what it does, or why it has evolved. Nothing worth reading has been written on it.

Some thoughts about consciousness:

“I will not let anyone walk through my mind with their dirty feet.”
Mahatma Gandhi

“There is no coming to consciousness without pain. People will do anything, no matter how absurd, in order to avoid facing their own Soul. One does not become enlightened by imagining figures of light, but by making the darkness conscious.”
C.G. Jung

“Life’s most persistent and urgent question is, ‘What are you doing for others?’”
Martin Luther King Jr.

“I don’t believe that consciousness is generated by the brain. I believe that the brain is more of a receiver of consciousness.”
Graham Hancock

“Consciousness cannot be accounted for in physical terms. For consciousness is absolutely fundamental. It cannot be accounted for in terms of anything else.”
Erwin Schrödinger

“Meditation is the dissolution of thoughts in Eternal awareness or Pure consciousness without objectification, knowing without thinking, merging finitude in infinity.”
Voltaire

“Within each of us is a light, awake, encoded in the fibers of our existence. Divine ecstasy is the totality of this marvelous creation experienced in the hearts of humanity”
Tony Samara

Definitions for Consciousness

Consciousness is:

- the quality or state of being aware especially of something within oneself;
- the state or fact of being conscious of an external object, state, or fact;
- awareness; especially: concern for some social or political case. (www.merriam-webster.com/dictionary/consciousness)
- *the state of being conscious; awareness of one’s own existence, sensations, thoughts, surroundings, ets.*
- *the thoughts and feelings, collectively, of.* (dictionary.reference.com/browse/consciousness)

Consciousness is the quality or state of awareness, or, of being aware of an external object or something within oneself. It has been defined as: sentience...

(en.wikipedia.org/wiki/Consciousness)

When you are awake and aware of your surroundings, that’s *consciousness*. There are different types of *consciousness*, including social *consciousness*, being...

(www.vocabulary.com/dictionary/consciousness)

“Wilder Penfield was not only a great surgeon and a great scientist, he was an even greater human being.”

(Sir George Pickering, Regius Professor of Medicine at Oxford University)

Our understanding of the human brain is achieved by the W. Penfield’s revolutionary studies. With the help from collaborators, Penfield refined and extended a daring surgical technique. The “Montreal Procedure” allowed patients to remain awake and to describe their reactions while the surgeon stimulated different areas of the brain. His surgical treatment of hundreds brains if epileptic patients permitted him to receive information of the various brain’ areas. ***For the 1st time he mapped accurately the cortical areas relating to speech.***

Penfield ***discovered the physical base of memory*** – by stimulation of the temporal lobes were provoked startlingly vivid recollections. He was interested not only by the physical working of the brain, but also how they influenced the mind and the personality. ***“The problem of neurology,” he wrote in 1965, “is to understand man himself.”***



**Wilder Penfield
(1891–1976)**

Consciousness is connected with attention, perceptions, thinking, our orientation, but one of the most important the state of our arousal.

Arousal

Arousal is a physiological and psychological state of being awake or reactive to stimuli. It involves the activation of the reticular activating system in the brain stem, the autonomic nervous system and the endocrine system, leading to increase heart rate and blood pressure and a condition of sensory alertness, mobility and readiness to respond. Five major systems originating in the brainstem, with connection extending throughout the cortex, a based on the brain’s neurotransmitters, ***acetylcholine, norepinephrine, dopamine, histamine, and serotonin.*** Their stimulation provoked cortical activity. The **Noradrenergic system is a mass of axons in the locus coeruleus** ascends up into the neocortex, limbic system, and basal forebrain. Most of the neurons are in the posterior cortex, which is important for sensory information, and arousal. The activation of locus coeruleus and release of norepinephrine causes wakefulness and increases vigilance. The neurons of the **Acetylcholinergic system** are located into the pons and the basal forebrain. All of the other four neurotransmitters play a role in activating the acetylcholine neurons. The **dopaminergic system** which releases dopamine that is produced by the substantia nigra. The limbic system is important for control of mood and the nucleus accumbens signal excitement and arousal.

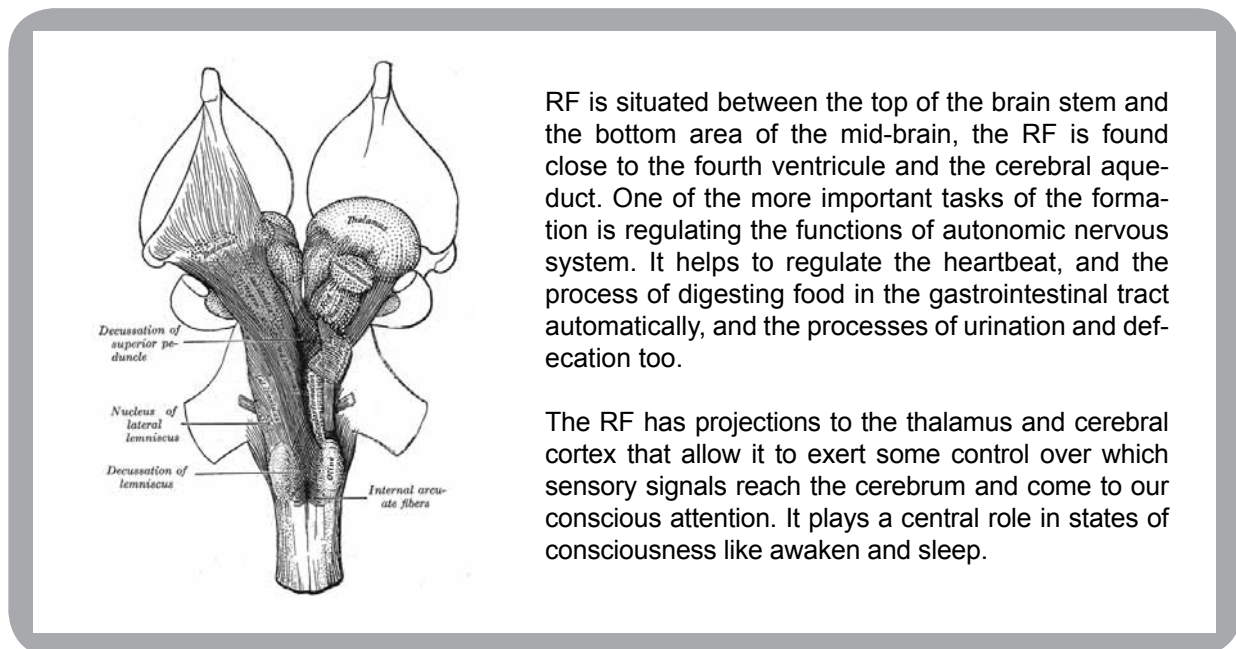
Arosal is important in regulating consciousness, attention, and information processing. It is very important for motivating certain behaviors, such as mobility, the pursuit of nutrition, the fight response and sexual activity. Hans Eisenck, differences extroverts and introverts people. Later researchers established that extroverts/introverts persons have different arousability.

Reticular formation (RF)

Moruzzi and Magoun first investigated the neural components regulating the brain's sleep-wake mechanisms in 1949. Physiologists had proposed that some structure deep within the brain controlled mental wakefulness and alertness. It had been thought that wakefulness depended only on the direct reception of afferent (sensory) stimuli at the cerebral cortex.

The term "reticular formation" is seldom used anymore except to speak in generalities. Modern scientists usually refer to the individual nuclei that comprise the reticular formation.

The direct electrical stimulation of the brain could simulate electrocortical relays. Magoun used this principle to demonstrate, on two separate areas of the brainstem of a cat, how to produce wakefulness from sleep.



RF is situated between the top of the brain stem and the bottom area of the mid-brain, the RF is found close to the fourth ventricle and the cerebral aqueduct. One of the more important tasks of the formation is regulating the functions of autonomic nervous system. It helps to regulate the heartbeat, and the process of digesting food in the gastrointestinal tract automatically, and the processes of urination and defecation too.

The RF has projections to the thalamus and cerebral cortex that allow it to exert some control over which sensory signals reach the cerebrum and come to our conscious attention. It plays a central role in states of consciousness like awoken and sleep.

The neurons of the **reticular formation** all play an important role in maintaining behavioral arousal and consciousness, and regulation of the sleep-wake rhythm.

The reticular activating system (RAS), or extrathalamic control modulatory system, is a set of connected nuclei in the brains of vertebrates that is responsible for regulating arousal and sleep-wake transitions.

The Reticular Formation consists of more than 100 small neural networks, with various functions including the following:

1. somatic motor control ;
2. cardiovascular control;
3. pain modulation;
4. sleep and consciousness.

The functions of the reticular formation are:

- Modulatory – which are found in the rostral sector of the RF;
- Premotor – they are localized in the neurons in more caudal regions.

To bind all of our different external and internal perceptions together.”

(It was written by Francis Crick, the author of DNA, in July, 2004, just before his death wrote.)

Many scientists will agree with his last idea that consciousness has to involve the integration of activity from several brain networks.

Christof Koch and his colleagues suggested that this conductor would need to integrate information from the various distinct regions of the brain and together information arriving at different time. Some throw the idea that its structure lies deeply inside the brain – to the claustrum. **Mohamad Koubeissi** and his collaborators showed how they could control an woman’s consciousness off and on by stimulating her claustrum. She was with epileptic seizure. One electrode was positioned next to the claustrum, an area that had never been stimulated before. When they used high frequency electrical impulses, the woman lost consciousness. When stimulation stopped again was consciousness, but had no memory of the event. The same things happened every time when this area was stimulated (Epilepsy and Behavior, doi.org/tgn). Before stimulation the woman could talk, move, snap her fingers, and repeat the word “house”. Since there was no sign of epileptic brain activity during or after the stimulation, they were sure that it was not a side effect of the seizure.

Everybody could ask: “Does really the claustrum is so important for consciousness and where is the key?” Let us make a very simple comparison with our TV-set. We would like to see TV-program “National Geographic”, but we can not see anything till we switch on the TV-set. There are many programs, but we can not find “National Geographic” without the help of TV-remote control. So like this TV-remote control consciousness is a very complex process. We know that various brain structures and networks are included, but nobody knows the key. There is no doubt that electrical stimulation in some regions of human brain caused consciousness, but even these findings neural mechanisms of consciousness could not be understood. It is true that consciousness is a great mystery even in the 21st century, when many people are ready to travel to Cosmos.

The recording of neural activity and the electrical microstimulation of neurons in relation to consciousness is a genuine progress.

The hypothesis of specific neurons of consciousness included 2 questions:

1st question	2nd question
<p>What is the difference between a consciousness neuron and a neuron that is not related to consciousness? The fact is that the genome of all cells in the organism is identical suggest that neurons of consciousness are characterized by the expression of a specific combination of genes. So consciousness neurons should differ from neurons not associated with consciousness by the expression of RNA-fragments and proteins that determine their specific properties.</p>	<p>The evolutionary process involves evolution of the genome, which along with mutations involves duplication of genes. Increased complexity of genome opens the way to increased complexity of proteins. The environment of neurons of consciousness is the evolution and the improvement of neurons of consciousness is based on evolution of the genome.</p>

The hypothesis that consciousness neurons existed make researchers on consciousness at cellular and molecular levels a suitable topic of neuroscience.

Concept of distributed consciousness

It is proposed that qualitatively different sensations arise with specific neurons of consciousness, which in turn form neural fields, or neural maps. A change of one sensation to another is determined by a shift in the focus of excitation on a neural map. This leads to replacement of activity in one consciousness neuron by excitation of another one.

The question is: *“Where neurons of consciousness are located? Are they disturbed across brain structure or concentrated in a single center? The visual cortex is considered to be responsible for the perception of visual signals.*

Awake but unconscious

Koubeissi’s team found that a woman’s loss of consciousness was associated with increased synchrony of bioelectrical activity – specially brainwaves in the frontal and parietal regions of the brain, that participate in conscious awareness. Although different areas of the brain are thought to synchronize activity to bind different aspects of an experience together, too much synchronization is not a good sign. The brain can not distinguish one aspect from another. Their team had the idea is not possible a lower frequency stimulation of the claustrum in epileptic patient to return back to a normal state.

Regulating Sleep-Wake Transitions

The main function of RFS is to modify activate the functions of thalamus and cortical function. EEG is desynchronized. There were established EEG differences of brain waves during sleep and wakefulness. Low voltage and fast brain waves (EEG desynchronization) are associated with wakefulness and REM-sleep. Large voltage and slow waves are found during non-REM sleep (more information you can see in the part for “Sleep”).

Animal consciousness

The examination of animal consciousness is connected with many difficulties, because non-human animals are unable to express human language to tell us about their feelings. Most people have a strong intuition that some animals such as cats and dogs, are conscious, while others, such as insects, are not; but the sourced of this intuition are not obvious. Descartes has been blamed for mistreatment of animals due to the fact that he believed only humans have non-physical mind. Philosophers believed that the existence and nature of animal consciousness can never be understood. Thomas Nagel in his essay “What is it like to be a Bat?” He said that an organism is conscious “if and only if there is something that is like to be that organism – something it is like for organism”, and he argued that no matter how much we know about an animal’s brain and behavior, we can never really put ourselves into the mind of the animal and experience its world in the way it does itself. Many psychologists and ethologists have argued for the existence of animal consciousness by describing a range of behaviors that appear to show animals holding beliefs about things they cannot directly perceive.

On July 7, 2012, eminent scientists from different branches of neuroscience gathered at the University of Cambridge to celebrate the Francis Crick Memorial Conference, which deals with consciousness in humans and pre-linguistic consciousness in nonhuman animals.

“Our consciousness needs something akin to an orchestra conductor

Consciousness and Freudian theory

Psychoanalysis regarded everything mental being in the first place unconscious, and thus for them, consciousness might be present or absent. This of course provoked a denial from philosophers for whom consciousness and mental were identical and they could never conceive of an absurdity such as an unconscious mental state. Reasons for believing in the existence of the unconsciousness are of course empirical, but the question as to what most fundamentally distinguishes the Freudian unconscious is a conceptual one. It is very important that one understands the nature of the unconsciousness in broad holistic terms rather than the fine details that Freud gave, and also one must follow the coherence of such a concept to understand our present day understanding of consciousness.

(Freud, 1912; Ricoeur, 1970)

Sigmund Freud (1856-1939) – Freud was born in Freiberg, Moravia, Austrian Empire (now Příbor, Czech Republic) on the 6th of May, 1856. When he was at the age of 5 his family went to live in Vienna, Austria. In 1881 he finished his medical education.

In October 1885 he went to Paris on a fellowship to study with Jean-Martin Charcot, a renowned neurologist who was famous with his scientific achievements in hypnosis. When he began his private practice, together with his friend Josef Breuer used hypnosis that was different from French method, they had studied in Paris.

For several months he lived in Paris studying hypnosis by Jean Charkot, a French neurologist. When he returned back to Vienna he began to use hypnosis with his patients. He developed therapeutic techniques as **“free association”** and discovered **transference**, establishing its central role in the analytic process. He formulated the Oedipus complex as the central tenet of psychoanalytical theory. His analysis of dreams as wish-fulfillments provided him with models for the clinical analysis of symptom formation and the mechanisms of repression as well for elaboration of his theory of the unconscious as an agency disruptive of conscious states of mind.

Anna O, was one of their patients, that was invited to talk about her symptoms, while under hypnosis, she thought out the phrase **“talking cure”** for her treatment. Talking in this way the symptoms reduced in severity as she remembered traumatic incidents associated with their onset. He was sure that patients’ dreams would be very useful in the therapy.

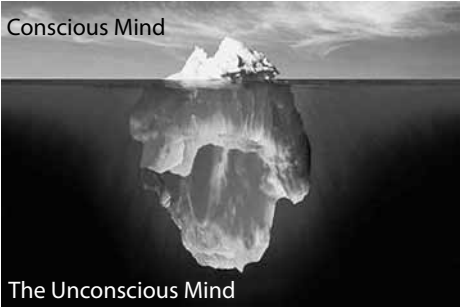
Together with Breuer they had **another very interesting case** with one of their patient. She was introduced in hypnosis. When she was in deep hypnosis they suggested her to come on the next day just at 10 o’clock AM, to bring an umbrella and to open it in front of them. They were surprised when the patient on the next day came to their consulting room. She had an umbrella and opened it in front of them. They asked her: “Today is a charming sunny day and why are you bringing the umbrella, and why do you open it.” She was ashamed. She had no logical explanation for this rash action. Than she immediately thought out an absurdity nonsense explanation: “When I came to the séance I passed through the market and decided to buy this umbrella, but I did not test if its mechanism works. When I came here it comes into my mind about the mechanism and that is why I opened the umbrella to test it”. The two psychiatrists throw glances at each other.

After these cases in 1896 Freud had abandoned hypnosis and was using the term **“psychoanalysis”** to refer his new clinical method and the theories on which it was based.

Freud was the father of unconscious. He created the personality theory that he called “psychoanalytic theory”. He believed that he could help reveal the nature of their inner conflicts. For Freud the personality theory was composed of three interacting systems and he divided the psych into 3 systems: conscious-preconscious-unconscious.

Freud gave consciousness the quality and capacity to transform experienced activity into unconscious states, similar to how different forms of energy are interchanged in physics. It could also play a part in inhibiting and restricting certain thoughts from becoming conscious. It also served the purpose of transforming quantities of unconscious excitation into qualitative experiences of pleasure and unpleasure (Freud, 1900; Hartmann, 1964).

The Unconscious Mind



Freud compared the mind to an iceberg
(See in McLeon, 2013)

Topographical model of the Mind

In 1900, and 1905 Freud made a topographical model of the Mind. He described the features of Mind’s structure and function. According him the conscious mind is at the top of the iceberg. It is the unconscious mind a repository of a “caudron’ of primitive wishes and impulse kept at bay and mediated by the preconscious area.


Freud thought that some events and desires often could be too frightening and painful for the patient’s knowledge. Freud was sure that such information was locked away in a region that he called the unconscious mind. It could happen to the process of repression.

Sigmund Freud stressed on the importance of the unconscious mind, and the 1st idea of his theory was about the ability of the unconscious mind to govern the people’s behavior. So the goal of psychoanalysis is to make the unconscious conscious.


The Psyche

In 1923 Freud developed a more structural model of the mind comprising the entities id, ego and superego (what Freud called “the psychic apparatus”).


These are not physical areas within the brain, but rather hypothetical conceptualizations of important mental functions.
(see in McLeon, S., 2013)



Id:
Instincts



Ego:
Reality



Superego:
Morality

According to Laplanche and Pontalis (1983) the analysis of what it is to be in consciousness is very important for the development of the theory of unconscious mentality. If s.o. decides that the mental states are conscious alone than he must be very sceptical about Freudian theory and the topographical model of the mind proposed by him.

“For example, mental states like beliefs and values do not exist solely by virtue of the consciousness in them. Freud’s notion of unconscious mentality is arrived at by pressing the distinction of mental states from consciousness and combining it with the topographical model where all the psychological locales are spoken of as existing independently from their members at any given moment (Freud, 1915; Freud, 1937).

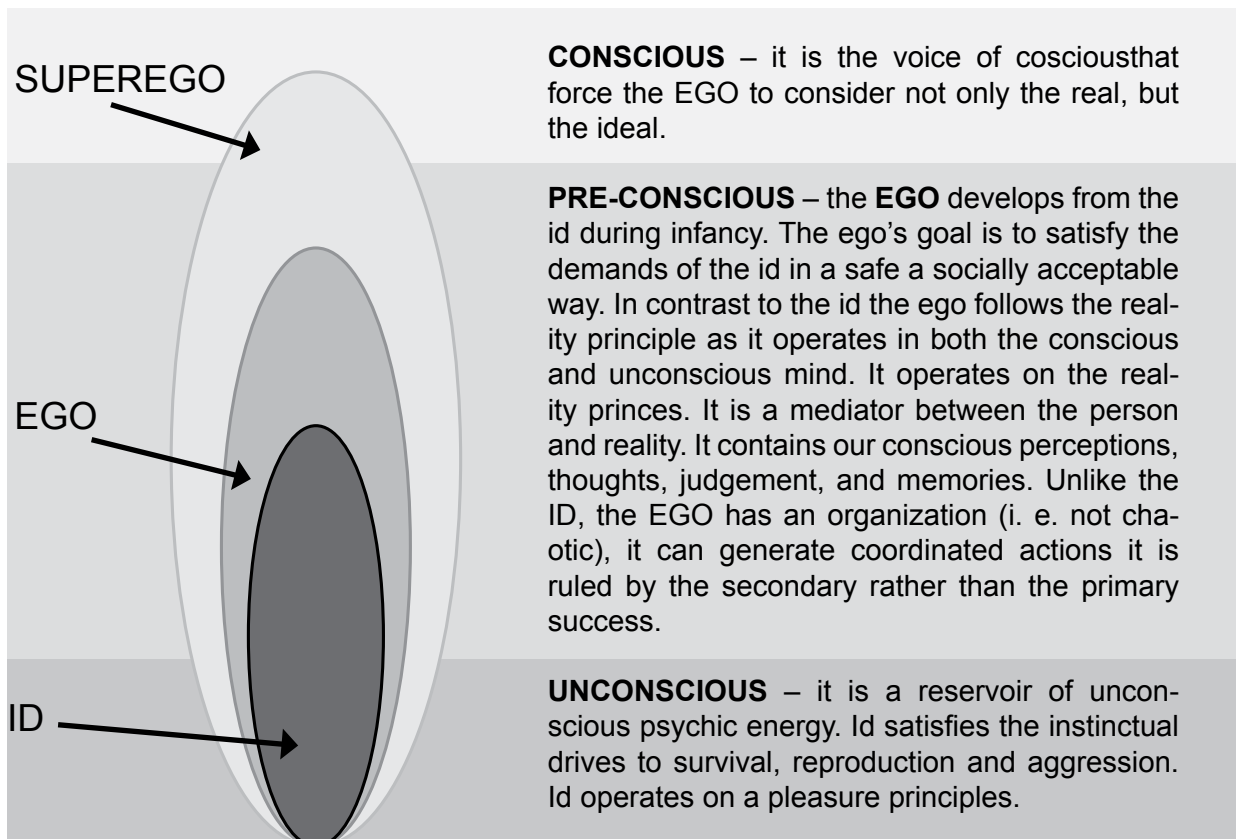
Freud stressed on the fact that some of the unconsciousness may be entirely composed of ideas that were previously conscious and have been repressed.

According to Freud thought **id** operated at an unconscious level – **id** works on the pleasure principles. **Id** is a reservoir of unconscious psychic energy. **Id** satisfied the instinctual drives to survival, reproduction and aggression.

Id contains 2 kinds of biological instincts, that Freud called Eros and Tanatos.

Eros (life instinct)	Thanatos (death instinct)
It helps the individual to survive and controls life sustaining activities as breathing, eating, and sex. The energy created by the life instincts is known as libido. (Freud, 1925)	It is in contrast with Eros. It is destructive instinct that could be spread all human beings. Their energy could be directed outward onto others, it is express as aggression. Eros is stronger than Thanatos. The aggression could be turned inside – suicide.

The **superego** develops during early childhood (when the child identifies with the same sex parent) and is responsible for ensuring moral standards are followed. The Superego operates on the morality principle and motivates us to behave in a socially responsible and acceptable manner.



The superego can make a person feel guilty if rules are not followed. When there is conflict between the goals of the id and superego the ego must act as a referee and mediate this conflict. The ego can deploy various defense mechanisms (Freud, 1894, 1896) to prevent it from becoming overwhelmed by anxiety.

Defense Mechanisms (see in McLeon, S., 2013)

Mechanism	Description	Example
Repression	Repression is an unconscious mechanism employed by the ego to keep disturbing or threatening thoughts from becoming conscious.	During the Oedipus complex aggressive thoughts about the same sex parents are repressed
Denial	Denial involves blocking external events from awareness. If some situation is just too much to handle, the person just refuses to experience it.	For example, smokers may refuse to admit to themselves that smoking is bad for their health.
Projection	This involves individuals attributing their own unacceptable thoughts, feeling and motives to another person.	You might hate someone, but your superego tells you that such hatred is unacceptable. You can 'solve' the problem by believing that they hate you.
Displacement	Satisfying an impulse (e.g. aggression) with a substitute object.	Someone who is frustrated by his or her boss at work may go home and kick the dog.
Regression	This is a movement back in psychological time when one is faced with stress.	A child may begin to suck their thumb again or wet the bed when they need to spend some time in the hospital.
Sublimation	Satisfying an impulse (e.g. aggression) with a substitute object. In a socially acceptable way.	Sport is an example of putting our emotions (e.g. aggression) into something constructive.

Freud used a modification of Breuer's method that he called "**pressure technique**". His therapeutic method later developed as his newly developed analytic technique of interpretation and reconstruction. Freud mentioned that most of his patient reported sexual abuse in early childhood. First he thought that they were based for his attractive theory, but later he believed that they were patient's fantasies. Later he explained with Oedipal fantasies. He thought it was not possible all the relatives of this young females to be so perverse persons. Freud's another version was that unconscious memories of infantile sexual abuse were at the root of psychoneuroses of some of his patients.

Freud had 3 publications about his seduction theory. All of them deeply repressed their memories of sexual abuse in early childhood. In his articles he mentioned that these patients were not consciously aware of these memories, and must be presented as unconscious memories if they were to result in hysterical symptoms or obsessions. The patients had to "reproduce" infantile sexual abuse "scene" that Freud was sure that had been repressed into unconscious.

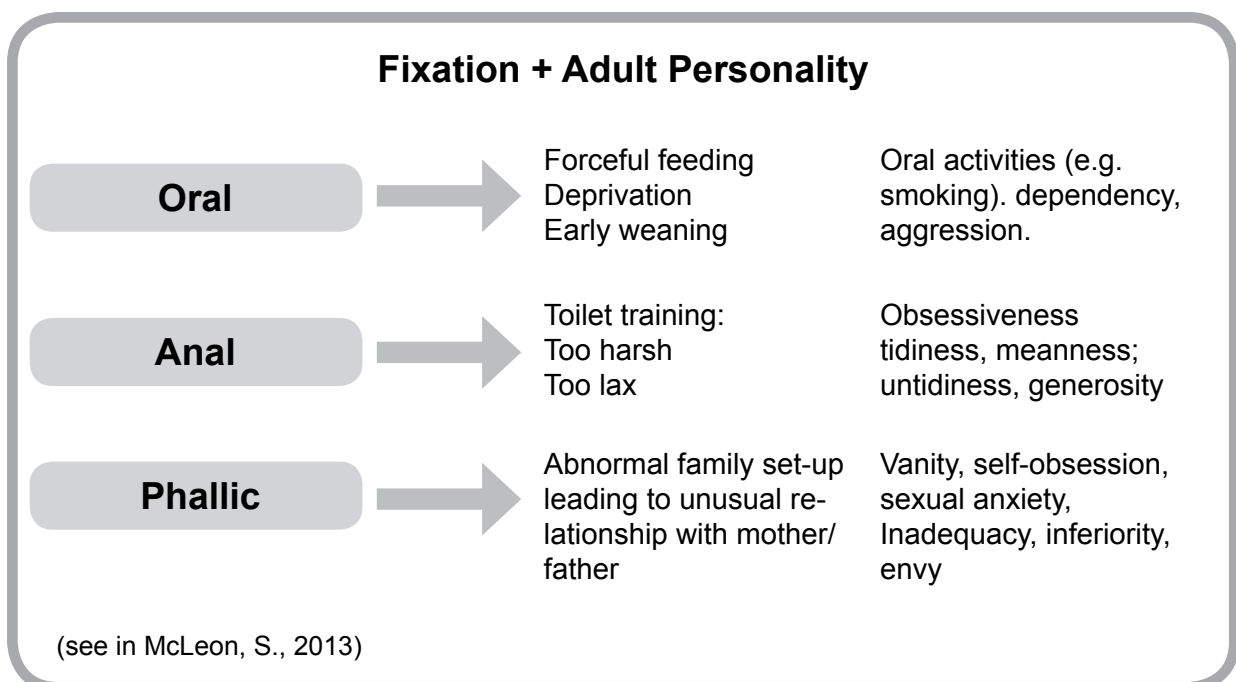
Freud's Psychosexual Stages

Freud tried to understand the nature of neurotic illness, and was sure that some of them were connected with repression of their sexual needs. He pays a special attention to their wishes and desires, their experience of love, hate, shame, guilt and fear. So he developed his theory of psychosocial development and the Oedipus complex. He declared that children were born with a libido – a sexual (pleasure) urge. He described the stages of childhood, during which the child seeks pleasure from different objects.

Freud's Sexual stages

Phase	Age	Description	Developed
ORAL	0-18th months	The infant derives maximum gratification of id impulses from excitation of the sensory endings around the mouth. Sucking and feeding are the principle pleasure.	EGO-develops
ANAL	After the 2nd year	Enjoyment shifts to the anus and the elimination and retention of faeces. The anus – withholding or expelling faeces.	
PHALIC	After the 3rd year	Maximum gratification comes from the stimulation of the genitalia. The penis or clitoris masturbation.	SUPER-EGO develops
LATENT	Between 6-12 year	The id impulses are less intense and do not play a direct role in motivating behavior during this period. Little or no sexual motivation.	
GENITAL	The final and adult period	During this period heterosexual interests predominate. The penis or vagina – sexual intercourse.	

He believed that if s. o. would like to be psychic healthy, he must successfully complete each stage. If a stage is not complete successfully the person may develop various mental disturbances. Mental abnormalities could be provoked if a stage is not completed successfully. The person could fixated in one of the described by Freud stages.



Freud's theory shows from one side how important is childhood for the personality and from the other side how this personality is determined by their childhood experience. Person that had problems in early childhood at a given stage could develop some psychiatric problems and need serious psychological support.

The concept of the unconscious was central to Freud's account of the mind. Freud believed that while poets and thinkers had long known of the existence of the unconscious, he had ensured that it received scientific recognition in the field of psychology. The concept made an informal appearance in Freud's writings.

The unconscious was first introduced in connection with the phenomenon of repression, to explain what happens to ideas that are repressed. Freud stated explicitly that the concept of the unconscious was based on the theory of repression. He postulated a cycle in which ideas are repressed, but remain in the mind, removed from consciousness yet operative, then reappear in consciousness under certain circumstances. The postulate was based upon the investigation of cases of traumatic hysteria, which revealed cases where the behavior of patients could not be explained without reference to ideas or thoughts of which they had no awareness. This fact, combined with the observation that such behavior could be artificially induced by hypnosis, in which ideas were inserted into people's minds, suggested that ideas were operative in the original cases, even though their subjects knew nothing of them.

Carl Gustav Jung & collective unconscious (CU)

Carl Gustav Jung, born 26 July 1875, Kesswil, Thurgau, Switzerland.

One of the most important in his hypothesis is his belief that the CU reflects the cosmic order and the history of the human species. He is not interested in early development of childhood, and infantile development and psychological conflict between the wishes and the forces them than integration between different parts of the person. Jung stressed on the person's problems in middle and later life. His objective was to allow people to experience the split-off aspects of themselves, such as the anima (a man's suppressed female self), the animus (a woman's suppressed male self), or the shadow (an inferior self-image), and thereby attain wisdom.



Jung developed the theory of archetypes too. They are manifested in symbols that appeared in dreams, disturbed states of mind, and various products of culture. He created some of the best known psychological concepts, including not only the archetype and the collective unconscious, but the complex, and synchronicity. The Myers-Briggs Type Indicator (MBTI), a popular psychometric instrument, was developed from Jung's theory of psychological types. The central concept of analytical psychology is individuation – the psychological process of integrating the opposites, including the conscious with the unconscious, while still maintaining their relative autonomy. Jung considered individuation to be the central process of human development.

Jung saw the human psyche as "by nature religious" and made this religiousness the focus of his explorations. Jung is one of the best known contemporary contributors to dream analysis and symbolization.

Disorders of consciousness

The most spread medical conditions that inhibit disorders of consciousness are: they included minimally conscious state and persistent vegetative state, but sometimes also includes the less severe locked-in syndrome and more severe chronic coma. Differential diagnosis of these disorders is an active area of biomedical research. Finally, brain death results in an irreversible disruption of consciousness. While other conditions may cause a moderate deterioration (e.g., dementia and delirium) or transient interruption (e.g., grand mal and petit mal seizures) of consciousness, they are not included in this category.

Disorder	Description
Locked-in syndrome	The patient has awareness, sleep-wake cycles, and meaningful behavior (viz., eye-movement), but is isolated due to quadriplegia and pseudobulbar palsy.
Minimally conscious state	The patient has intermittent periods of awareness and wakefulness and displays some meaningful behavior.
Persistent vegetative state	The patient has sleep-wake cycles, but lacks awareness and only displays reflexive and non-purposeful behavior.
Chronic coma	The patient lacks awareness and sleep-wake cycles and only displays reflexive behavior.
Brain death	The patient lacks awareness, sleep-wake cycles, and brain-mediated reflexive behavior.

Coma

Coma (from the Greek κῶμα kōma, meaning “deep sleep”) is a state of unconsciousness lasting more than six hours in which a person: cannot be awakened; fails to respond normally to painful stimuli, light, or sound; lacks a normal sleep-wake cycle; and, does not initiate voluntary actions. A person in a state of coma is described as being comatose. A comatose person exhibits a complete absence of wakefulness and is unable to consciously feel, speak, hear, or move. For a patient to maintain consciousness, two important neurological components must function. The first is the cerebral cortex – the gray matter that covers the outer layer of the brain. The other is a structure located in the brainstem, called reticular activating system (RAS).

Chronic coma

In chronic coma the patient lacks awareness and sleep-wake cycles and only displays reflexive behavior. In medicine, a coma (from the Greek κῶμα kōma, meaning deep sleep) is a state of unconsciousness, lasting more than six hours in which a person cannot be awakened, fails to respond normally to painful stimuli, light, sound, lacks a normal sleep-wake cycle and does not initiate voluntary actions. A person in a state of coma is described as comatose. Although, according to the Glasgow Coma Scale a person with confusion is considered to be in the mildest coma. Although a coma patient may appear to be awake, they are unable to consciously feel, speak, hear, or move. For a patient to maintain consciousness, two important neurological components must function impeccably. The first is the cerebral cortex which is the gray matter covering the outer layer of the brain.

Patients with coma and chronic coma are not an object of commentary for psychologists and psychiatrists. Their relatives need more psychological and psychotherapeutic support.

Brain death

Brain death is the irreversible end of all brain activity, and function (including involuntary activity necessary to sustain life). The main cause is total necrosis of the cerebral neurons following loss of brain oxygenation. After **brain death** the patient's lacks any sense of awareness; sleep-wake cycles or behavior, and typically look as if they are dead or are in a deep sleep-state or coma. Although visually similar to a comatose state such as persistent vegetative state, the two should not be confused.

There are some moral and psychological aspects connected with the ability their organs to be used – they could become donors. This aspect could be decided by their relatives. Patients classified as brain dead are legally dead and can qualify as organ donors, in which their organs are surgically removed and prepared for a particular recipient.

Delirium tremens

Delirium tremens (DT) for the 1st time was described in 1813. It was caused by withdrawal from alcohol. Delirium could be caused and by other drugs as sedative-hypnotics such as caffeine or cocaine, and various somatic diseases (head injury, infections, fever, intoxication, brain cancer, narcotic drugs) but the most serious complications could be by withdrawal with alcohol. It is connected with a history of alcoholism, especially in those who drink the equivalent of 7 to 8 US pints (3 to 4 l) of beer or 1 US pint (0.5 l) of distilled beverage daily. Delirium tremens also commonly affects those with a history of habitual alcohol use or alcoholism that has existed for more than 10 years. About 50-60% of alcoholics developed any significant withdrawal symptoms after stopping alcohol intake, and only 2% of them later developed DT. It must be stressed that death rates is about 5-15% in patients with DT.

Symptoms in DT: the main symptoms are nightmare, agitation, global confusion, disorientation, visual and auditory hallucinations, fever, problems with their blood pressure and heart-vessel system. Typical for DT is that the symptoms escalate in the night. They are very agitated and feel anxiety and fear, panic attacks and paranoia, and could not sleep.

Sleep-walking (somnambulism, noctambulism)

Sleepwalking, also known as **somnambulism** or **noctambulism**, is a sleep disorder belonging to the parasomnia family, spread about 1-15% from general population. Its peak is between 4-8 years, about 20%. Sleepwalkers arise from the slow wave sleep stage in a state of low consciousness and perform activities that are usually performed during a state of full consciousness. These activities can be as benign as sitting up in bed, walking to the bathroom, go out of the house and go out to the street. Although generally sleepwalking cases consist of simple, repeated behaviors, there are occasionally reports of people performing complex behavior while asleep, although their legitimacy is often disputed. Sleepwalkers often have little or no memory of the incident, as their consciousness has altered into a state in which it is harder to recall memories. Although their eyes are open, their expression is dim and glazed over. Sleepwalking may last as little as 30 seconds or as long as 30 minutes.

There are also **high-voltage delta waves in somnambulists up to 17 years of age**. This presence might suggest an immaturity in the central nervous system, also a possible cause of sleepwalking.

Automatism – Researchers sometimes disagree about the classification of sleepwalking. Sleepwalking is clustered in families, and the percentage of childhood sleepwalking increases to 45% if one parent was affected, and 60% if both parents were affected. However, there is no recorded preference to male or female individuals. Drug and alcohol consumption has been linked to sleep walking activity. Epileptic automatisms are associated with the changes of consciousness too.

Therapy – if there are EEG changes is better in the evening before sleep to take anti-convulsant drug, benzodiazepine. We have good experience with Carbamazepine (Tegretol, Finlepsin Neurotop). Many experts advise putting away dangerous items and locking doors and windows before sleep to reduce risks of harmful activity while sleepwalking. Good sleep hygiene and avoiding sleep deprivation is also recommended. Other method is – to lock the doors of the balcony, kitchen, the door and street door. It is good to put a wet cloth in front of the child's bed. The child must sleep without any stockings and when the child steps on the wet cloth immediately will awaken.

Sigmund Freud (1907) believed that sleepwalking was connected to fulfilling sexual wishes and was surprised that a person could move without interrupting their dream. At that time, Freud suggested that the essence of this phenomenon was the desire to go to sleep in the same area as the individual had slept in childhood.

Crime: Because sleepwalking can result in violent behavior, legal courts sometimes deal with cases involving sleepwalkers. These cases include homicide, and sexual harassment. The level of responsibility and severity of punishment has been highly debated because sleepwalkers are almost always oblivious to their activity during an episode.

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IV. SLEEP

For a period of several hours our conscious is excluded but the functions of our somatic organs and our vegetative parameters continued their work. Nearly 1/3 of life is spend in sleep. Every day everybody voluntary goes to bed and transit into an easily reversible state of unre-sponsiveness and tranquility.

Until the 2nd half of the 20th century scientists pay more attention to qualitative variations within sleep. Different kinds of sleep have been recognized.

In everyday lectures until the 2nd half of the 20th century the scientists speak for:

- Good sleep
- Poor sleep
- Deep sleep
- Light sleep

Scientists conceptualize the sleep as:

- Sleep is a state of passive recovery of human's strength.
- The most important revolutionary thinking about sleep is that it has been evaluated of the different elements of sleep and their potential functional roles.

Sleep-wake rhythm:

- **Genetic predisposition** – newborn children have the rhythm of one of their parents; **Emde (1975)** established that everybody is born with a specific sleep-wake rhythm and it is wrong to force the newborn child another rhythm. The best for the child is: *"To eat when the child is hungry and to sleep when the child wants to sleep, and to be awaken when the child wants"*
- **Berukowitch (1969, 1970)** – the newborn children are with their own rhythm.
- **Berukowich & Luria** – this rhythm is established even when the newborn children are prematurely born.
- **N. Madjirova (1995)** – the newborn children have the rhythm of one of their parents;
- **Mendeleeva (1985)** – measured the temperature of the children and established 3 type of rhythms – arrhythmic, morning, evening.

<p><i>Some curious facts with the sleep:</i></p>	<ul style="list-style-type: none"> • Newborn children sleep – from 7 to 20 hours; • Till the end of the 1st year – about 15-16 hours; • Till the 4th year – about 14-15 hours; • Till the 12 year – about 12 hours; • Till the 18 year – about 10 hour; • Adults: <ul style="list-style-type: none"> – 62% sleep about 7-8 hours; – 15% sleep between 5-6 hours; – 5-8% – smaller than 5 hours; – 8-13% – between 9-10 hours; – only 2% – more than 10 hours.
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Function of sleep

It has been observed that persons sleeping for 7-9 hour per day have significantly lower rates of illness. On the other hand, certain disorders carry a higher mortality when present during sleep (especially early hours of morning), e.g. coronary artery disease, nocturnal asthma, sudden nocturnal death (in south-east Asian men), and sleep apnea.

It has been observed that there is a decrease in the metabolic rate during night sleep by 5-25%. So, conservation of energy appears to be important function of sleep.

The nature of Sleep

Sleep usually requires the presence of relaxed skeletal muscles and the absence of the goal-directed behavior of which the waking organism is capable (able). The characteristic is associated with sleep in humans and in many but not all other animals. The relaxation of skeletal muscles and the passive role towards the environment are symptomatic of sleep for instance sleepwalking raise the questions about whether the brain is capable of simultaneously being party asleep and party awake.

Three additional criteria distinguish sleep from other states. These criteria are:

- Reversibility;
- Recurrence;
- Spontaneity

The American scientists Aserinsky & Kleitment (1953) made a revolutionary in sleep hypothesis and traced the discovery of sleep characterized by RAPID EYE MOVEMENT (REM) sleep.

They were the 1st that reported for REM sleep that is connected with recuperative deactivation of the CNS (Central Nervous System). Various centers and autonomic nervous system measurements seem to show that the REM stage of sleep is more nearly like activated wakefulness than it is like other sleep.

REM sleep is sometimes referred as “paradoxical sleep”

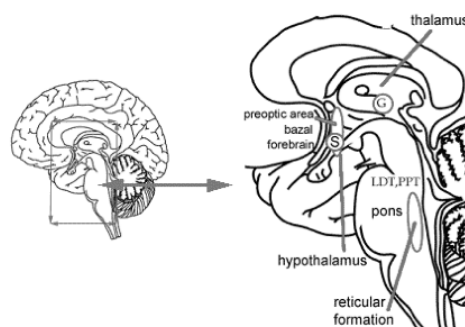
- So the early concepts that sleep is a passive state has been ruined. It is spoken about 2 phases:
NREM (non-rapid eye movement) phase;
REM phase.
- The recent data stress on the fact that the both phases actually show complex brain activity in different locations of the brain and in different pattern.

The decreased sensitivity of the human sleeper to the external environment are the typical closed eyelids, or the functional blindness, associated with the sleep while the eyes are open and the pre-sleep activities that include seeking surroundings characterized by reduced or monotonous levels of sensory stimulation.

Physiology of sleep

Sleep-wake cycle is regulated by multiple sleep and wake promoting systems, which are spread all over in the brain. Sleep begins with activation of the preoptic area of the anterior hypothalamus. Sleep promoting neurons project to wake-promoting centers and inhibit them with γ -amino-butyric acid (GABA) as neurotransmitter. The inhibition of wake-promoting neurons works on other sleep-promoting neurons and activates them, which results in intensifying the sleep process.

Fig. 1. S – suprachiasmatic nucleus in hypothalamus, G – lateral geniculate nucleus in thalamus, LDT – laterodorsal tegmental nucleus, PPT – pedunculopontine tegmental nucleus, LDT, PPT in brain stem



EEG recordings show typical features of sleep. Now, it is known that sleep is divided into two different phases.

- **D-sleep (desynchronized or dreaming sleep), or REM-sleep** (rapid eye movement sleep), or active sleep, or paradoxical sleep.
- **S-sleep (synchronized sleep), or NREM-sleep**, is further divided into 4 stages (see the figure down).

Stage 1

It is characterized by low voltage, mixed frequency EEG with the highest amplitude in 2-7 Hz range (see the Figure). The vertex sharp waves may occur; their amplitude can reach the value of about 200 μ V. In Stage 1 after wakefulness slow eye movements can be present. The EMG level is lower than in the wakefulness. Stage 1 is also scored when the epoch is characterized with alpha activity combined with mixed frequency EEG and the amount of alpha activity is less than 50% of an epoch.

Stage 2

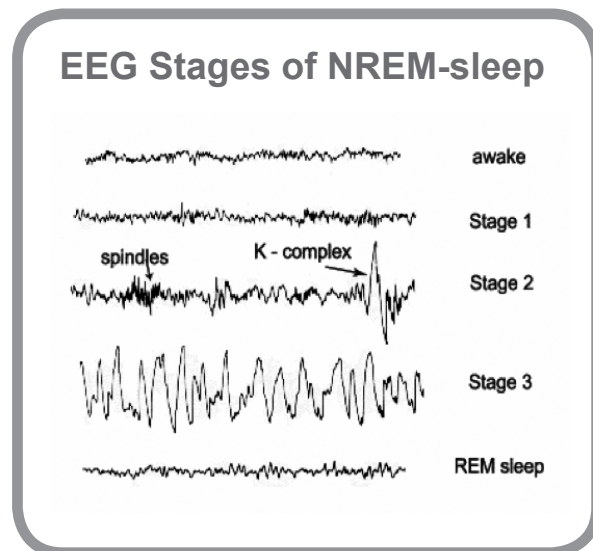
It is characterized by wave patterns sleep spindles and K complexes and the absence of slow waves. K complex is a sharp negative wave followed by a slower positive one. Sleep spindles occur in 12-14 Hz frequency range. The duration of these patterns should be 0.5 s at minimum. If the time between two succeeding occurrences of sleep spindles or K complexes is lower than 3 min, this interval is scored as Stage 2, unless there are movement arousals or increased tonic activity. If the time interval is 3 min or more, it is scored as Stage 1.

Stage 3

20%-50% of the epoch of EEG record should contain waves with 2 Hz or slower and with the amplitudes above 75 μ V if the epoch is scored as Stage 3, see Fig. 3. Sleep spindles and K complexes may occur during Stage 3.

Stage 4

Stage 4 has the same attributes as Stage 3, but waves with 2 Hz and slower with the amplitudes greater than 75 μ V 50 appear more than 50% of the epoch.



Stage REM

Stage REM shows low voltage and mixed frequency (similarly to Stage 1) of EEG, saw tooth; - wave pattern is often present. EMG reaches the lowest level and episodic rapid eye movements occur (REM s).

Wave pattern of different sleep Stages

In some of the existed cases no movement arousals are present, EEG exhibits a relatively low voltage and mixed frequency, and sleep spindles (K complexes) characteristic for Stage 2 alternate with typical features of Stage REM (REM s, the lowest EMG level).

These stages occur regularly throughout the the whole duration of sleep. The 1st REM period occurs after 90 minutes of onset of sleep, although it can start as early as 7 minutes after going off to sleep, e.g. in narcolepsy, in major depression, and after sleep deprivation.

The main theories of sleep

Theory	Description
1. Conservation of energy:	The main arguments for the purpose of sleep as reservation of energy are that during the sleep deprivation the energy consumption is increased and vice versa during sleep the basal metabolism is decreased about 5-25%.
2. Restoration of tissues and growth:	During the first hours of sleep growth hormone excretion, cell mitosis and protein synthesis are increased. In the time of growth or after more laboured day the amount of NREM sleep is increased during the night. J. Horne criticized this theory. According to him cell mitosis occurs a few hours after food intake and has a circadian rhythm, the decreasing metabolic rate is in discrepancy with the protein synthesis that needs higher energy cost and the increased temperature of head after physical activity is the cause of increased rate of SWS.
3. Thermoregulation	In experiments with rats, long-term sleep deprived rats showed the temperature increased in about 10 degree, so sleep probably decreases the temperature.
4. Regulation of emotions	In humans the sleep deprivation causes the disturbances of emotional behavior (concentration, interest for distinct goal, etc.), particularly SWS deprivation induces depressive or hypochondriacal states. So NREM sleep is likely to be involved in adjusting and regulating these emotions. This theory is supported by clinical observations that depressed patients show lower duration of NREM sleep as well as that metabolic rates and neuronal discharge are higher in brain regions that take control of emotions (limbic structures) during NREM sleep in contrast with waking state.
5. Neural maturation	One part of theories about sleep functions is concerned with REM sleep. The percentage of REM sleep of total sleep time decreases with age - in about 6 month of prenatal phase the children spend about 80% of sleep in REM sleep, but young adult people only 25%. So it is assumed that during REM sleep the maturation of brain and myelinization of nerve fibers proceed.
6. Memory and learning	Both types of sleep NREM and REM play a key role in memory consolidation and learning. There is an information transfer between cortex and hippocampus during the sleep that realizes the fixation of memory traces or during REM-sleep the insignificant bindings are abolished. With this reprocessing of information also the learning process is related. Several papers refer the improvement of performance perceptual or motor task after sleep. The improvement is due to sleep and not due to time interval or circadian factors.
The search activity concept	It deals with the function of Rapid Eye Movement sleep. Search activity is defined as "activity that is oriented to changing the situation (or at least the subject's attitude to it) in the absence of the precise prediction of the outcome of such activity but taking into consideration the results at each stage of the activity"(V. Rotenberg, 2013).
The biochemical mechanisms of search activity	They have been insufficiently studied but it is <i>possible to suggest that the brain's monoamine system is closely connected with search behavior</i> . Learned helplessness accompanied by somatic disturbances emerges when the brain monoamine level drops. An artificial reduction of brain catecholamine levels by tetrabenazine speeds passive behavior whereas the prevention of its depletion by monoamine oxidase (MAO) inhibitors raises stress resistance, restoring the animal's ability for an active reaction to stress (V. Rotenberg, 2013).

Depending on the duration of total sleep, could be described two normal sleeping patterns:

- **Long-sleepers** – these persons habitually sleep more than 9 hours (night, and this pattern of sleep does not cause any symptoms or dysfunction.
- **Short-sleepers** – these persons regularly sleep less than 6 hours (night, and this pattern of sleep does not cause any symptoms or dysfunction.

Sleep and waking centers

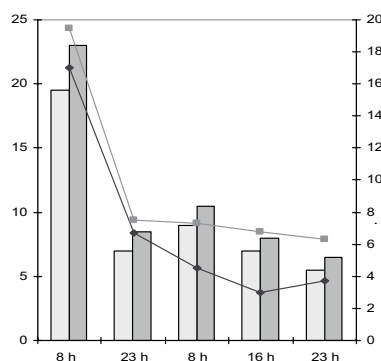
The descending pathways to alpha-motor neuron cause the skeletal muscle atonia. Typical neuronal activity before the rapid eyes movements – PGO waves – rises from the pons and spreads through LGN (lateral geniculate nucleus) in thalamus to the occipital lobe.

The waking and arousal promoting centers are located in the posterior hypothalamus, basal forebrain, mesopontine tegmentum and contain cholinergic, noradrenergic, serotonergic and histaminergic neurotransmitters. The arousal starts in reticular activating system (RAS), which receives collateral inputs from visceral, motor and sensory systems. RAS projects to the forebrain and cortex via thalamic and extra-thalamic neural pathways.

We established that cortisol levels in plasma of depressed patients were higher in patients with disturbed sleep and do not depend on age and sex. In two examined groups (with good and disturbed sleep) males have higher levels of cortisol in plasma. Patients under the age of 40 had lower plasma cortisol levels than patients over 40. The mesors of temperature and pulse were lower in the group with disturbed sleep but not significantly. The percentage distribution of suppressors and non-suppressors show no differences by sex, age and sleep disturbances.

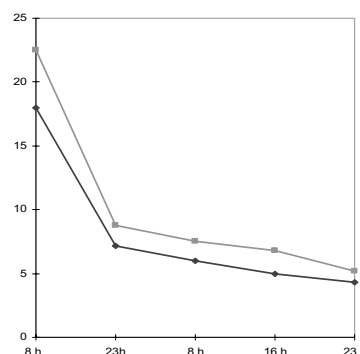
Sleep and Cortisol Plasma levels of depressive patients

Lines – the upper lines are for females with good sleep
Column – the upper column of males are with good sleep



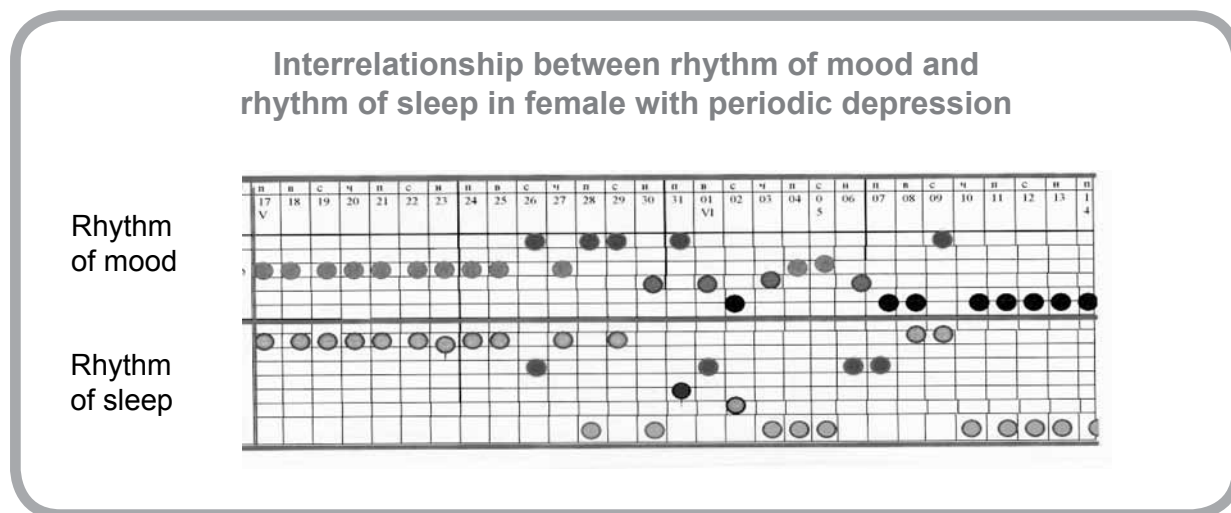
Cortisol plasma level of males with Disturbed (bright color), and good (dark color) and females with disturbed sleep (upper line) and with good sleep (lower line).

Disturbed sleep – higher line
Good sleep – lower line



Cortisol Plasma level of 176 depressed patients

In 1987 was done a longitudinal study between sleep disturbances and the stability of the circadian rhythm of mood in order to establish the presence or lack of link between the rhythm of mood and the rhythm of sleep. It was found that disturbance of sleep changed the circadian rhythm of both healthy individuals (172 persons) and patients with AD (138), and ND (114). The periods of stable rhythm of mood and one type of disturbed sleep (endogenous depressions) are characterized by stability of pulse and temperature while their periods of unstable rhythm of mood and sleep are accompanied by frequent fluctuations of these indices. These data are results of change that has occurred in the circadian rhythm although indirectly support of hypothesis that curative effect follows sleep deprivation.



V. Sriviansan et al. (2009) and other authors profound that disturbances in sleep architecture occur in major depressive disorders and in BAD. Reduction of slow wave sleep decreased latency of rapid eye movement sleep and abnormalities in the timing of REM/non-REM sleep cycles have all been documented in patients with major depressive disorders. It's evident that an understanding of basic mechanisms of sleep regulation is essential for an analysis of some pathophysiological mechanisms of depressive disorders. Many publications stress on the connection between the depression/schizophrenia and sleep disturbances and thing about correlation between sleep and some hormonal disturbances.

Sleep deprivation

It was established that patients with endogenous depression even after one day of sleep deprivation on the next day about 60 to 80% of the depressive symptoms were reduced (R. Tolle, B. Fplug, 1973). They are the first authors that used the method of sleep deprivation. They established that this must be repeated many times in order to stabilize this positive effect. After a few days of sleep deprivation, the EEG recording shows some changes – increase in lower frequency activity. The curative effect is explained with the change of the circadian rhythm after the sleep deprivation.

In the clinical practice can be used:

- **Total sleep deprivation** – the patient must not sleep during the whole night;
- **Partial sleep deprivation** – when the patient is not sleeping the whole night. It could be divided into two methods:
 - the patient is not sleeping till midnight, or 1 o'clock in midnight. This method is advisable for patients with expressed morning type rhythm of mood and vigor,
 - the deprivation is after 1-2 o'clock in midnight. It is advisable for patients with evening type rhythm.

Sleep disorders:

I. Dyssomnias – these sleep disorders are characterized by disturbances in the amount, quality or timing of sleep.

- *Insomnia* – it is very common with nearly 15-30% of general population complaining of period of insomnia per year requiring treatment. It is characterized with difficulty in initiating sleep (going on asleep), difficulty in maintaining sleep (remaining asleep); non-restorative sleep, i.e. despite adequate rested present (poor quality sleep).

- *Hypersomnia* – it is known as disorder of excessive somnolence. It is spread about 1-2% of the polar populations.

- *Disorders of sleep-wake shedule*

II. Parasomnias – dysfunctions or episodic nocturnal events occurring with sleep, sleep stages or partial arousals. Most parasomnias are common in childhood though they may persist into adulthood.

- Stage 4 disorders

- Sleep-walking (somnambulism) – see Lecture No 9, “Conscious and unconscious”, slides 32, 33 and Lecture No 10, “Sleep”, slides 34, 35.

- Pavor nocturnes (the patient suddenly gets up screaming, with autonomic arousal (tachycardia, seating, crying, hyperventilation).

- Nightmares – see Lecture No 10, “Sleep”, slides 36, 37.

- Bed-wetting (enuresis nocturna) – see in child psychiatry;

- Tooth-grinding – an involuntary forceful grinding of teeth during sleep;

- Sleep-talking – the patient talks during 3-4th stage of sleep, and does not remember anything in the morning;

- Kleine-Levine Syndrome, Syndrome of Sleeping Beauty – hypersomnia, hyperphagia, hypersexuality: see Lecture No 10, “Sleep”, slide 38.

- Other disorders – nocturnal seizures, nocturnal paralyses, nocturnal asthma and s.o.

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V. DREAMS

- ***Can we think that our dreams are hallucinations?***
- ***Can we think that we travel in another dimension?***
- ***Can we think that our dreams are predictable?***

Some myths for dreams

- The myth and legends of ancient Greece and Rome
- Many ancient people as Greeks and Romans believe that dreams give them information about the past, the present and the future. Dreams are manifestly not records or transformations of these events, dreams are interpretation of the events.
- In ancient Greece, the major influence in dream interpretation came from Egyptians.
- The Egyptians thought of dreams as *a massage from God* that might carry warnings, advice or protect.
- They know how to differentiate “good” and “bad” dreams.

Romans

- Empero Augustas Caesar ruled that anyone who had a dream about the state was, by law, to proclaim it in the marketplace.
- Needless to say, the Romans took dreams very seriously.
- Like the Greeks, the Romans believed that dreams were derived directly from the God and could reveal the wish of the God.
- It was also advised that the dreamer follow any advise which he understood from a dream.

History

- Dream interpretation date back to 5000-4000 BC.
- Opinions about the meaning of dreams have varied through time and culture.
- The earliest recorded dreams were taken from materials dating back approximately 5,000 years ago in Mesopotamia, where they were documented on clay tables.
- ***In Greek and Roman periods, the people believed that dreams were directly messages from God, or from the dead, and they predict the future.***
- Some cultures practiced dream incubation with the intention of cultivating dreams that are prophetic or predictable.

“GOOD” and “BAD” dreams

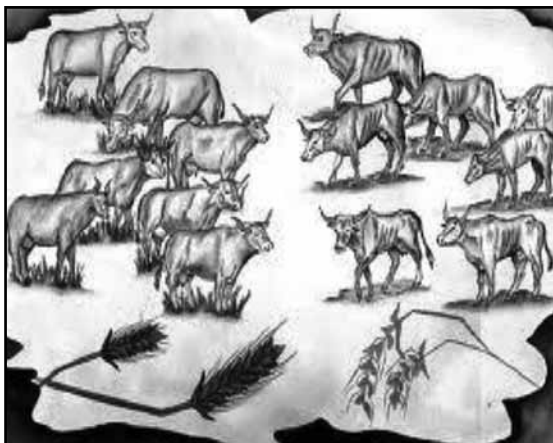
- In Mesopotamia, Babylonians divided ordinary dreams into: “GOOD” ones sent by the GODS, and “BAD” dreams sent by the DEMONS. Priests to the goddess of dreams, People tried to please their goddess so as to prevent bad dreams from occurring.
- One of the earliest recorded dream was written on a clay tablet in Nineveh. It dated back to the reigion of King Ashurbanipal (669-626 BC). The tablet states that if a man flies repeatedly in his dreams, than all that he owns will be lost.
- The Assyrians’ believed that bad dreams required action to correct the problem (whatever that may be). It was also advised that the dreamer followed any advice which he understood from a dream.

Gilgamesh's dream

1st dream – from the river Nile were coming up 7 cows, that were very handsome, healthy and fatted, flesh, and they pastured in the marshland. And behold 7 other cows were coming up after them from the Nile, of ugly appearance and lean of flash, and they stood besides the cows which were on the Nile bank. And the cows of ugly appearance, look sticky and ill and lean of flash devoured/eat the 7th cows that were handsome appearance and healthy.

2nd dream – 7 ears of gain/corn were growing on one stalk, healthy and good. And behold seven ears of grain, thin and beaten by the east wind, were growing up after them. And the thin ears of grain swallowed up the 7 healthy and full ears of grain.

Illustration of the
Gilgamesh dream



Gilgamesh asked Josif
about his dream



Josif did the next interpretation of the dream:

“First You will have 7 successful years and your people will have sufficiently food to eat. After that will become dry land and 7 poor years. So you must keep a part of the food from the first successful years for the next 7 poor years.”

Guilgamesh having in mind his wise advice saved his people from starvation.

Even when dreams are interpreted, some of them will be false, others will be predictable: the idea is how to distinguish the true dreams from false dreams.

DREAMS CAN BE CAUSED BY EXTERNAL FACTORS

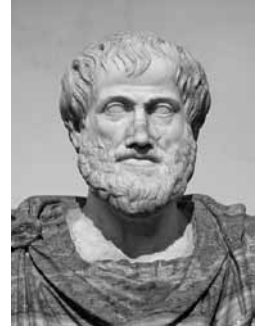
Plato: “The dreams were the way by which the God conveyed their Intention to mankind and at the same time he allows that natural causes as disturbances in the body’s internal motions, can give rise to dreams.”



The dreams give us Information about our somatic and physical state.

THE MOST IMPORTANT TASK WAS TO RECOGNIZE WHICH DREAMS WERE BOTH GOD-SENT AND TRUE

Aristotle’s and Epicurean: “Dreams have no divine nature, nor any prophetic force but originate from the Impact. Dreams could be caused by the external factors like a God, a ghost, or a Demon or by an internal Factors like the dreamer’s own soul”.



Aristotle

Penelope suggests that dreams can be distinguished according to the part by which they reach us; true dreams pass into our consciousness through a gate of polish horn, while deceptive dreams enter our world through a gate of ivory. The ability to distinguish true dreams from false dreams depends on the mechanisms of dreams.

Medical writers have an interest in distinction between divine and natural dreams. They were interested in the dreams that were both natural and true, from a physician could have an information about bodily states and the processes that were hidden from direct observation.

The first data about dream were found out in the medical book of the dreams is the 4th Greek book of the **Hippocratic treatise** about “Regimen” from the end of 5th or Beginning of the 4th century. The author of this tractate took the territory left by the diviners suspiciously.



Most medical writers and schools, with the prominent exception of Galen, did not pay any attention on the etiology or mechanism of dreams. Instead they use dreams as a diagnostic and prognostic tool without committing themselves to any explanation of how or why dreams reflected physiological reality. It was enough to expect that a patient’s dreams can be a part of information that the physician brought to bear in his attempt to construct an account of the patient’s condition, and an appropriate therapy for it.

When the patient is sleeping in a temple the God extracted/take the spearhead and gave it into his hands. When the day came Euhippius putted the instructions in his hands.

In the new cases the patient is cured after sleeping in the shrine (temple, church), but no mention is made of a dream or vision.

GALEN

According to Galen the dreams can be indicator for diagnosis or therapy. Empiricist physician that based their practice on experience also stress on the idea that the dreams could be successful. No indications seem to have survived of the dogmatists' attitude towards medical dreams, but there is no reason to believe that they denied/refuse their usefulness. For the ordinary patients, messages from a healing god were one among many available sources of medical knowledge. "Diagnosis from Dreams"

ASCLEPIUS

Not all the cures involve sleep. For example voiceless boy is cured immediately after preliminary sacrifices to Asclepius
In another – a growth on a boy's neck is treated when a temple dogs licks it with the tongue.
 These exceptions, however, and the majority of cures recorded come after the heavy ill person have slept (sleep) in a special temple for this purpose and he strongly believed, that it will help him. This practice is called "incubation".

Dreams – some curious facts

- *Dreams can last for seconds, or as long as 20 minutes.*
- *People are more likely to remember dreams if they are awakened during the REM phase.*
- *The average persons have about 3 to 5 dreams per night, but some may have up to 7 dreams in one night.*
- *The dreams tend to last longer as the night progresses.*
- *During the full 8-hour night sleep, 2 hours of it is spent dreaming.*

A. Mori's experiments of dreams by various stimulus (middle of the 19th century)

- Feather** – irritate his lips and nose – s. o. puts clammy mud on his face.
- Rattle with scissors /clipper** – dreams a bell ring for a dead person and it is July of 1848.
- Put a eau-de cologne/perfume under his nose** – he dreams that he is in Cairo in a magazine of Jan Mai Farini and connect it with some joyful stories that could not be retailed to everybody.
- He puts an hot iron near by his face** – he dreamed that robbers are at his house and give him instruction to move by feet on the hot coals.

EXPLANATION

If s. o. told you that they could jump up in the air and fly high in the sky you would probably think they were telling you a lie or they were simply crazy. If they explained to you that the obtained some sort of propulsion device that they strapped to their back, you would be more likely to believe them, but you may have some doubts. Lucid dreaming also requires an explanations.

EXPERIENCE

If the unbeliever actually had a lucid dream, the figurative light bulb in their head would glow brightly and chanced are they would believe in lucid dreaming. Experience is the key. Those of us that have the wonderful experience of lucid dreaming know without a doubt that lucid dreaming is un-equiyoally real.

15 interesting facts about dreams

1. You forget 90% of your dreams.
2. Within 5 minutes of waking half of your dream is forgotten. Within 10 minutes 90% is gone.
3. Blind people also dream. People who are blind after birth can see images in their dreams. People who are born blind never see any images, but they have dreams with their other senses of sound, smell, touch, emotions.
4. Everybody dreams. If you think that you are not dreaming – you just forget your dreams.
5. In our dreams we see only faces that we already know. Our mind is not inventing faces – in our dreams the dreamers see real faces of real people that we have seen during our life but may not know or remember. Persons have all seen hundreds of thousands of faces throughout our lives, so we have an endless supply of characters for our brain to utilize during our dreams.
6. Not everybody dreams in color. A full 12% of people dream in black and white, the remaining number dream in full color. Studies from 1915 reported that majority of persons dream in black and white. But these results were change after 1960. Today only 4.4% of the dreams of under 25 years olds are in black and white. These data could be linked to the switch from black and white films and TV to color media.
7. Dreams are symbolic If you dream about some particular subject it is not often that the dream is about that. Dreams speak in a language. Whatever symbol your dream picks on it is most unlikely to be a symbol for itself.
8. Emotions – the most common experienced in dreams is anxiety. Negative emotions are more common than positive ones.
9. You can have four to seven dreams in one night. On average you can dream anywhere from one or two hours every night.
10. Animals dream too. Studies have been done on many different animals. Watch a dog sleeping sometime. The paws move like they are running and they make yipping sounds as if they are chasing something in a dream.
11. Body Paralysis: REM – sleep is a normal stage of sleep characterized by REM of the eyes. REM sleep in adult humans typically occupies 20-25% of total sleep, about 90-120 minutes of a night's sleep. During REM sleep the body is paralyzed by a mechanism in the brain in order to prevent the movements which occur in the dream from causing, the physical body to move. It is possible for this mechanism to be triggered before, during, or after normal sleep, while the brain awakens.
12. Dreams Incorporation: Our mind interprets the external stimuli that our senses are bombarded (or attack) with when we are asleep and make them a part of our dreams. It means that some times in our dreams we hear a sound from reality and incorporate it in a way. For example you may be dreaming that you are in concert while your bother is playing a violin during your sleep.
13. Male and females dream differently. Males tend to dream more about other men. Around 70% of the characters in male's dream are other males. In females' dreams the number of males and females is almost equal. Aggressive emotions dominate in male's dreams.
14. Precognitive Dreams. It was established that between 18 and 38% of people have experienced at least 1 precognitive dream and 70% have experienced déjà vu. The percentage of persons that believed precognitive dreaming is higher – from 63 to 98%. * *Precognition also called future refers, to perception that involves the acquisition of future information that cannot be deduced from presently available and normally acquired sense-based information.*
15. If You are snoring, than you cannot be dreaming
This fact is repeated all over the Internet, but I am suspicious whether it's really true as I have not found any scientific evidence to support it.

DREEMS EEG.htm

**If You would like to learn more,
You could find it in internet.**

FARAONDREEM .htm

***When Ego's defenses are lowered so that some of the represented material comes through to awareness, albe it in distored form.
Sigmund Freud, 1900***

Dreams perform important functions for the unconscious mind and serve as valuable clues to how the unconscious mind operates.

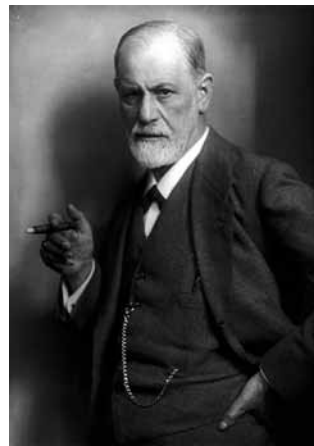
Dreams have been seen as a connection to the unconscious. They range from normal and ordinary to overly surreal and bizarre.

DREAMS AND PSYCHOANALYSIS

Sigmund Freud (Austrian neurologist), who puts the roots of psychoanalysis wrote about dreams theories and interpretations.

He explained dreams as manifestations of our deepest desires and anxieties, often relating to repressed childhood memories or obsessions.

"The dreams are the goden road to our unconscious."



One of Freud's own dream was remarcable and it was the purpose to pay attention on it and to build his own hypothesis abort the dreams.

It was 24th of July. He had been astonished about one of his patient, named Irma. Even his therapy, she did not recovered. He was feeling guilty.

Freud dreamed that he met Irma at a party and examined her. He then saw a chemical formula for a drug that another doctor had given Irma flash before his eyes and realized that her condition was caused by a dirty syringe used by the other doctor. Freud's guilt was thus relieved.

Freud interpreted this dream as **wish-fulfillment**. He had wished that Irma's poor condition was not his fault and the dream had fulfilled this wish by informing him that another doctor was at fault. Based on this dream, Freud (1900) went on to propose that a major function of dreams was the fulfillment of wishes.

Freud distinguished between the **manifest content of a dream** (what the dreamer remembers) and the **latent content**, the symbolic meaning of the dream (i.e. the underlying wish). The manifest content is often based on the events of the day.

The process whereby the underlying wish is translated into the manifest content is called **dream-work**. The purpose of dream work is to transform the forbidden wish into a non-threatening form, thus reducing anxiety and allowing us to continuing sleeping. ***Dream work involves the process of condensation, displacement, and secondary elaboration.***

Condensation this process is the joining of two or more ideas/images into one. For example, a dream about a man may be a dream about both one's father and one's lover. A dream about a house might be the condensation of worries about security as well as worries about one's appearance to the rest of the world.

Displacement takes place when we transform the person or object we are really concerned about to someone else. For example, one of Freud's patients was extremely resentful of his sister-in-law and used to refer to her as a dog, dreamed of strangling a small white dog. Freud interpreted this as representing his wish to kill his sister-in-law. If the patient would have really dreamed of killing his sister-in-law, he would have felt guilty. The unconscious mind transformed her into a dog to protect him.

Secondary elaboration occurs when the unconscious mind strings together wish-fulfilling images in a logical order of events, further obscuring the latent content. According to Freud this is why the manifest content of dreams can be in the form of believable events.

Universal symbols – In Freud's later work on dreams he explored the possibility of universal symbols in dreams. Some of these were sexual in nature, including poles, guns and swords representing the penis and horse riding and dancing representing sexual intercourse. According to Freud symbols are personal, but not universal. One can not interpret what the manifest content of a dream symbolized if he does not know about the person's circumstances.

Dream dictionaries

Still popular dream' dictionaries are something for the sake of change. They can not help us to make an interpretation of the dream, as they can not give us any serious information.

One Freudian patient that was dreaming that was holding a fish, said to him "that is a Freud's symbols for penis".

In an amusing example of the limitations of universal symbols, one of Freud's patients, after dreaming about holding a wriggling fish, said to him "that's a Freudian symbol – it must be a penis!" but after serious examination Freud thought that the woman's mother that was a passionate astrologer and a Pisces, was on the patients's mind because she disapproved of her daughter being analysis. According to Freud the fish was represented the patient's mother, but not the penis.

- Dreams can have varying natures, such as frightening, exciting, magical, melancholic, adventurous, or sexual.
- The events in dreams are generally outside the control of the dreamer, with the exception of lucid dreaming, where the dreamer is self-aware.
- Dreams can at time make a creative thought occur to the person or give a sense of inspiration.
- In the Interpretation of Dreams, Freud developed a psychological technique to interpret dreams and device a series of guide-lines to understand the symbols and motifs that could appear in our dreams.
- Freud goes on within these points of view (internalization/rationalization: dreams as knowing the self) and radicalizes them. So dreams become definitely an individual psychical product, having a meaning that has to be discovered.
- In contemporary world, all the different theorizations about dreams covered a common ground: dreams are individual psychic products, that elaborate and integrate experiences, in order to build and narrate or describe the self, as it happens during awakening.

- From dichotomies sleep/awakeness, unconscious/conscious to thought continuity
- From theory of impulses to narration of the self
- From dichotomy manifest/latent content to the representation of the unconscious
- Conceiving and experiencing dreams are cultural constructions, as it is showed by the turning over of the conceivings about dreams;
- The individual dream experience can be an indicator of environmental fitness. Diversions from cultural average are average-specific.

ABSURD DREAMS

The story of the 1st dream	Is this dream predictable? What kind of explanation you can give?
<p><i>A father looked after his ill daughter suffering from fever. She died. She is lying on the bed and many candles were on fire. An old prayer reads prayers. The father is lying in bed in the next room and the wide door is opened, so he could watch his dead child. He grow sleepy. He had a terrible dream. His daughter was coming to him and cried: "Father, don't You see that I am on fire?" He waked. He saw that she was on fire and the old prayer fall asleep.</i></p>	<ol style="list-style-type: none"> 1. The father waked from the light of the fire. 2. It is possible the father before fall asleep to think that the old prayer will not be correct. 3. The words of the daughter "Father, don't you see that I am on fire" were repeated often from his child before her death. She suffered from fever and had a high temperature. 4. Everybody likes to see in his dreams his lovely persons (mother, father, children, brothers, sisters). Such he realize his wish – to see these persons in his dreams.

The story of the 2nd dream	The dream' Interpretation
<p><i>It is 6 o'clock in the morning. She is 22 years and she is a student. She listens the ring and went to the door. A man, who look-liked her cousin from Plovdiv, was lame in the right leg, with a crazy laugh gave her a telegram". Just at that moment she was woken by an electric bell and she opened the door. The postman stayed in front of the door and gave her a telegram. It was by her cousin: "My mother died. Tomorrow will be her burial."</i></p>	<ul style="list-style-type: none"> • Now what do you think about this dreem? • Is this dreem predictable? • What can you say about this dream? • PS – No. It is not a predictable dream? Our thoughts are material and it is possible postman's thoughts to be taken up in our conscious in the moment when he ring the bell.

Some scientists declared that in our dreams we see the things that we had thought when we are awaken.

A special interest is the dream of Delboeuf in 1862, described by Freud. Delboeuf dreamed his house, covered with a snow. Near by the house he saw 2 lizards, lying on a frond of fern, and in his dream he knew it latin name – *Asplenium ruta moralis*. After that he looked at the street door saw a procession of lizards. He had no knowledge in biology, but when he opened the dictionary, he was astonished that the name of the fern was almost the same – *Asplenium ruta muraria*. In 1856 he visited his friend, who had a big herbarium and he recognized his handwritten. He remembered that his sister pleased him to write the names of the flowers under her dictation. In 1864 he noticed that the cover of a journal in 1861 was "The procession of the lizards". After this everything from this dream became clear for him. This dream was a combination of some events from the past. (S. Freud, "The interpreted of Dreams").

Physiology of dream

Since 1953 with the discovery of REM a new era of dream appeared. In Chicago's Sleep Laboratory was established that the appearance of REM under their closed lids is accompanied by EEG changes in the brain waves. When s.o. is awakened during REM-phase, he could reported vivid dreams. Most of the researchers mentioned that REM are connected with dreaming.

For the first time, direct and systematic investigation could be made of such topics as the occurrence, qualities, recollection, and childhood development of dreaming. Experimental methodologies permitted investigation of the responsiveness of dreams to external stimulation and the effects of deprivation of REM sleep (Eisen, 2005).

Animals can dream too. D-state (desynchronized) sleep is reported among some experimental animals as dogs, cats, monkeys, rats, elephants and even in some birds and reptiles. By the method of surgical damage of some brain structures in laboratory animals shows that the changes of **D-state depends on the tegmentum**. Later studies showed that **D-state was associated with Norepinephrine**, and they were supported with changes in some physiological parameters as – blood pressure, heart-rate, activity in respiratory system and sexual organs. **Other stages of sleep were connected with Serotonin.**

When s. b. is chronically deprived of the opportunity to manifest D-state activity (by awakening them whenever there is EEG evidence of dreaming), it appears increasingly difficult to prevent them from dreaming. After such deprivation if the subjects could sleep without interruption, was increased the number of reports of dreaming.

In the part for "Sleep" we mentioned that our dreams appear in Stage REM:

- Stage REM shows low voltage and mixed frequency (similarly to Stage 1) of EEG;
- Wave pattern is often present. EMG reaches the lowest level and episodic rapid eye movements occur (REM s).

Psychophysiology and Dreams

• Scientific Proof

Keith Hearne in the 1970 in England made an experiment in a sleep laboratory. He would have a lucid dreamer signal by moving his eyes from left to right many times since we have REM while asleep. Hearne determined that a REM polygraph would capture the eye movements. In 1975 his lucid dreaming associate became lucid in the sleep laboratory and moved his eyes left to right the predetermined number of times to signal that he was consciously aware while asleep. Hearne observed the REM polygraph thus scientifically proving that lucid dreaming is reality.

- In 1981 LaBerge performed a very comparable experiment by signaling his conscious awareness from the dream state through eye movements during a lucid dream.

• Proof is Positive

Mostly people do not realize that they are dreaming when they actually are in full dream state. They accept every far-fetched and impossible thing they are doing or experiencing in their dream to be real. The lucid dream experience includes some very incredible and unique properties. When you reach lucidity in a dream, you simply know that you are asleep and are aware. This is often triggered by observing the far-fetched and impossible things happening in a dream and realizing that these things could only occur in a dream. Thus the dreamer becomes lucid.

LaBerge, Lucid Dreaming Physiologically Verified

“Lucid” dreamers (the term derives from van Eeden, 1913) report being able to freely remember the circumstances of waking life, to think clearly, and to act deliberately upon reflection, all while experiencing a dream world that seems vividly real (LaBerge, 1985; and others). This is all in contrast to the usual past characterization of dreams as typically lacking any reflective awareness or true volition. Lucid dreaming is normally a rare experience. About Most of the people reported that they had lucid dreams once in their live, and 20% of the population had lucid dreams once a month. Some authors thought that lucid dreams were common during REM-sleep and proposed this “micro-awakenings” as the physiological basis for lucid dream reports. The conclusion of McGowan (1978) was that “Lucid Dreams begin in REM”. But it is not proved by other scientists till now.

This hypothesis was discussed. However, demonstration that lucid dreams were during REM sleep raised another question. What exactly do we mean by the assertion that lucid dreams are “asleep”. Perhaps these “dreamers” are not really dreamers, as some argued in the last century; or perhaps this “sleep” is not really sleep, as some have argued.

Lucid dreamers are conscious of the absence of sensory input from the external world; therefore, on empirical grounds, they conclude that they are asleep. If, in a contrary case, subjects were to claim to have been awake while showing physiological signs of sleep, or vice versa, we might have cause to doubt their subjective reports.

Physiological Characteristics of Lucid Dreaming

In order to study the temporal variations of physiology as they correlated with the development and initiation of lucidity, the physiological variables were converted to standard scores and averaged across dreams and subjects.

On the next figure is shown a histogram of the resultant mean standard scores for the five minutes before and the five minutes after the initiation of lucidity. It was established the highly significant increases in physiological activation during the 30 s before and after lucidity onset. Physiological data (EM, RR, HR, and SP) were also collected for sixty-one control non-lucid REM periods, derived from the same 13 subjects, in order to allow comparison with SVLDs. Mean values for EM and SP were significantly higher for REM periods with lucid dreams than non-lucid control REM periods (RR and HR did not differ).

Given the finding that lucid dreams reliably occur during activated (phasic) REM, measures of central nervous system activation, such as eye movement density, should contribute something to the pattern of lucid dream distribution.

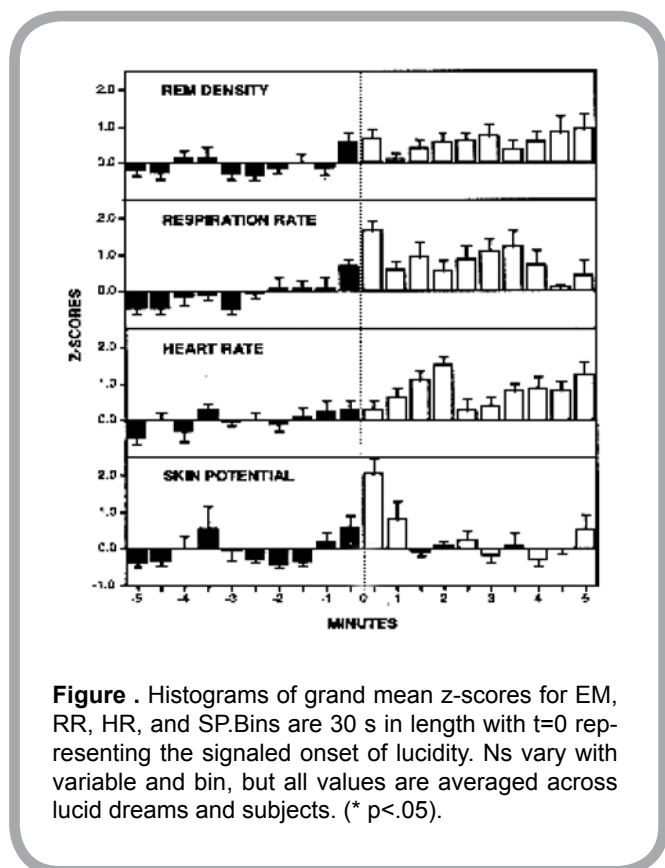


Figure 1. Histograms of grand mean z-scores for EM, RR, HR, and SP. Bins are 30 s in length with t=0 representing the signaled onset of lucidity. Ns vary with variable and bin, but all values are averaged across lucid dreams and subjects. (* p < .05).

Here is an example of a wake-initiated lucid dream:

DREAM – I was lying awake in bed late in the morning listening to the sound of running water in the adjoining bathroom. Presently an image of the ocean appearance, dim at first like my usual waking imagery. But its vividness rapidly increased while, at the same time, the sound of running water diminished; the intensity of the internal image and external sound seemed to alter inversely (as if one changed a stereo balance control from one channel to the other). In a few seconds, I found myself at the seashore standing between my mother and a girl who seemed somehow familiar. I could no longer hear the sound of the bath water, but only the roar of the dream sea.... (LaBerge, 1980, p. 85)

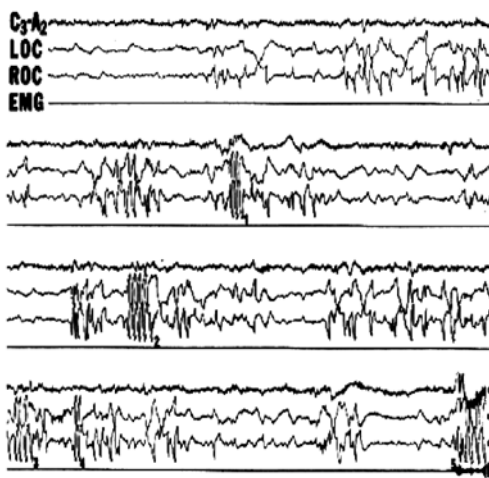


Figure 1. A typical dream-initiated lucid dream (DILD). Four channels of physiological data (central EEG [C3-A2], left and right eye-movements [LOC and ROC], and chin muscle tone [EMG]) from the last 8 min of a 30 min REM period are shown. Upon awakening the subject reported having made five eye movement signals (labeled 1-5 in figure). The first signal (1, LRLR) marked the onset of lucidity. Skin potential artifacts can be observed in the EEG at this point. During the following 90 s the subject “flew about” exploring his dream world until he believed he had awakened, at which point he made the signal for awakening (2, LRLRLRLR). After another 90 s, the subject realized he was still dreaming and signaled (3) with three pairs of eye movements. Realizing that this was too many, he correctly signaled with two pairs (4). Finally, upon awakening 100 s later he signaled appropriately (5, LRLRLRLR). [Calibrations are 50 microV and 5 s.]

Note that the subject is continuously conscious during the transition from wakefulness to sleep. This fact suggests that Foulkes (1985) is over-stating the case by claiming that it is “...a necessary part of the experience we call ‘sleep’ that we lose a directive and reflective self. You can’t fall asleep, or be asleep, if your waking self is still regulating and reflecting upon your conscious mental state”.

Psychophysiological Relationships During REM Sleep

The question about the duration of the dream was discussed. The most authors support the idea that the dreams take very little time, or no time at all, or the dreams occur in the moment of the awakening. LaBerge’s experiment in 1986 by following EEG activity from electrodes placed over right and left temporal lobes estimated that the lucid dreams continued no more than 10 seconds.

According to Piaget (1927), children pass through three stages of understanding of the concept “dream.” In the first stage, they believe that dreams take place in the same external world as all other experiences. In the second stage, children treat dreams as if they were partially external and partially internal. This transitional stage gives way to the third stage in which children recognize the dream is entirely internal in nature, a purely mental experience.

Notable dreams

- **Mary Shelly's Frankenstein** was inspired by a dream.
- **Elias Howe** (the sewing machine) in 1845 – in his dream cannibals prepared to cook him and they were dancing around the fire waving their spears. He noticed at the head of each spear there was a small hole through the shaft and the up and down motion of the spears and the hole remained with him when he woke. The idea of passing the thread through the needle close the point, not at the other end was a major innovation in making mechanical sewing possible.
- **James Cameron** – the titular character in *The Terminator* was inspired by a dream. It was a vivid dream where a gleaming figure of doom emerged from fire; a metallic skeletal monster with a wide opened smile and burning red eyes, dragging itself across the floor with kitchen knives. "I was sick and dead broke in Rome, Italy, with a fever of 102, doing the final cut of *Piranha II*. That is why I thought of *Terminator*. I guess it was a fever dream.
- **Descartes' new science** – his dream in 10.11.1619, gave him the idea for a new philosophy.
- **Kekule** – discovered the seemingly impossible chemical structure of benzene (C₆H₆) when he had a dream of a group of snakes twisting their tails.
- **J. Watson & E. Crick** – discovered the structure of DNA because of a dream Watson had imagining a series of spiral staircases.
- **Mendeleev's table** for chemical elements.
- **Paul McCartney** – dreamed the melody of his song "Yesterday".
- Robert Louis Stevenson dreamed the plot for his novel.
- **Prophetic dreams:**
 - Several historical people have experienced dreams which they believed to be warning that they would be killed after they woke up (Caligula, Abraham Lincoln), they ignored their dreams and were indeed assassinated the next day, while others actually were more cautious as a result.
- **Giuseppe Tartini (Italian violinist and composer):** he composed one of his greatest works "The Devil's Trill", as a result of a dream he had in 1713. In the dream, he handed his violin to the devil himself, who began to "play with consummate skill a sonata of such exquisite beauty as surpassed the boldest flights of my imagination. I felt enraptured, transported, enchanted; my breath was taken away, and I awoke. Seizing my violin I tried to retain the sounds I had heard. But it was in vain. The piece I then composed ...was the best I ever wrote, but how far below the one I heard in my dream.
- **Mozart** – some times his music was influenced by his dreams.
- **Many famous writers and artists have used their own dreams and nightmares as sources of inspiration.** *Naomi Epel – in her book "Writers Dreaming" has interviewed writers about their dreams, and how they used dreams in their own creative process.*
 - *Samuel Taylor Coleridge* (English author) - Coleridge's famous poem;
 - *Kubla Khan*, was written upon awakening from an opium-affected dream.

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VI. STRESS

“Every stress leaves an indelible scar, and the organism pays for its survival after a stressful situation by becoming a little older”.

Dr. Hans Selye

Physiology and biology of stress

The term “stress” is a form of the Middle English *distresse*, derived via Old French from the Latin *stringere*, “to draw tight”. The word had long been in use in physics to refer to the internal distribution of a force exerted on a material body, resulting in strain.

Stress is a body’s method of reacting to a challenge. According to the stressful event, the body’s way to respond to stress is by sympathetic nervous system activation which results in the fight-or-flight response. The body cannot keep this state for long period of time. Afterwards the parasympathetic system returns the body’s physiological conditions to normal. In humans, stress could be caused mainly by negative conditions, but some diseases could be caused even by positive events. Physiological stress represents a wide range of physical responses that occur as a direct effect of a stressor causing an upset in the homeostasis of the body. Upon immediate disruption of either psychological or physical equilibrium the body responds by stimulating the nervous, endocrine, and immune systems. The reaction of these systems harms a number of physical changes that have both short and long term effects on the body.

Stress is connected with the name of Hans Selye. He is the author of General Adaptation Syndrome.

Dr. Hans Selye

Born: January 26, 1907, Vienna, Austria

Died: October 16, 1982

Education: M.D. – German University of Prague, Czechoslovakia, 1929; Ph.D. German University of Prague, 1931; D.Sc. – McGill University, 1942

Category: Builder in Medicine and Basic Research

Professor and Director of the Institute of Experimental Medicine and Surgery, University of Montreal (1945 – 1977).



He spent 50 years in Montreal studying the mechanisms, causes and effects of stress. Dr. Hans Selye gained world-wide recognition for introducing the concept of stress in a medical context. His theories on the role of organic responses to emotion, illness and injury have revolutionized our understanding of the causes and mechanisms of disease and of the mind-body connection.

- Selye developed the theory that stress is the major cause of diseases;
 - Chronic stress causes long term chemical changes.
 - He observed that the body would respond to any external biological source of stress with a predictable biological pattern in an attempt to restore the body's internal homeostasis.
 - Pressure, tensions and other stressors can greatly influence the normal metabolism.
- The total effect obviously is influenced by the meaning of the stress-stimulus of the person. Reactions to stress are manifested as disturbed psychological or physiological functions.

GENERAL ADAPTATION SYNDROME

The alarm reaction – adaptation is not yet achieved/reached. The hypothalamus alarms the pituitary gland to release the hormones that prepare the body to action.

The stage of resistance – the adaptation is achieved. The signs of alarm decreased/fade although the body remains hormonally primed to handle extraordinary challenges.

The stage of exhaustion – the achieved adaptation is lost again. The animals in this stage die.

Selye's General Adaptation Syndrome

Phase 1 Alarm	Phase 2 Stage of resistance	Phase 3 Stage of exhaustion
shock	Normal level of resistance to stress	

Homeostasis is a concept central to the idea of stress. In biology, most biochemical processes strive to maintain equilibrium (homeostasis), a steady state that exists more as an ideal and less as an achievable condition. A life-threatening situation such as a major physical trauma or prolonged starvation can greatly disrupt homeostasis.

Hormones and our endocrine system play a very important role for the living organisms.

Hormonal Regulation of Immunity

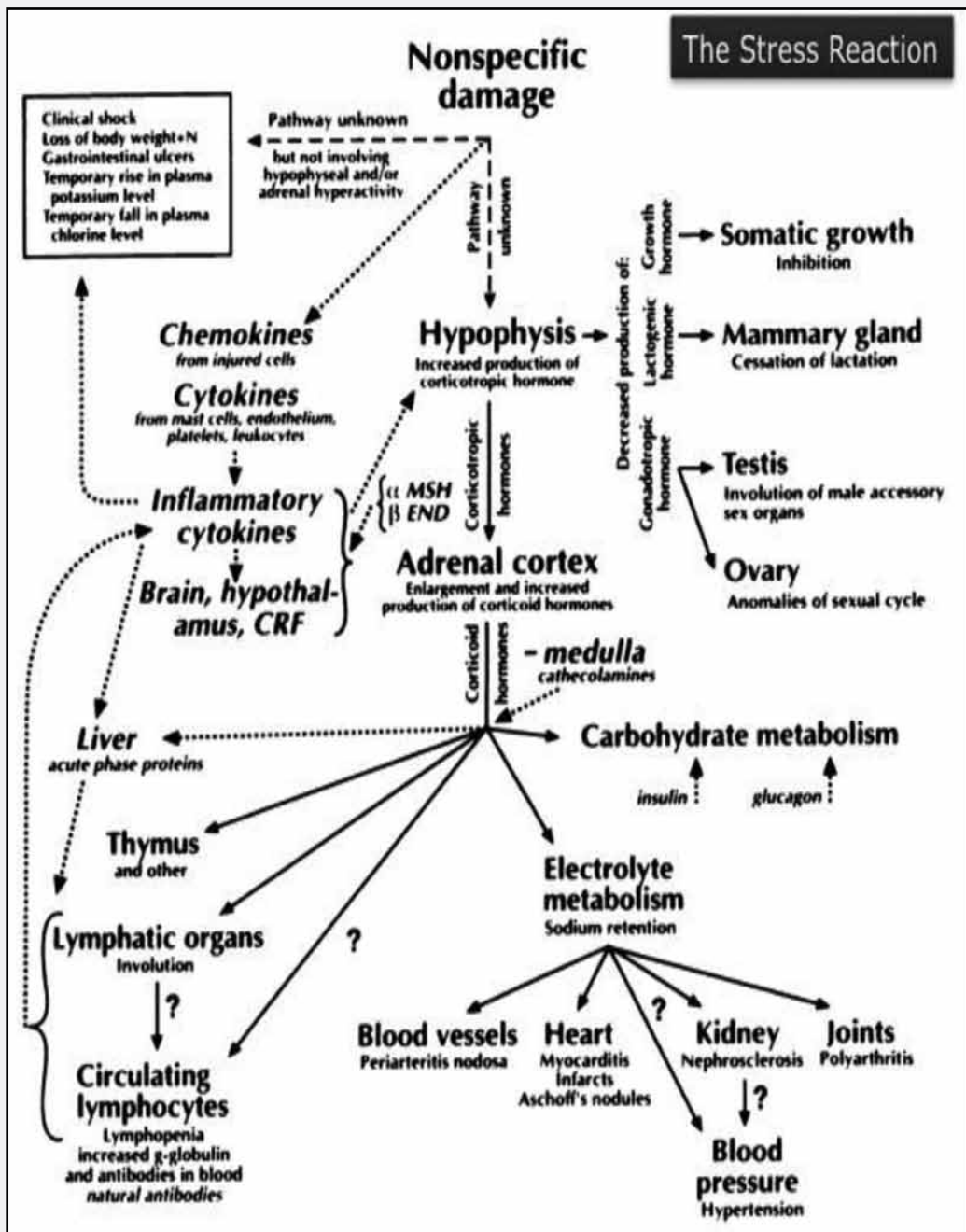
The hormones are characterized by specific seasonal and diurnal rhythms. For some of them their peak is early in the morning (cortisol), for others is in midnight (melatonin).

The disturbance of their ordinary circadian rhythm destroys the function of another rhythm that causes the damage of some of our organs. Such disturbances can provoke various somatic and psychic problems. They can ruin the immune system of the organism.

Hans Selye, *Science* 122:625, 1955

According to Selye the body always responds the same way to different psychological challenges. There is a relation between stress and physical disturbances (heart and gastric diseases, hypertension, carcinoma, asthma and s. o.), followed after various life events.

Stress can have many profound effects on the human biological systems. Biology primarily attempts to explain major concepts of stress using a stimulus-response paradigm, broadly comparable to how a psychobiological sensory system operates. The central nervous system (brain and spinal cord) plays a crucial role in the body's stress-related mechanisms. On the next figure (drawn by Selye) is shown the influence of stress on the functions of the various organs and systems in the living organisms.



The brain plays a critical role in the body's perception of and response to stress. In spite of this, several important brain structures and the various hormones that are secreted by the different glands implicated in playing key roles in stress response pathways are described below:

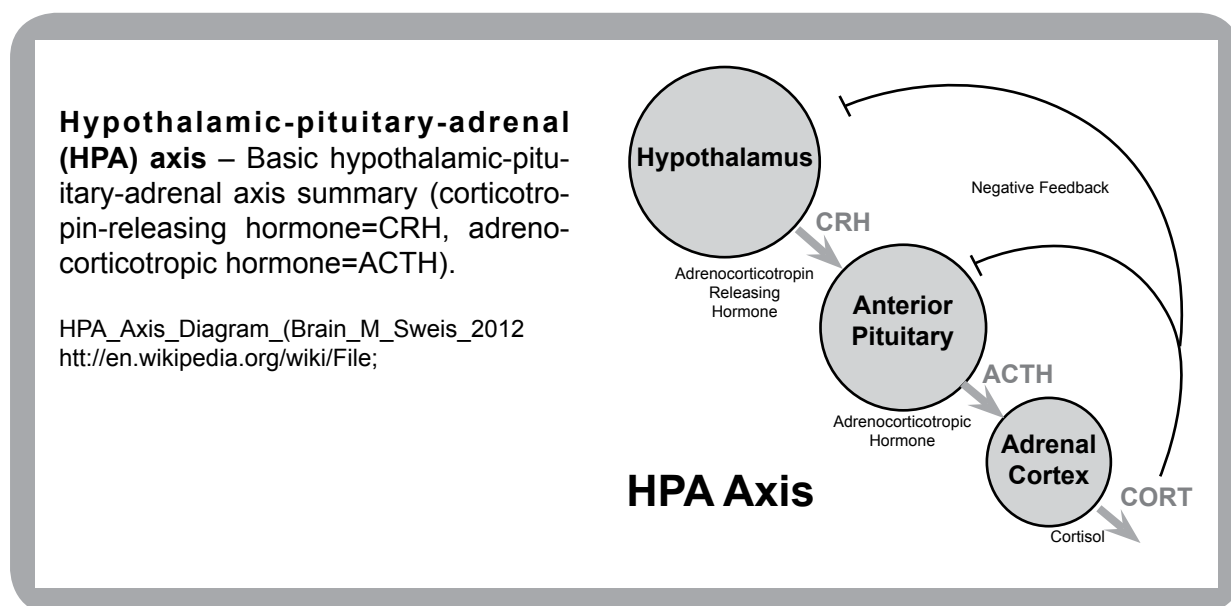
Gland	Hormons
Hypothalamus	During a stress response, the hypothalamus secretes various hormones, namely corticotropin-releasing hormone, which stimulates the body's pituitary gland and initiates a heavily regulated stress response pathway. ACTH – is a hormone that travels in the blood stream. Affected disorders – neuroendocrine abnormalities reflect disruption in biogenic amines input to the hypothalamus. The hypothalamic-pituitary adrenal axis is hyperactive in depression, leading to increase cortisol plasma level. Growth hormone (GH), follicle stimulating hormone (FSH) and luteinizing hormone (LH), are decreased in endogenous depression.
Pituitary gland	It is located under the hypothalamus. During a stress response, the pituitary gland releases hormones into the blood stream, namely adrenocorticotrophic hormone (ACTH) which modulates a heavily regulated stress response system.
Pineal gland	Melatonin – plays a major part in the organization both at a juvenile age and in adults. Some authors suggest that an effect of melatonin can be exerted very early in the organism of the hypothalamic neuronal networks, in that it affects the manifestation of circadian rhythmicity in adult life. The mammalian pineal gland is a slave oscillator and sympathetic, noradrenergic input.
Hippocampus	It is a part of the brain's limbic system. During stress, the hippocampus is particularly important, in that cognitive processes such as prior memories can have a great influence on enhancing, suppressing, or even independently generating a stress response. The hippocampus is also an area in the brain that is susceptible to damage brought upon by chronic stress.
Amygdala	A part of the brain's limbic system, with projections to and from the hypothalamus, hippocampus, and locus coeruleus among other areas. Thought to play a role in the processing of emotions, the amygdalae have been implicated in modulating stress response mechanisms, particularly when feelings of anxiety or fear are involved.
The spinal cord	It plays a critical role in transferring stress response neural impulses from the brain to the rest of the body. It communicates with the rest of the body by innervating the peripheral nervous system.
Prefrontal cortex	The prefrontal cortex can become damaged during the stress response.
Raphe nucleus	It is located in the pons, that is the principal site of the synthesis of the neurotransmitter serotonin, which plays an important role in mood regulation, particularly when stress is associated with depression and anxiety.
Thymus	Thymosine.
Thyroid gland	Thyroid-stimulating hormone – endogenous depression.
Pancreas	Insulin, Glucagon;
Adrenal Medulla Cortex	Adrenalin, Noradrenaline – their values can be increased in patients with anxiety disorders. There is a decreased biogenic amine (serotonin, dopamine, and norepinephrine) activity in depression, increased activity in mania. Dopamine can be increased in schizophrenia. Cortisol and other steroids – cortisol plasma levels are higher in endogenous depression.
Duodenum	Secretin
Stomach	Gastrin
Ovary	Estrogens, progesterone.
Placenta	Gonadotropin, estrogens;
Testis	Testosterone – is decreases in depression and increased in aggression.

Neurochemistry

Hormones are substances that travel throughout the body and have a great influence on our behavior. They are secreted by different glands. The hormones that are secreted by the endocrine glands are very important regulators of many body activities.

Corticotropin-releasing hormone – is secreted by the hypothalamus during a stress response that stimulates the anterior lobe of the pituitary gland by binding to its corticotropin-releasing hormone-receptors, causing the anterior pituitary to release ACTH.

Adrenocorticotrophic hormone – it is secreted by the anterior lobe of the pituitary gland into the body's blood stream that stimulates the cortex of the adrenal gland by binding to its adrenocorticotrophic hormone-receptors, thus causing the adrenal gland to release cortisol.



Cortisol – is a steroid hormone, called glucocorticoids, produced by the adrenal gland and secreted during a stress response. Its primary function is to redistribute energy (glucose) to regions of the body that need it most (the brain, the muscles). Cortisol also acts to suppress the body's immune system. Cortisol is synthesized from cholesterol in the adrenal cortex. Its primary function is to increase blood sugar through gluconeogenesis, suppress the immune system and aid in fat and protein metabolism.

Norepinephrine is a neurotransmitter released from locus coeruleus when stimulated by the hypothalamus during a stress response. Norepinephrine serves as the primary chemical messenger of the central nervous system's sympathetic branch that prepares the body for fight-or-flight response.

Serotonin – is a neurotransmitter synthesized in the raphe nucleus of the pons of the brainstem and projects to most brain areas. Serotonin is thought to play an important role in mood regulation. Stress-induced serotonin dysfunctions have been associated with anxiety, fear and depression-like symptoms.

Neuropeptide Y – is a protein that is synthesized in the hypothalamus and acts as a chemical messenger in the brain. Traditionally, it has been thought to play an important role in appetite, feeding behavior, and satiety, but more recent findings have implicated Neuropeptide Y in anxiety and stress, specifically, stress resiliency.

Stress reduced the ability of the Blood Brain Barrier to block the transfer of chemicals including hormones from entering the brain from the blood stream. That is why when corticosteroids are released into the bloodstream – they are immediately able to penetrate the brain and activated and stimulated the neurons in amigdala, hyppocampus, and prefrontal cortex. This stimulation of the neurons triggers a **fight-or-flight response** which allows the brain to quickly process information and therefore deal with life-threatening situations.

If the stress continues and becomes chronic, the hyperactivity physically changed the neurons and has severe damaging effects on the mental health. As the neurons are stimulated, calcium is released through channels in their cell membranes. This allows the cells chemical signals to continue to fire, allowing nerve cells to remain stimulated, if this continues the cells will become overloaded with calcium leading to over-firing of neuron signals. The over-firing of the neurons is seen to the brain as a dangerous malfunction; therefore, triggering the cells to shut down to avoid death due to over stimulation.

Immune system – the most important aspect are T-cells found in the form of T-helper and T-suppressor cells. Cortisol into the bloodstream, immediately begins to cause division of T-Suppressor cells. This rapid cell division increases the number of T-Suppressor cells while at the same time suppressing T-helper cells. This reduces immune protection and leaves the body vulnerable to disease and infection. According to the most researchers stress has a negative effect on the immune system. Stress affects the immune system in many ways. The immune system protects the body from viruses, bacteria, and anything that is different or that the body does not recognize. Cortisol can weaken the activity of the immune system. Cortisol prevents the proliferation of T-cells by rendering the interleukin-2 producer T-cells unresponsive to interleukin-1 (IL-1), and unable to produce the T-cell growth factor.

Chronic stress is defined as a “state of prolonged tension from internal or external stressors, which may cause various physical manifestations – e.g., asthma, back pain, arrhythmias, fatigue, headaches, irritable bowel syndrome, ulcers, and suppress the immune system” Chronic stress takes a more significant role on the body than acute stress does. It can raise blood pressure, increase the risk of heart attack and stroke, increase vulnerability to anxiety and depression, contribute to infertility, and hasten the aging process.

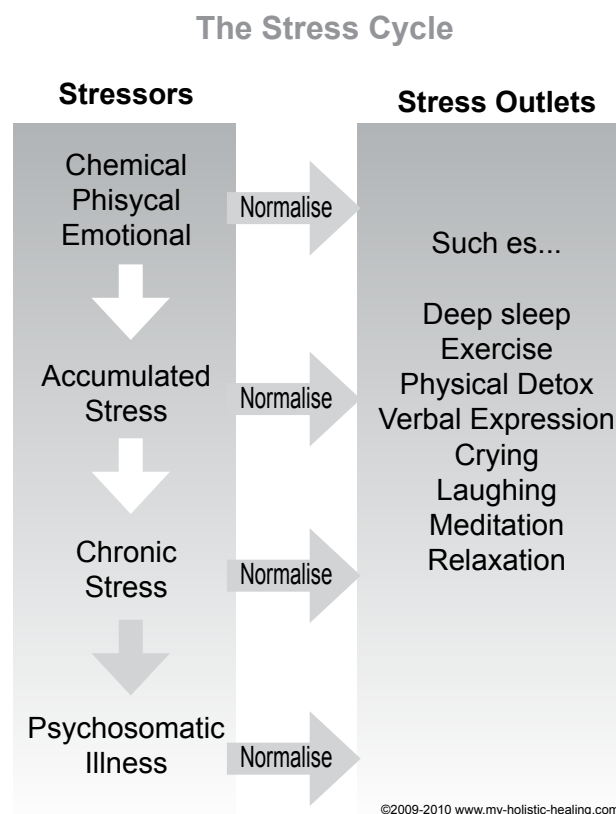
For example, results of one study demonstrated that individuals who reported relationship conflict lasting one month or longer have a greater risk of developing illness and show slower wound healing. Similarly, the effects that acute stressors have on the immune system may be increased when there is perceived stress and/or anxiety due to other events. For example, students who are taking exams show weaker immune responses if they also report stress due to daily hassles.

Chronic stress influenced the developmental of growth in children by lowering the pituitary gland’s production of growth hormone. It **affects the parts of the brain where memories are processed and increased the levels of visceral fat** in their bodies. This suggests a possible cause-and-effect link between the two, wherein stress promotes the accumulation of visceral fat, which in turn causes hormonal and metabolic changes that contribute to heart disease and other health problems.

Mechanisms of chronic stress – the relationship between the immune system and the central nervous system indicate that stress can alter the function of the white blood cells involved in immune function known as lymphocytes and macrophages. People with stressful life events, such as marital turmoil or bereavement, have a weaker lymphoproliferative response. Cortisol during chronic stress is over produced, causing fewer receptors to be produced on immune cells so that inflammation cannot be ended.

Clinical symptoms and disorders caused by stress

Clinical symptoms	Disorders
Cognitive symptoms	<ul style="list-style-type: none"> • Memory problems • Inability to concentrate • Poor judgment • Pessimistic approach or thoughts • Anxious or racing thoughts • Constant worrying.
Emotional symptoms	<ul style="list-style-type: none"> • Moodiness • Irritability or short temper • Agitation, inability to relax • Feeling overwhelmed • Sense of loneliness and isolation • Depression or general unhappiness
Physical symptoms	<ul style="list-style-type: none"> • Aches and pains • Diarrhea or constipation • Increased frequency of urination • Indigestion • Changes in blood glucose • Nausea, dizziness • Chest pain, rapid heartbeat • Loss of sex drive • Frequent colds • Irregular periods
Behavioral symptoms	<ul style="list-style-type: none"> • Eating more or less • Sleeping too much or too little • Isolating oneself from others • Procrastinating or neglecting responsibilities • Using alcohol, cigarettes, or drugs to relax • Nervous habits (e.g. nail biting, pacing).



In 1984 **Friedman & Rose** put the question:

“Why females that consummate much food, that contains cholesterol do not suffer from Infarctus myocardi, than the males, that do not use in their food so much cholesterol? Can we think that there is a connection with the sex-hormones?”

If it is so:

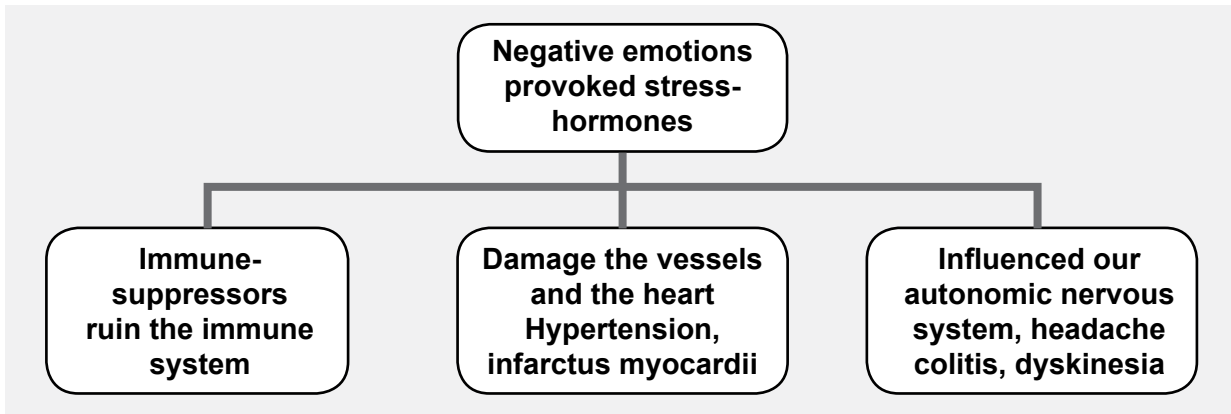
“Why negro-females that have the same sex-hormones as white females suffered also from infarctus myocardi as the males”.

They did a prolonged investigation of 3000 males (aged between 35 and 59 years) for a period of 9 years – their habits, manner of life, profession, risk-factors, their behavior, their food regime and the preferred foods, their life events.

So they established that the reason is in the stress. Stress is the murderer of our heart.

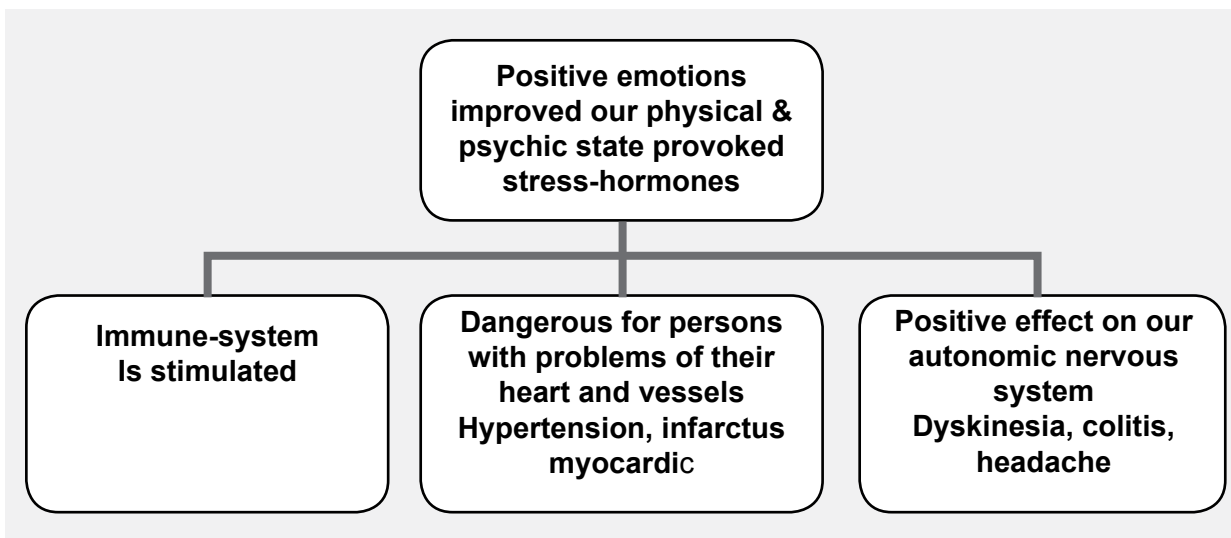
Each exam for pupils and students is a stress. The night before the exam they can not sleep, and before the exam they are nervous, worried about the test, often urine, their pulse rate and blood pressure could be increased or decreased. When they graduated from the university they feel well and could be very successful in their business.

It is very difficult to measure stress levels as it depends of the differences in people's personalities. Some people are able to process many stressors in comparison with others.



We must stress on the fact that one and the same life events could provoke different disturbances. For instance: during earthquake some could became excited and agitated, others could be confused and not adequate, or could receive serious psychiatric disorders as psychogenic stupor, depression, or later could develop schizophrenia or psychosomatic disease (hypertension, colitis, ulcus ventriculi or duodeni and s.o.).

Both negative and positive stressors can lead to stress. The intensity and duration of stress changes depending on the circumstances and emotional condition of the person suffering from it (Arnold. E and Boggs. K. 2007).



We have many cases with exam-phobia of pupils and students.

Case 1. A girl during her school period was treated for severe headache with various drugs as tranquilizers, antidepressants & thymostabilizers. Each year at the beginning of the new school year she came to me and pleased me to give some drugs for her headache. When she finished her education she did not need of any drugs any more.

Case 2. A medical student after a stress during the exam in surgery that was caused by the cruel behavior of the professor, was afraid to be examined. When she finished medicine, her colleagues were surprised that she was one of the best doctors in the department. Her next stress was when she had to take her exam for specialization. Even she was very well prepared she had no courage to enter in the room for examination. She lied her husband that she failed the exam. When he understood the true on the next examinations he accompanied her till the door of the auditory and she had to enter. So she took the exam successfully.

In 1967 in the Journal of Psychosomatic Medicine” Holmes and Rahe published an article in which they established the most stressful events in 600 persons. They established that the most serious life event for them were “Death of spouse”, “Divorce”, “Marital separation” (see the Questionnaire). One evaluation of the different stresses in people’s lives is the Holmes and Rahe stress scale.

Holmes and Rahe stress scale

Life Events	Life Changes Units
Death of spouse	100
Divorce	73
Marital separation	65
Jail term	63
Death of close family member	63
Personal injury or illness	53
Marriage	50
Fired at work	47
Marital reconciliation	45
Retirement	45
Change in health of a family member	44
Pregnancy	40
Sex Difficulties	39
Gain of new family member	39
Business readjustment	39
Change in financial state	38
Death of close friend	37
Change to different line of work	36
Change in number of arguments with spouse	35
Mortgage over \$100,000	31
Foreclosure of mortgage or loan	30
Change in responsibilities at work	29

Life Events	Life Changes Units
Son or daughter leaving home	29
Trouble with in-laws	29
Outstanding personal achievement	28
Wife begins or stops work	26
Begin or end school	26
Change in living conditions	25
Revision in personal habits	24
Trouble with boss	23
Change in work hours or conditions	20
Change in residence	20
Change in schools	20
Change in recreation	19
Change in church activities	19
Change in social activities	18
Mortgage or loan less than \$30,000	17
Change in sleeping habits	16
Change in number of family get-togethers	15
Change in eating habits	15
Vacation	13
Christmas alone	12
Minor violations of the law	11

We must not neglect the cultural differences. We used the same questionnaire in 2005 for our population and it was established that among the 10th serious life events were “Death of spouse”, “Divorce”, “Son or daughter living home”, “Inability to pay taxes for education of the children”, “Inability to have enough money for food”, “When a member of the family enters in religions sect”.

These differences could be explained also with the valuables of each person. We must not forget that the valuables could be changed with the time.

Many authors find out a correlation between life events and physical illness, psychosomatic and psychiatric disorders. Specific life changes are associated with psychiatric and psychosomatic symptoms.

R. Adler and N. Cohen in 1985 established the link between stress and cancer.

T. Tashev (1979) established that about 30% of depressive patients announced for life event before depressive phase. A. Marinov found out almost the same in schizophrenia.

Burnout (psychology)

It is not possible to let pass the problem of Burnout syndrome, as it has been assumed to result from chronic occupational stress (e. g. work overload). Herbert Freudenberger in 1970 was the first that identified the construct "burnout". The term *burnout* in psychology was coined by Herbert Freudenberger in his 1974 *Staff burnout*, presumably based on the 1960 novel *A Burnt-Out Case* by Graham Greene, which describes a protagonist suffering from burnout.



Burnout is a psychological term that refers to long-term exhaustion and diminished interest in work. Despite its popularity, burnout is not recognized as a distinct disorder, neither in the DSM-5, nor in the ICD-10. This is notably due to the fact that burnout is problematically close to depressive disorders. Bianchi et al. (2014) showed that about 90% of burned out workers meet diagnostic criteria for depression. Being that burnout may sound a lot like stress, it is important to realize that they are not one in the same. While stress is characterized by over-engagement, burnout is characterized by disengagement. Stress ultimately produces urgency and hyperactivity, whereas burnout produces helplessness or hopelessness. And although stress may cause a loss of energy and anxiety disorders, burnout often involves loss of motivation, ideals, and hope. The "Burnout syndrome is discussed by D. Pisseva-Stojanova (2005) and D. Stoyanov (2010).

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VII. AGGRESSION

Can we think that there is an aggression in this case?

Two patients are in a hospital. The bed of patient A is near the window of the room, whereas the bed of patient B is near the door. Patient A looked through the window and said: "Today is a charming sunny day. Spring is coming. The birds are singing nice songs. The trees are with blossoms with different colours. The daffodils, the narcissi, the violets, the marguerites, and the snowdrops are flowering. Can you imagine, I catch their charming aroma, even the window is closed?". Patient B was silent, and was envious of his bed. Two days later at midnight patient A received a heavy heart stroke. He could not press the call-button for help. Patient B saw everything, but did not press his button. Patient A died. On the next day he took his bed. He looked through the window and did not notice the coming spring. He said to himself: "There is nothing charming outside".

What is aggression?

The definition for aggression is too different in the various dictionaries and textbooks.

Aggression is:

1. Hostile or destructive behavior or attitudes: physical aggression; verbal aggression; emotional aggression.
2. The practice or habit of taking hostile actions or launching military attacks: imperial aggression.
3. A hostile act or military attack: aggressions that led to full-scale war.

(in American Heritage® Dictionary of the English Language, Fifth Edition)

Aggression

1. (Government, Politics & Diplomacy) an attack or harmful action, esp an unprovoked attack by one country against another
2. any offensive activity, practice, etc: an aggression against personal liberty.
3. (Psychology) *psychol* a hostile or destructive mental attitude or behaviour
[C17: from Latin *aggression-*, from *aggrēdi* to attack]

(in Collins English Dictionary – Complete and Unabridged
© HarperCollins Publishers 1991, 1994, 1998, 2000, 2003)

Aggression

1. the action of a state in violating by force the rights of another state, particularly its territorial rights.
2. any offensive action, attack, or procedure; an inroad or encroachment.
3. the practice of making assaults or attacks; offensive action in general.
4. hostility toward or attack upon another, whether overt, verbal, or gestural;

© HarperCollins Publishers 1991, 1994, 1998, 2000, 2003)

Aggression

1. an attack or harmful action, esp an unprovoked attack by one country against another
2. any offensive activity, practice, etc: an aggression against personal liberty
3. psychology – hostile or destructive mental attitude or behavior

Aggression is any activity by a person (or animal) which tries to harm someone or something.

“Tries to Harm”

One person can attack another person i.e. act aggressively but not harm the other person. Thus the aggression for the above definition does not have to achieve harm.

Some times the failure of the aggression to succeed will frustrate/disturb the aggressor and will cause them to try another aggressive activity.

Aggression is obvious, often harmful, social interaction with the intention of damage other unpleasantness upon another individual. It is a virtually universal behavior among animals. It may occur either in retaliation or without provocation. In humans, frustration due to blocked goals can cause aggression.

In definitions commonly employed in the social sciences and behavioral sciences, aggression is a response by an individual that delivers something unpleasant to another person. Some definitions include that the individual must intend to harm another person. Predatory or defensive behavior between members of different species may not be considered aggression in the same sense.

Etymology – *the term aggression comes from the Latin aggressio, meaning attack, from aggrredi to attack. The Latin was itself a joining of ad- and gradi-, which meant step at. The first known use dates back to 1611, in the sense of an unprovoked attack. A psychological sense of “hostile or destructive behavior: dates back to 1912, in an English translation of the writing of Sigmund Freud. Alfred Adler had theorized about an “aggressive drive: in 1908. Child raising experts began to refer to aggression rather than anger from the 1930.*

Aggression – is a feeling of hostility that arouses thoughts of attack.

Aggression – a disposition to behave aggressively **unfriendliness**, an unfriendly disposition.

Medical Definition of Aggression – *hostile, injurious, or destructive behavior or outlook especially when caused by frustration*

According to A. Buss aggression is divided into:

Physical (childhood) – verbal (after pubertal age); irony, a sneer at s. o. sarcasm, blackmail;

Active aggression;

Passive aggression – defends; protect against s. o.;

Direct aggression – when s.o is rough to s. b.;

Indirect aggression – offends s. o., personal insult; abuse, misappropriate with money.

According to A. Buss and S. Feshbach aggression is:

- **Impulsive aggression** = reactive aggression = instinctively anger (hostility);
- **Instrumental aggression** = proactive aggression – aggressive person attacked the victim in order to receive some use – position in society, in business and s. o. The aggressive action is only the external view, but the aim is the thought for this action – “to put the trigger to put in action the gun”.
- **Angry aggression** – it appears when the person is very angry. The idea is to damage the victim (s. o. that he had in mind or decided). The anger includes physical anxiety and the body is in an aggressive position.

Patient's Aggression to the Medical Staff.

- *Personality of the patients;*
- *In the world – the % of the doctors decreased*
- *In 1990 in West Europe many psychiatrists leave Europe, because there were many law processes against doctors;*
- *Now in Bulgaria serious conflicts between patients and doctors are connected with some factors:*
 - *Economic crisis;*
 - *Serious financial problems of the population;*
 - *Aggravate the tension between doctors and patients.*

A number of classifications and dimensions of aggression have been suggested.

These depend on such things as whether the aggression is **verbal or physical**; whether or not it involves relational aggression such as covert bullying and social manipulation; whether harm to others is intended or not; whether it is carried out actively or expressed passively; and whether the aggression is aimed directly or indirectly. Classification may also encompass aggression-related emotions (e.g. anger) and mental states (e.g. impulsivity, hostility). Aggression may occur in response to non-social as well as social factors, and can have a close relationship with stress coping style. It may be displayed in order to intimidate.

In literature aggression is commonly divided into 2 subtypes:

- Impulsive;
- Instrumental – named also proactive aggression. It is characterized by a lack of emotions according to Blair.

Examples from the web for aggression

- The only way to stop that behavior is to get their attention at the same intensity as their *aggression*.
- The drug elevates *aggression* levels and psychotic behavior, often generating fierce outbursts.
- Quite simply, they are getting off on the behavior of *aggression*.
- Relational *aggression* is finding its chroniclers among more popular writers, too.
- The groups were tested for antisocial personality disorder, psychopathy and *aggression*.
- The researchers found that workplace *aggression* had severe consequences on employee well-being.
- And though fear can be covered in *aggression* as it was last night, it can't be overlooked.
- Small countries don't have anything that can counter this *aggression*.
- Quieting the *aggression* center also stopped mice from acting on violent urges.
- In many cases, however, there are options other than *aggression* in word or deed.

Aggression can take a variety of forms which may be expressed **physically or communicated** verbally or **non-verbally**: *including anti-predator aggression, defensive aggression (fear-induced), predatory aggression, dominance aggression, inter-male aggression, resident-intruder aggression, maternal aggression, species-specific aggression, sex-related aggression, territorial aggression, isolation-induced aggression, irritable aggression, and brain-stimulation-induced aggression (hypothalamus).*

There are two subtypes of human aggression:

- *controlled-instrumental subtype* (purposeful or goal-oriented);
- *reactive-impulsive subtype* (often elicits uncontrollable actions that are inappropriate or undesirable). Aggression differs from what is commonly called assertiveness, although the terms are often used interchangeably among laypeople (as in phrases such as “an aggressive salesperson”).

Two broad categories of aggression are commonly distinguished:

- affective (emotional) and hostile;
- reactive, or retaliatory aggression that is a response to provocation, and the other includes instrumental;
- goal-oriented or predatory, in which aggression is used as a mean to achieve a goal. An example of hostile aggression would be a person who punches someone, or is rough with s. o. An instrumental form of aggression would be armed robbery.

AGGRESSION

HETERO-AGGRESSION
Aggression is against s. o. person
MURDER

AUTO-AGGRESSION
Aggression is directed (oriented) to ourselves
SUICIDE

The murder could appear:

- Accident – self-defence;
- Strong emotional effect – unfaithfulness, calumny, robbery, theft;
- Dead-lock – give birth of child out of low;
- Make easier – alcohol abuse, narcotic drugs, stimulants.

The murder, the wound, the offend and the rape are the most heavy criminal offence against the personality

According to article 9, paragraph 1 from the civil code “the crime is that social dangerous criminal act (action or inaction), that is declared by the law for indictability (punishability)”.

PERSONALITY

Ethical persons never confronted with the society or with s. o. persons, keeps the rights of the others and defend their personal rights.

Not-ethic persons Not correct relationship with the other persons, impulsiveness, primitive reactions, antisocial behavior.

The scientists established that the motives for aggression and murder could be various. Most of the authors had a special interest about the choice of the victim and the predominant opinion is that the sacrifice is a known person.

It is established that about 1/3 of the aggressive acts of schizophrenic males* during their first episode mainly is against their mother on the 1st place, after that is their wife, their father, their children*.

MOTIVES FOR AGGRESSION AND MURDER (L. Gulabov)

1. Sexual conflicts – 24.2% – (jealousy)
2. Revenge – 24.2%;
3. Quarreled – 15% (offence, envy)
4. Self-defence – 6.9%;
5. Self-interest – 17.2%
6. Envy – 3.4%;
7. Child out of love (natural) – 1.2% (scrag)

THE CHOICE OF THE SACRIFICE/VICTIM

1. Wife – 1:3 of the cases;
2. Known persons – 13.8%;
3. Friends, erotic objects, and unknown people – 9.2%;
4. Unknown children and official persons – 8.5%;
5. Their own child.

***Case report:** AEG is 24 years old male. He was married lived in family house together with his wife, his little boy, his brother, his brother's wife and his parents. During the last 3 months he became too excited, he could not sleep well in the night, he had nightmares. He heard voices that were spoken to him that his wife and his father were lovers. The voices tolled him that when his shoes were turned to the east it means that they would meet in the farmyard in the water closet to make sex. He could not sleep during the whole night. He wanted to understand the truth. This story continued 3 month. He did not sleep, as the voices told him that in midnight his wife and his father had a meeting. It was in June, a very hot day. He could not sleep during the whole night. In the morning the family had to go to harvest. His mother noticed that he was not well and said: "You will not go to harvest today, as you do not look like well. You wife and your father will go to harvest the small field, whereas your brother and his wife will work in the big field". During the whole day he was very agitated, the voices said to him: "You see, even your mother supported their connection. You must kill your father". In the afternoon he took his father's gun, than went to the balcony, and when his father returned at home, he killed him. In front of the psychiatrists he explained them that he heard voices. These voices tolled him that his father was in intimate contact with his wife. After the psychiatric expertise he was hospitalized in a psychiatric department for dangerous patients in the town of Lovech. About 3 years he was quiet without any aggressive behavior. Then he was moved to the psychiatric hospital – Radnevo. For 2 years he had no aggression. On the 2.05.1972 he ran away from the department. The police was informed to go to his family and to warn them of the danger. His relatives refused to return him back to the hospital. He stopped the medicaments. For 5 days he was quiet. On the 7th of May together with his son and his brother went to the dam lake for fish. His brother went with the boat far out at the lake. After 20 minutes he heard child's cry. He looked at the side of the lake and saw how his brother stabbed the little boy with his knife. He turned his boat to them. AEG was arrested by the police and a new psychiatric expertise was done. The patient shared with the doctors, that the heard voices that were spoken to him: "The voices tolled me, to kill this child, because it is wicked, it is not my son, it is by the sinful love between my wife and my father. It must be punished and that is why I killed him. The voices ordered me after that to kill my wife, and to punish her for the infidelity and than I had to kill her mother, because she supported her and after that to return back to the hospital and to kill my doctor that wants to poison me with the drugs".

His diagnose is: **Schizophrenic disorder. Paranoid form with verbal hallucinations.**

His aggressive behavior was connected with his schizophrenic disorder and the verbal hallucinations with imperative character. The patient could not support these voices and obey their commands.

Gender

Some theories tried to explain why males and females have differing aggressive behaviors. It is not understood why the aggression between males and females there is such variation in species (parental investment, gamete production, gestation, lactation), generally the more physically aggressive sex is the male, particularly in mammals. When the female can leave the male to care for the little animals, then females may be the larger and more physically aggressive. Aggression in women is less physically dangerous and more covert or indirect. However, there are critiques for using animal behavior to explain human behavior. In general, males use more physical aggression than females, while females use more verbal aggression. Children interact with, and are aggressive toward both same – and other-gender peers. There are more recent findings that show that differences in males and females aggression appear at about two years of age, though the differences in aggression are more consistent in middle-aged children and adolescence. Physically aggressive behaviors such as kicking, biting and hitting are age-typical expressions of innate and spontaneous reactions to biological drives such as anger, hunger, and affiliation. It is supported by R. Stamatov. [HYPERLINK "http://en.wikipedia.org/wiki/Aggression"](http://en.wikipedia.org/wiki/Aggression) \l "cite_note-44". Girls relational aggression, meaning non-physical or indirect, tends to increase after age two while physical aggression decreases. There was no significant difference in aggression between males and females before two years of age. A possible explanation for this could be that girls develop language skills more quickly than boys therefore they have better ways of verbalizing their needs.

Aggression in Bulgaria was discussed by H. Popov (2003) and R. Stamatov (2000). The second author stressed on the fact that little children used physical aggression and tried to explain the mechanisms of the child aggression.

Studies showed girls' aggressive tactics included gossip, ostracism, breaking confidences, and criticism of a victim's clothing, appearance, or personality, whereas boys engage in aggression that involves a direct physical and/or verbal assault. This could be due to the fact that girls' frontal lobes develop earlier than boys, allowing them to self-restrain.

In sports

The rate of aggression in both contact and non-contact sports is relatively equal. Since the establishment of Title IX, female sports have increased in competitiveness and importance, which could contribute to the evening of aggression and the "need to win" attitude between both sexes. Also, males in competitive sports are often advised by their coaches not to be in intimate relationships based on the premises that they become more docile and less aggressive during an athletic event. The circumstances in which males and females experience aggression are also different.

Among sex differences found in adult sports were that females have a higher scale of indirect hostility while men have a higher scale of assault. Another difference found is that men have up to 20 times higher levels of testosterone than women.

Culture

Many scholars assert that culture is one factor that plays a role in aggression. Tribal or band societies existing before or outside of modern states have sometimes been depicted as peaceful "noble savages" or alternatively as brutish "beasts". The Kung Bushmen were described as "The Harmless People" in a popular work by Elizabeth Marshall Thomas in 1958, while Lawrence Keeley's 1996 *War Before Civilization* suggested that regular warfare without modern technology was conducted by most groups throughout human history, including most Native American tribes. Studies of hunter-gatherers show a range of different societies. In general, aggression, conflict and violence sometimes occur, but direct confrontation is generally avoided and conflict is socially managed by a variety of verbal and non-verbal methods.

Aggression – animals

Ethologists study aggression as it relates to the interaction and evolution of animals in natural settings. In such settings aggression can involve bodily contact such as biting, hitting or pushing, but most conflicts are settled by threat displays and intimidating thrusts that cause no physical harm. This form of aggression may include the display of body size, antlers, claws or teeth; stereotyped signals including facial expressions; vocalizations such as bird song; the release of chemicals; and changes in coloration. The term agonistic behavior is sometimes used to refer to these forms of behavior.

Most of the ethologists believe that aggression confers biological advantages. Aggression may help an animal secure territory, including resources such as food and water. Aggression between males often occurs to secure mating opportunities, and results in selection of the healthier/more vigorous animal. Aggression may also occur for self-protection or to protect offspring. Aggression between groups of animals may also confer advantage; for example, hostile behavior may force a population of animals into a new territory, where the need to adapt to a new environment may lead to an increase in genetic flexibility.

Between species and groups

The most apparent type of interspecific aggression is that observed in the interaction between a predator and its prey. However, according to many researchers, predation is not aggression. A cat does not hiss or arch its back when pursuing a rat, and the active areas in its hypothalamus resemble those that reflect hunger rather than those that reflect aggression. However, others refer to this behavior as predatory aggression, and point out cases that resemble hostile behavior, such as mouse-killing by rats. In aggressive mimicry a predator has the appearance of a harmless organism or object attractive to the prey; when the prey approaches, the predator attacks.

An animal defending against a predator may engage in either “fight or flight” in response to predator attack or threat of attack, depending on its estimate of the predator’s strength relative to its own. Alternative defenses include a range of antipredator adaptations, including alarm signals.

Aggression between groups some time depends on the will to fight, which could be connected with various factors as: numerical advantage, distance from home territories, how often the groups encounter each other, competitive abilities, differences in body size, and whose territory is being invaded.

Aggression Within a animal group

One of its most common functions is to establish a dominance hierarchy – to study the aggression between the animals in the group. Usually the more aggressive animals become the more dominant. **Conflicts between animals** occur in many contexts, such as between partners, between parents and children, and between competitors. Group-living animals may dispute over the direction of travel or the allocation of time to joint activities, various forms of conflict resolution, have been observed in mammalian, in gregarious primates. Another moment is how aggression affects the organization of the group. For example, bonobo chimpanzee groups are known for low levels of aggression within a partially matriarchal society. Captive animals including primates may show abnormal levels of social aggression and self-harm.

Theories for aggression

- **19th century** – the Devil is lynched, he is not the only evil force;
- **Evolutional Darwin’s theory** – the bridge between the human and the animal;
- **The cruel males are with primitive features of the face** – massive maxillary;
- **Violence and conflict** – aggression can involve violence that may be adaptive under certain circumstances in terms of natural selection. This is most obviously the case in terms of attacking prey to obtain food, or in anti-predatory defense. ***It may also be the case in competition between members of the same species or subgroup***, if the average reward (e.g. status, access to resources, protection of self or kin) outweighs average costs (e.g. injury, exclusion from the group, death). ***There are some hypotheses of specific adaptations for violence in humans under certain circumstances, including for homicide, but it is often unclear what behaviors may have been selected for and what may have been a by-product, as in the case of collective violence.***
- **Phrenology of Gall and Lombroso** – they established a connection between the character and the intelligence.

Phrenology of Lombroso

Cesare Lombroso was an Italian criminologist, psychiatrist and established Classical school, which held that crime was a characteristic of human nature. Lombroso’s theory of anthropological criminology supported the idea that criminality was inherited. He thought that some “born criminal” could be identified by physical defects, which confirmed a criminal as savage, or atavistic. First he studied literature and archaeology, but later he became a surgeon, he became a professor in medicine, than he was a professor in Psychiatry and criminal anthropology.



The anthropological examination and measurement the head of a patient by anthropologists.

Lombroso’s theory suggested that criminals are distinguished from non-criminals by multiple physical anomalous. He declared that criminals represented a reversion to a primitive or subhuman type of man characterized by physical features reminiscent of apes, lower primates, and primitive persons. Through years of post-mortem examinations and anthropometric studies of criminals, the insane and normal individuals.

Cesare Lombroso



(1835-1909)

Lombroso became convinced that the “born criminal” could be anatomically identified by such items as unusual size, asymmetry of the cranium and the face, prognathism, excessive length of arms, and other “physical anomalous”. Specific criminals, such as thieves, rapists, and murderers, could be distinguished by specific characteristics, he believed. Lombroso also maintained that criminals had less sensibility to pain and touch; more acute sight; a lack of moral sense, including an absence of remorse; more vanity, impulsiveness, vindictiveness, and cruelty; and other manifestations, such as a special criminal argot and the excessive use of tattooing.

Lombroso’s theories were criticized all over the world. Later he published his book “The Man of Genius”. He argued that artistic genius was a form of hereditary insanity.

Theoretical perspectives:**Cortisol and Testosterone**

Cortisol and Testosterone balanced – the scientists studied the steroid **Cortisol (CRT)** and **Testosterone (T)** target in the search of hormonal modulators of a social aggression. **Terburg et al. (2009) and van Honk et al. (2010)** suggested that the balance between testosterone and cortisol levels that is testosterone/cortisol ratio (T/CRT), might be predictive for both types of aggression.

**STEROID CORTISOL (CRT)
& TESTOSTERONE (T)**

Hormonal modulators of social aggression is connected with CRT and T.

In the literature, aggression is commonly divided into:

- **impulsive aggression** (reactive) is not planned aggression, it is driven by affect:
- **instrumental subtype** (proactive aggression) is characterized by a lack of emotions (Blair 2010).

The balance between T and CRT levels, that is the testosterone/cortisol ratio (T/CRT), might be predictive for both types of aggression.

SEROTONIN LEVEL

South-Africa` monkeys

Serotonin level is higher for the individuals with higher position in the society of the flock, but it is the most higher for the leader of the flock. When his position is changed and he is not a leader any more his serotonin level is decreased.

The same is with the lions.

The described case on page 163 support the idea of the scientists that aggression is higher between 21 and 35 years, and it correlates with the values of testosterone.

**AGE DISTRIBUTION OF
AGGRESSIVE ACTION**

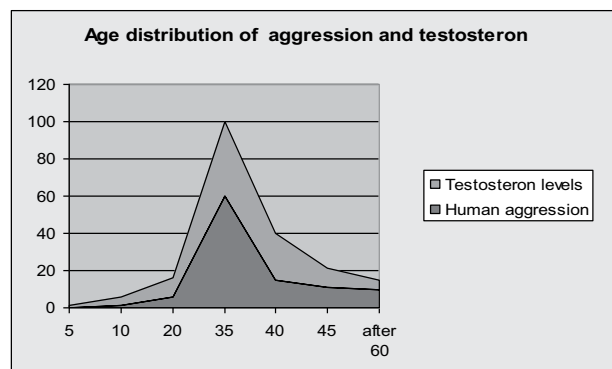
Before the age of 20 – 5.75.9%

21–35 – 58.5%,

36–40 – 15%,

41–45 – 10.35%

After 46 – about 10%

**Testosterone****Testosterone, cortisol and serotonin are as a key regulator of social aggression**

Hormones are chemicals that circulate in the body to affect cells and the nervous system, including the brain. Testosterone is a steroid hormone from the androgen group, which is most linked to the prenatal and postnatal development of the male gender and physique, which in turn has been linked on average to more physical aggression in many species. Thus, aggressive behavior tends to increase with testosterone. There are noticeable sex differences in aggression. Testosterone is present to a lesser extent in females, who may be more sensitive to its effects.

Animals studies indicated a link between aggression and the individual level of circulating testosterone. The seasonal variation of testosterone influenced the human's aggression. Castrated mice and rats exhibit lower levels of aggression. Castrated males as neonates secreted lower levels of testosterone, even when it was given additionally throughout their development.

Challenge hypothesis



Washington State
Song Sparrow

The challenge hypothesis outlines the dynamic relationship between plasma testosterone levels and aggression in mating contexts in many species. This hypothesis predicts that seasonal patterns in testosterone levels in a species are a function of mating system (monogamy versus polygamy), paternal care, and male-male aggression in seasonally breeders. This pattern between testosterone and aggression was first observed in seasonally breeding birds, such as the Song Sparrow, where testosterone levels rise in the breeding season to support basic reproductive functions. The hypothesis has been subsequently expanded and modified to predict relationships between testosterone and aggression in other species. For example, chimpanzees, which are continuous breeders, show significantly raised testosterone levels and aggressive male-male interactions when receptive and fertile females are present.

Effects on the nervous system

Another line of research has focused on the proximate effects of circulating testosterone on the nervous system, as mediated by local metabolism within the brain. Testosterone can be metabolized to 17 β -estradiol by the enzyme aromatase, or to 5- α -dihydrotestosterone (DHT) by 5 α -reductase.

Testosterone influences brain areas that control behavioral reactions

*Studies in animal models indicate that aggression is affected by several interconnected cortical and subcortical structures within the so-called **social behavior** network. A study involving lesions and electrical-chemical stimulation in rodents and cats revealed that such a neural network consists of the medial amygdala, medial hypothalamus and periaqueductal grey (PAG), and it positively modulates reactive aggression. In human subjects showed **that prefrontal-amygdala connectivity is modulated by endogenous testosterone during social emotional behavior.** In human studies, testosterone-aggression research has also focused on the role of the orbitofrontal cortex.*

Testosterone and sport

Studies of were raised shortly before their matches, as if in anticipation of the competition, and were dependent on the outcome of the event:

- **Testosterone levels of winners are high relative to those of losers. No specific response of testosterone levels to competition was observed in female athletes, although a mood difference was noted.**

In addition, some experiments had failed to find a relationship between testosterone levels and aggression in humans.

Glucocorticoids

These hormones are important in the regulation of aggression. Aggression is reduced if adult rats are injected with corticosterone. Glucocorticoids affected development of aggression and establishment of social hierarchies. Adult mice with low baseline levels of corticosterone are more likely to become dominant than the mice with high baseline corticosterone levels.

The reduction of cortisol' levels lowered fear and reduced stress response that could be associated with more aggression. So the aggression is associated with low cortisol levels while reactive aggression may be accompanied by elevated levels.

The HPA axis is related to the general fight-or-flight response or acute stress reaction, and the role of catecholamines such as epinephrine, popularly known as adrenaline.

Pheromones

In many animals, aggression can be linked to pheromones released between nonspecifics. In mice, major urinary proteins (Mups) have been demonstrated to promote innate aggressive behavior in males. Mups activate olfactory sensory neurons in the vomeronasal organ (VNO), a subsystem of the nose known to detect pheromones via specific sensory receptors, of mice and rats. Pheromones have also been identified in fruit flies, detected by neurons in the antenna, that send a message to the brain eliciting aggression; ***it has been noted that aggression pheromones have not been identified in humans.***

Brain structure and aggression

J. Cromer (2012) made a description of “The Dark Side of Personality Change”, after brain injury. The world in the brain injury is taboo. “After Brain Injury: Learning to Love a Stranger, I shared my experience of building a new relationship and marriage with my husband Alan. Alan suffered a severe anoxic brain injury following a massive heart attack and cardiac arrest”. He showed his pre-injury personality of love, kindness, curiosity, and humor. The author described some of the used strategies that could help Alan to control his anxiety, anger, and unpredictable behavior. Brain damage some time changed the personality and damage specific areas of the brain as: ***frontal and temporal lobes, amigdala, and hippocampus might leave the survivor vulnerable to agitation, emotions, memory, verbal attacks, physical aggression, and decreased the impulse control.*** His executive functions were decreased. He had problems with memory, his skill abilities, to plan his business, to make decisions, and to control his behavior, his aggression. He worked hard for his self-control in order to prevent from aggressive impulses, to communicate like normal person.

But from time to time Alan's darker side escalated.

Brain injury could provoke into various psychiatric problems as depression, severe anxiety, substance abuse, obsessive compulsive disorder, post-traumatic stress disorder. Brain injury ***disrupted the production and the function of neurotransmitters that influenced mood and regulated the thought.***

T. Gregg, A. Siegel – Brain structures and neurotransmitters regulating aggression in cats: implications for human aggression – The medial hypothalamus and midbrain periaqueductal gray are the most important structures (the hippocampus, amygdala) mediating defensive rage behavior and the perifornical lateral hypothalamus clearly mediates predatory attack behavior.

How did the personality change?

- **Disrupted trust;**
- **Personal integrity;**
- **Emotional pain;**
- **Unresolved conflicts;**
- **Decreased intimacy;**
- **Risk of injury** – when he becomes angry he could not control his strength and he could be dangerous, and the relatives had to know how to prevent with such incidents.

Some authors stressed on the **correlation between low IQ (Intelligence) and aggression**. By the use of modern technique of MRI they found out that **amygdala** is important for aggression in patients with temporal epilepsy (**Van Elst et al**).

Fronto-limbic brain structures in suicidal and non-suicidal female patients with major depressive disorder is an important structure in suicidal female patients.

According to some scientists **glucocorticoid dysfunction induced abnormal aggression in rats**: also fear- and stress-related structures. Thus, the main consequence of the experimentally induced glucocorticoid hypofunction was an excessive activation of stress- and fear-related structures, without major changes in aggression-related brain circuits. Noteworthy ... **J Halász et al. (2002)**

Regulation of aggression in cats is controlled by some **brain structures and neurotransmitters** (Nelson and Chiavegatto; 2001);

Behavior in animal's aggression depends on 5-HT and 5-HIAA and receptor subtypes (Miczek, KA, J Mos, B Olivier ,1988);

Aggression is connected with another brain structures as: 5-HT neuronal systems evolved along medial brain structures and correlate cerebrospinal fluid (CSF)5-hydroxyindoleacetic acid (5-HIAA)

Physiology

Brain pathways – many researchers pay attention on the brain in order to explain aggression. Neocortical and subcortical structures play an important role in controlling aggressive behavior. For cats, rats and monkeys very important are hypothalamus, periaqueductal gray of the midbrain. Electrical stimulation of the hypothalamus caused aggressive behavior, but the levels of aggression could be controlled hypothalamus.

Stimulation of the **amygdala** increased aggressive behavior in hamsters, while lesions of an evolutionarily homologous area in the lizard greatly reduce competitive drive and aggression (Bauman et al. 2006). In rhesus monkeys, neonatal **lesions in the amygdala or hippocampus** reduced expression of social dominance, related to the regulation of aggression and fear.

The role of the chemicals

- **Serotonin** – plays an important role in causing impulsivity and aggression. Low levels of serotonin transmission explained a vulnerability to impulsiveness, potential aggression;
- **Norepinephrine**, also may influence aggression responses both directly and indirectly through the hormonal system;
- **The sympathetic nervous system and the brain & GABA** have a linear relationship with aggression and show a positive correlation with aggression.

Genetics

The genetic predisposition for aggression is still discussed. In humans, there is good evidence that the basic human neural architecture underpinning the potential for flexible aggressive responses is influenced by genes as well as environment. Such examinations depended on self-report or observation by others including parents, which complicates interpretation of the results. The few laboratory-based analyses have not found significant amounts of individual variations in aggression explicable by genetic variation in the human population. Furthermore, linkage and association studies that seek to identify specific genes, for example that influence neurotransmitter or hormone levels, have generally resulted in contradictory findings characterized by failed attempts at replication. We must not neglect the influence of the environment.

The press, newspapers, TV-films, Video-films

Some psychologists believed that aggression may be partially learned by watching and imitating the behavior of others – family persons, video games and youth violence or bullying. One study suggested there is a *effect of violent video games, aggression could be found with television. It is supported by R. Stamatov, 2000.*

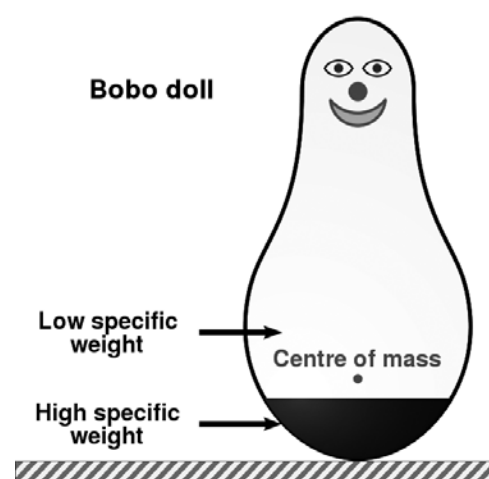
Fear (survival)-induced pre-emptive aggression

According to philosopher and neuroscientist it is a human reaction of injustice, and its root are connected with unthinkable brutality. It could appear unnoticed and under control. Some authors argued that human strong tendency towards “Fear (survival)-induced pre-emptive aggression” means that situations of anarchy or near anarchy should be prevented at all. This is because anarchy provoked fear, which activated aggression.

Child's aggression

Some young children use aggressive behavior, such as hitting or biting, as a form of communication. Aggressive behavior can be connected with learning as a skill deficit, conflicts, and communication skills. By school age, children should learn more socially forms of communicating such as expressing themselves through verbal or written language; if they have not, this behavior may signify a disability or developmental delay (R. Stamatov, 2000).

The **Bobo doll experiment** (Bandura, Ross & Ross 1961) was conducted by Albert Bandura in 1961. Bandura found that children exposed to an aggressive adult model acted more aggressively than those who were exposed to a nonaggressive adult model. This experiment suggests that anyone who comes in contact with and interacts with children can have an impact on the way they react and handle situations. A Bobo doll is an inflatable toy that is about 5 feet tall and is usually made of a soft durable vinyl or plastic. The Bobo doll was most often painted to look like a clown. The doll was designed to be bottom-weighted so that if it were hit, it would fall over then immediately lift back up to a standing position. It first came on the market in the 1960s.



The first measure recorded was based on physical aggression such as punching, kicking, sitting on the Bobo doll, hitting it with a mallet, and tossing it around the room. Verbal aggression was the second measure recorded. The judges counted each time the children imitated the aggressive adult model and recorded their results.

Neuroimaging measures: CT, SPECT, PET and MRI

Some scientists established changes in psychiatric patients with aggressive behavior as abnormalities in frontal and temporal brain region. Christopher J Patrick (2008) – slow EEG-waves activity, reduced brain potential response and indications from structural and functional neuroimaging studies of dysfunction in frontocortical and limbic brain regions that mediate emotional processing and regulation.

With regard to the amygdala and hippocampus, found evidence of abnormal asymmetry (i.e. decreased functioning on the left side and increased functioning on the right one) in both these structures in murderers compared with controls. In a PET study of serotonin-binding potential, reported a significant negative relationship between reported lifetime aggression and binding in brain regions including the amygdala (but not hippocampus).

Neurobiological model of impulsive aggression

The neurobiological model of aggressive behaviour is viewed as arising from dysfunction in a set of interrelated brain structures that function to regulate emotional processing and reactivity, including the prefrontal cortex (in particular, its orbitofrontal and ventromedial subdivisions), the anterior cingulate cortex and subcortical-limbic structures (in particular, the amygdala, hippocampus and hypothalamus).

Psychological theories

The experiment of Behavior niche

The scientists tried to explain the aggression by the use of many experiments with animals. One of these methods was s. c. “**Behavior niche**”.

<p><i>The scientists putted Norwegian rats in a very luxury environment. The animals had sufficient materials to build their nests/houses and enough food. The only that they had not was the space. At the beginning their reproduction was unlimited. When the number of the rats increased too much and the space was the same their reproduction decreased – dead-born and malformations among newborn increased, the percentage of dead germ cells increased, sexual activity reduced, the spermatozoa decreased, cannibalism appeared, carcinoma of breast, ovaries and testes increased, the female-rats did not build their nests and their menstrual cycle was reduced.</i></p>	<p>Experiment with Norwegian rats (Behavior niche)</p> <p>Food – sufficient. Materials to build their nests/house – sufficient. Neighbourhood (surrounding) – perfect Population</p> <p>Results First – their number increased Behavior niche – not place – malformations and dead-born ↗ – cannibalism, – the number of newborn ↓ – spermatozoa (germ cells) ↓ – menstrual cycle – reduced; ↓ – sexual activity – reduced; Carcinoma of breast, ovaries, testis. Female-rats did not build the nest.</p>
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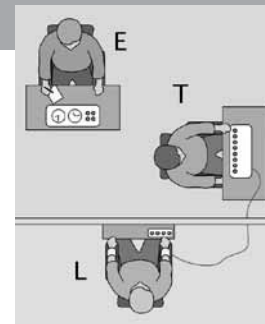
This experience shows the importance of the environment for aggression. It explains why aggression is so much spread in the capital cities

Many other psychological experiments were done by psychologists in order to understand how good persons could become cruel, and most of them stressed on the environment situation that is combined with various psychological moments. A special attention must be paid on s.c. Zimbardo's experiments and Milgram's experiments.

MILGRAMM'S EXPERIMENT (1961)

The experiment is to understand how good and peaceful persons can become so aggressive, cruel and terrible as German persons – to follow Hitler. In this experiment were included persons who had to play the role of teachers (T), others were learners (L), students: Teachers (T) had the right to punish the students for each wrong answer.

- the T had electro-shock generation and he could increase the strength up to 600 Voltage. The electro-shock generator, which played pre-recorded sounds for each shock level.
- the L, were well educated artists.



Milgram experiment – Wikipedia, the free Encyclopedia.htm

- Milgram's testing suggested that it could have been that the millions of accomplices were merely following others, behind violating/disturbing their deepest moral beliefs.
- The experiment has been repeated many times, with consistent results within societies, but different percentages across the globe.
- For some scientists the experiment is unethical, as it is "harmful because it may cause permanent psychological damage and cause people to be less trusting in the future".

ZIMBARDO WROTE: "EVERYBODY FROM US HAS 3 WAYS OF BEHAVIOR TO CHOOSE"

1. To be passive and nothing to do;
2. To become a cruel man;
3. To become a hero.

"But we must admire and be proud with the ordinary people from the everyday life, where the ordinary persons do unusually/ notably things".

LUCIFER EFFECT
ZIMBARDO PHILIP.htm

"The Lucifer Effect, Understanding How Good People Turn Evil" – Phillip Zimbardo, 1971

An experiment for 20 days

Jailer (supervisor, inspector) in a prison – the jailer became so cruel, so aggressive they didn't permit the prisoners to sleep to eat a good food, to go contact with s. o., they punished the prisoners without any reason and s. o.; Prisoners – became very nervous, very depressed, they had suicide ideas, their appetite and their sleep were disturbed. The experiment had to be stopped on the 6th day, as it was dangerous for the participations that had to be in the role of prisoners.

Scot – reserved officer

Mr Scot presented as a reserve officer and began to ring up the telephones of different persons that were working in restaurants for fast food in USA. He ordered them to do some cruel things that is equal to terrible crime. He knew very well the language of the officer from this district and gave different instructions to the members of the office.

In New Hampshire he accused a new public service that steal portfolio from one of their client. His instructions were the president to please this new public service to follow him in his office, to lock the door and to order her to undress as the portfolio was hidden in her underclothes. When the President did not find anything. He was ashamed by his absurd behavior.

Another manageress was convinced to undress in front of her client, who was abused in sexual crime. The reserve Officer Scot explained her that in the big MALL there were civil policemen behind him. When she undressed this sexual maniac will jump on her and so the civil policemen will catch him just on the crime. So she will help the policemen to catch this sexual maniac. She followed his instructions, undressed her clothes, but she was astonished that all persons around he begin to smile, her client leave the office when she undressed and there were no civil policemen. It was a telephone joke.

1. STOCKHOLM' SYNDROME (SS)

***„The world is a dangerous place,
not for these who make terrible things,
but for these who see them
and do not do anything.”
Albert Einstein***

Stockholm's syndrome is connected with the name of Stockholm robbery (1973)

SS is a mechanism for survive. The males, the females and children are not lunatic, this is an way how to fight for their life. According to psychologists one of the way to survive is to support to their occupier.

On 23 August 1973 Jan-Erik "Janne" escaped from a prison & went into a bank in the central part of Stockholm and attempted to hold up the bank

Swedish police were called immediately, but he opened fire and harmed one of the policeman. He sit in a chair and sing something and after that sing "Lonesome Cowboy". Then he took 4 persons as hostages. He wanted his friend Clark to be brought there along with 3 million Swedish Kronor ((\$730,000 US), 2 guns, helmets (headpiece, grand slam), and a fast car. He was a recidivist who had committed several robbers and a very aggressive person. His 1st committed was at the age of 16.

- Kristin Emark – one of the hostages did not help the policemen;
- He had the permission by the government to make a communication with the police negotiators.
- Kristin said that she felt safe, sure and very well with him.
- The police tried to do everything to help the hostages.
- The 2 prisoners barricaded all main entrances. The policemen agreed to give them a car to escape but without the hostages.

The SS is a psychological phenomenon in which hostages express empathy & sympathy & have positive feelings toward their captors, some times to the point of defending them.

The FBI' s Hostage Barricade Database System shows that 27% of victims the evidence of SS SS can be as a form of traumatic bonding which does not necessary require a hostage scenario, but which describes a "strong emotional ties that develop between 2 persons where one person intermittently harasses, beats, threatens, abuses or intimidates the others"

DIAGNOSTIC CRITERIES OF SS hostages/usurpers

The hostages have the feeling of sympathy and confidence toward the usurper.

The hostages develop positive feeling towards the usurpers.

The hostages are hostility towards criminal organism that would like to help them.

SS was forgotten till 23 of August, 2006. The story with Natasha Kampusch is the reasons for many discussions about SS.

Natasha was 10 years old girl, when she was captured by Wolfgang Proclopil, 44 years old man. She was closed in a very small room (long 270 centimetre, and wide 180) under his garage. The door was 50/50). There was a bed, a ventilator, a shower-bath, a toilet water. Near 8 years the girl spend in this room, without any contacts with other persons. His neighbours did not understand for the girl. She never appeared in the yard. He ordered her to return to him with the words: "My master". She was learned by him to read. Some time she had the ability to listen radio or to see TV. From time to time he walked with her in the town, but he said to her that if she escaped he will kill himself. When she succeeded to run away and went to the police, he killed himself the same day.

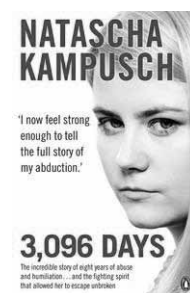
Natascha Kampusch, She was held in a secret cellar by her kidnapper Wolfgang Priklopil for 8 years, until she escaped on 23 of August 2006. The media attention later led to her giving select interviews, writing an autobiography (3,096 Days, published September 2010) and also signing a contract with Austrian channel Plus 4 for her own talk show, which had its premiere on 1 June 2008, but only ran for three episodes.



born 17.02.1988 in Austria

At the beginning nobody belief that it was really Natasha. They saw a surgical sign of her year, when she was 5 years old. DRA expertise proved her personality.

What happens with Natasha. She needed a serious psychological support. When she recovered after this serious and chronic stress she wrote a book named "Natasha Kampusch, 3096 days".



The book

HATAJIA-ΦΙΛΙΠΠΗ.htm

Family Stockholm Syndrome

SS is not so rare phenomenon. We can recognize it on the working place, among our friend, and it could be spread among spouses too. One of them is despotic and the other is suppressed.

Typical example for this is the famous painter Pablo Picasso. He had 7 wives, 7 muse of love. After their parting all of them turned to alcohol, narcotics, stimulants, or became insane or made suicide, with the exception of his 6th wife - Françoise Gilot. She is also known as the lover and artistic Pablo Picasso from 1944 to 1953, and the mother of his two children. She was the only wife in his life that could recover after their living together and to continue to live up. Learning her story by her famous book everybody wondered how this highly intelligent girl permitted to sacrifice 10 years of her youth and to become a victim of s. c. SS. Really her intelligence helped her to continue to live as a normal person after their parting.

Françoise Gilot – her early life was privileged but lonely. She was the only child of haughtiness bourgeois, highly intellectual Parisian parents. Her father was an agronomist who developed several chemical firms; her mother was a ceramic artist – she decided at the age of five to be an artist, but “with a big A.” At the age of 17 she attended the Sorbonne and the British Institute in Paris and had baccalaureate degree in Philosophy. She received her English Literature degree from Cambridge University. At the age of 19 she abandoned her studies in law to devote her life to art.

Francoise Gilot at the age of 21 met Picasso. He was 61. His mistress Dora Maar was devastated to learn that Picasso was replacing her with the much younger artist. During their life together Gilot was often harassed on the streets of Paris by Picasso's legal wife. They never married, even they lived almost 10 years together. He was very cruel, once he putted 3 scorpions in her bed, sometime he gone out his cigarette in her breast. He worked in the night, and during the day he returned home to sleep. Every morning she had to go by foot to his atelier that was 2 km. far from their castle. She had to clean it and to prepare his stove and the canvas. Even in this period of his life he was a very rich man, he did not give any money to her for everyday necessities. She had to care alone for their 2 little children. She played the role of a maid-servant not only at home, but when he had a party. Often among the guests were some of his mistresses. She was very proud, and she had to sell some of her paintings to cover her household needs. *Eleven years after their separation Gilot wrote the book in English "Life with Picasso". This book was sold over 1 million copies. Gilot was the only wife that could have a normal life after the separation. Picasso was the great abuser, the great manipulator. Focus always seemed to place on the psychological aspects of his art, his life and their relationship.*



Francoise Gilot
(26.11.1921)

"Picasso was a great user of materials and situations for his art, and user of people for his life. His work has a cruelty his life shares. And it seems to me that that cruelty means his work in the deepest sense does not reach the highest level, the level where Rembrandt and Raphael are. And this because the great draughtsman is not a great reader of the human soul. He is rather a twenty-second technical man a supreme master of means who knows how to put the machine in himself to use to cut up and recombine the world for his purposes"



The wife flower

In her book Gilot described him in terms of nearly every key ***symptom of psychopathy***: His total absence of empathy and love; his lack of remorse and facile rationalizations for hurting others; a lust for seduction as a form of exercising power over women; duplicity and manipulation as a way of life; the pattern of idealize, devaluate and discard in every romantic relationship he had; the underlying desire for control; an unshakable narcissism and the drive to do evil by damaging the lives of the women who became his partners. **Gilot described Picasso's pathological behavior in greater detail.**

An egomaniac, a moral monster – Picasso was, who showed absolutely no consideration whatever for those closest to him. The people who had helped him in the past do not count for him. The people who were involved with him in the present were manipulated by him for his own purposes. He was tremendously ambitious, greedy financially, stingy, sexually driven without being interested in the feelings of the women he was with. When s.b. read the various Picasso's biographies, he could notice that each of his partners were radically different from each other. Picasso couldn't have possibly been identical to all of them. He only pretended to be like them in order to hook them emotionally. Then, after he lost interest in each one, he no longer mirrored her particular personality traits and interests. With Olga, the Russian socialite and ballerina, the subversive and misanthropic artist transformed into a social butterfly. For several years, he joined her at the parties of prominent politicians and aristocrats. Until, that is, he tired of her after having met Marie-Thérèse Walter. She was a 17 year-old girl who made the middle-aged Picasso feel young again. With her, he acted like a rebellious, sex-starved and in some ways sadistic adolescent. That role fit, since Marie-Thérèse was not only very young, but also sensual and submissive. With Dora Maar, his eccentric, destructive, unstable and artistic friend who was a Surrealist photographer. He engaged in stormy fights, intellectual conversations, joint artistic projects, and hearted aesthetic debates. **Gilot's relationship with Picasso** was very important to her. **He became not only her lover, but her life partner, her artistic mentor, her best friend and the father of her 2 children.** Their relationship was not filled with mutual carrying and respect. *By the end of their love affair, the pain Picasso caused her far outweighed the initial pleasure she experienced with him.* She was his "narcissistic supply," like all the other women in his life. *She gave him all the love and support she could while he gives her nothing but his artistic talent in return.* It drains her strength and emotional energy. She believed, as do many women who get involved with dangerous men, *that she can improve his bad character through her good example and her love.* But she discovered that love can't change everyone. Picasso attempts to isolate her from others in order to control her more completely.

Narcissism and no signs of humanity: "One day we were looking at the dust dancing in a ray of sunlight that slanted in through one of the high windows. He said to me, 'Nobody has any real importance for me. As far as I'm concerned, other people are like those little grains of dust floating in the sunlight. It takes only a push of the broom and out they go'".

Callousness, egoism, egocentrism: if any woman dares to leave him, he harbors a grudge against her for the rest of his life. Gilot was the only woman to stand up for herself and eventually (after years of suffering and self-sacrifice) leaved him. *“You should wear a black dress right down to the ground” – he had told me one afternoon, “with a handkerchief over your head so that no one will see your face. In that way you’ll belong even less to others. They won’t even have you with their eyes.” He had this idea that if s.o. is precious to you, you must keep her for yourself alone, because all the accidental contacts she might have with the outside world would somehow tarnish her and, to a degree, spoil her for you”.*

Aggressive: – *“He grabbed me and pushed me into one of the semicircular setbacks on the bridge. He held me against the parapet and twisted me around so that I was looking down into the water. “How would you like it?” he said. I told him to go ahead if he wanted to - it was spring now and I was a good swimmer. Finally he let go of me and I ran down into the subway, leaving him behind me on the bridge”. Picasso regarded his partners as their personal property. He said to her: “I prefer to see a woman die, any day, than see her happy with someone else”. Every time I change wives I should burn the last one. That way I’d be rid of them. You kill the wife and wipe out the past she represents” She doesn’t see herself as only his shadow.*

Isolation from her relatives, manipulation: He asks Gilot to leave her grandmother, who needs her attention and care. He asserts his power over his girlfriend and tests her loyalty to him. **Unhealthy control originates in a desire to dominate another, either through words or actions designed to both charm and harm – to captivate while simultaneously damaging the emotionally captured. It is this pairing of charm with harm that is the hallmark of Controller manipulations. Picasso tries to convince Gilot that abandoning her grandmother isn’t really personal.** Since even physical violence fails to intimidate her, Picasso relies upon a purely emotional – and highly manipulative – appeal: whom do you love more? *He asks her to choose. Your grandmother or me?* He then turns the tables on his girlfriend and makes her feel guilty for not carrying enough about him to sacrifice her relationship with her grandmother for him. *“Don’t I count in your life?”* he demands. *“Is this all a game for you? Are you so insensitive as that? She was too far-gone, under her lover’s hypnotic control and escaped the relationship unharmed. “I suppose I should have cooled off towards Pablo. But I didn’t. I was bothered by what had happened and its implications, but my feeling for him had deepened to the point where it was stronger than any of the warning signals”. As I thought about it, I realized that in Pablo’s life things went on just about the way they do in a bullfight. **Pablo was the toreador and he waved the red flag, the muleta.***

Bluebeard complex: Pablo’s many stories with his wives and about Olga and Marie-Thérèse and Dora Maar, speaks that he had a kind of **Bluebeard complex** that made him want to cut off the heads of all the women he had collected in his little private museum. He no longer had any feeling for this one or that one, he could not bear the idea that any of his women should ever again have a life of her own.

Feeling confused? He tried to put s.o in the poor psychopath’s shoes! If there’s nobody to gossip about, nobody to complain about, nobody to deceive, nobody to conquer from another man, nobody to cheat on, nobody to hurt, nobody to malign, then sexual relationships lose their spice. **Romantic partners become as familiar as old shoes.** Normal life, believing in moral standards, having genuine emotions and lasting relationships is really boring from a psychopath’s perspective.

Picasso’s anaesthesia, he had no emotional feelings: when Gilot understood the sad reality that he is not capable of loving her, she became depressed. Even when Picasso saw the suffering Gilot, he thought about how he can use her sorrowful expression for his paintings. *“I cried a good bit of the time,”* Gilot recalls. *“Pablo found it very stimulating. “Your face is wonderful today,”* He told me while he was drawing me. *“It was a very grave kind of face.”* I told him it wasn’t at all a grave face. It was a sad face”. Picasso did not care for Gilot’s pain, but also he criticizes her for having lost weight... *You look like a broom.”* While his cruelty towards the woman he supposedly loves is nothing short of astonishing, when it came to his own suffering, with characteristic double standards.

Life after Picasso has been a continuing adventure for Françoise – two marriages (the second a 25-year union with Jonas Salk, another twentieth-century genius, who developed the polio vaccine), a third child, many friendships, two best-selling books, and a successful career as an artist who continues, at the age of 90, to paint every day. Although he had influenced her work as a cubist painter, she developed her own style.

Most of his methods to conquer and manipulate the women are almost the same as are described in Stockholm Syndrome. Gilot’s story shows that really she voluntarily was putted under to be victim of her love. Some psychologists put the question, that they doesn’t know the story by Picasso’s point of view.

Religion and Stockholm' Syndrome

Randy Stone was a religious man, and owned an insurance business along with his wife of nearly 20-years, Teresa. They had been childhood sweethearts, but lost touch when Randy joined the marines only to marry when he returned from his service. They had a good life, two children and good business. They were a good normal family. They were members of Baptist church. But Teresa thought that her life was too monotonous. She was fed up of her family engagements. She wanted some change. Everything was well, till the moment when the new Pastor David came in their church. His sermons were very emotional, and everybody liked them. Teresa was enraptured too. She could never imagine that he could fall in love with her. One day he pleased her to help him to bring several books in his room. There he unconscious touched her hand. For the first time from many years she had an unusual feeling of passion. These moments happened several times.



Teresa Stone and Randy Stone

One day he made her a declaration of love. And after that she had a passionate sex. She could not imagine to do sex with her pastor in his room and the Christ's icon was hanged on the wall over the bed. This connection continued more than 10 years and their contacts were almost every day. She avoided sex with her husband, because she felt very tired to make sex with both of them. When she understood that was pregnant her contacts with her husband became more frequent, because the Pastor wanted their child to be born. By good luck she made a spontaneous abortion (mis-carriage).



Pastor David Love

After this story the pastor gave her a golden wedding ring and promised to marry her. The marriage was not possible because they were married. He planned the murder of his wife and her husband. Their plan was perfectly well done.

She was very happy that she would be free from her spouse. Teresa Stone dreamed of running away with her pastor lover, armed with as much as \$800,000 in life insurance payouts she imagined they would get after they killed her former Marine husband.

On the 31.03.2010 Randy Stone was killed by Pastor David with his own gun. They had a very strong alibi. Nobody knew for their love. About 7 months the police could not find the murderer. And in shocking evidence presented during the trial of David Love, the jury heard how killing Randy Stone was only the first part of the jigsaw and that Love wanted to murder his wife too. Teresa Stone was serving eight years in prison for conspiring to murder Randy Stone, the father of her two children – and the man she called “Brother Love” is serving a life sentence for shooting his best friend with his own gun at his office in Independence, Missouri.

This sparked investigators into action and it was revealed that Teresa Stone had in fact been involved in a 10-year affair with Love.

Teresa Stone, 40, pleaded guilty to conspiracy to commit murder in the March 2010 shooting death of Randy Stone of Independence. Teresa, was indicted for conspiracy to commit murder, and also took a plea deal to have charges reduced, but had to acknowledge her role in the crime. She was sentenced to eight years in prison.

Pastor David Love, 51, was charged in 2011 with killing insurance agent and his best friend Randy Stone. In November, 2011, Love took a plea deal for second degree murder. He is currently serving a life sentence and will only be eligible for parole in 2036.

Later it was understood that Teresa was not the only David's lovely affair. In his behaviour one could find elements of SS. From this story is obvious that he was not only a good lover, but a perfect manipulator.

Psychophysiological mechanisms of SS

There are some common things between the main phases of SS and General Adaptation Syndrome of Selye. They have 3 main phases (see the figures). It is so because SS is a very strong stress when the victim is kidnap and after that maltreated by the aggressor.

PHASES OF STOCKHOLM SYNDROM:

- Initial phase – alarm phase, physiological model of sympathetic activity.
- Phase of resistance, defence – reduction of its vegetative activity.
- Exhaustion phase – the anxiety is increased

Selye's General Adaptation Syndrome

Phase 1 Alarm	Phase 2 Stage of resistance	Phase 3 Stage of exhaustion
shock	Normal level of resistance to stress	

CONDITIONS THAT COULD DEVELOP STOCKHOLM' SYNDROME

1. Aggressor must have explanations of his action.
2. In SS when the hostages are away from the aggressor the symptoms are reduced quickly, whereas in psychoses is not so – the symptoms slowly become deeper.
3. SS deeply disturbed the life of hostages and their relatives.
4. The personality of the aggressor – paranoid personality.
5. The personality of the victim – dependent personality.

PHASES OF THE BEHAVIOR OF THE VICTIM

- UNLOCKED PHASE – the victim included primitive instincts.
- PREORIENTAION/REORIENTED PHASE – emergency exist, variant.
- PHASE OF COPY MODEL – LOOKS, SEEKS OF NEW MODEL.
- ADAPTATION PHASE – The victim takes everything that could help her to survive.

FREUD Hypothesis of SS

One commonly used hypothesis to explain the effect of SS is based on Freudian theory.

- It suggest that the bonding is the individual's response to trauma in becoming a victim.
- Identifying with aggressor is one way that EGO defends itself. When a victim believes the same values as the aggressor, they no longer become a threat (there is no danger any more).

PSYCHOANALYTICAL DEFENSE MECHANISMS

Repression;
Narcissus;
Denial;
Projection;
Displacement;
Regression;
Altruism.

(see page 124)

An extreme example of this is the Stockholm Syndrome where hostages identify with the terrorists. E.g. Patty Hearst and the Symbionese Liberation Army. Patty was abused and raped by her captors, yet she joined their movement and even took part in one of their bank robberies. At her trial she was acquitted because she was a victim suffering from SS.

2. Serial killers (SK)

Definition: a serial killer is a person who has murdered three or more people over a period of more than a month, with down time (a “cooling off period”) between each of the murders. Some sources, such as the FBI, disregard the “three or more” criterion and define the term as “a series of two or more murders, committed as separate events, usually, but not always, by one offender acting alone” or, including the vital characteristics, a minimum of two murders.

The motivation – it is usually based on psychological gratification. Most SK involved sexual contact with the victim, anger, financial gain, and attention seeking.

Some common characteristic of SK

1. They may exhibit varying degree of mental disorders (schizophrenia, depression) or psychopathy; Boston’ strangle (somnambulism, in full-moon strangulate young girls with their stockings).
2. Abused – emotionally, physically, sexually (by a family member);
3. SK may be more likely to engage in fetishism, necrophilia, paraphilias;
4. Social isolation;
5. Most SK are with low-average IQ;
6. SK are very attractive, charming, with good communications, well dressed, sympathetic persons and nobody could recognize them.

Problems in early childhood;

Psychic of the Serial Killers

Through out of the society, –

Isolation – Degradation – Amok – 1-st murder – series of murders – suicide – execution

Edmend Kemper said:

“I had the necessity to kill s. o.

When I was a little child I made execution to my sister’s dolls.

When I was a little child I wished to kiss my teacher, but first I had to kill her and after that to kiss her.”

SK and their childhood

Terrible mothers – most of them are distant, cool, and do not pay any attention to their children. Some of them are prostitutions, callgirls, streetwalkers.

Terrible fathers – prisoners, drugadict, personality disorders.
• Albert Decalvo – his father was alcoholic and sold out him.

Medical professionals

Some people with a pathological interest in the power of life and death tend to be attracted to medical professions or acquiring such a job. These kinds of killers are sometimes referred to as “angels of death” or angels of mercy. Medical professionals kill their patients for money, for a sense of sadistic pleasure, for a belief that they are “easing” the patient’s pain, or simply “because they can”. Such killer was the **nurse Jane Toppan**, who admitted during her murder trial that she was sexually aroused by death. She would administer a drug mixture to patients she chose as her victims, stayed at their bed with them and hold them close to her body as they died.

The Doctor, Murderer (1946–2004)

When his mother was diagnosed with terminal lung cancer, he willingly oversaw her care as she declined, fascinated by the positive effect that the administration of morphine had on her suffering, until she succumbed to the disease on June 21, 1963. Devastated by her death, he was determined to go to medical school.



Harold Shipman

Dr. Death”, “The Angel Of Death”.

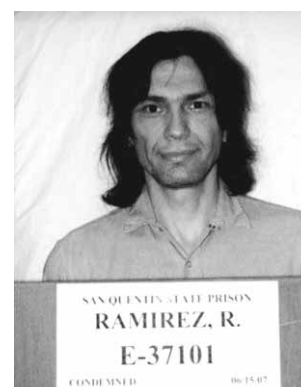
He was born in England in 1946, serial killer Harold Shipman attended Leeds School of Medicine and began working as a physician in 1970. By 1974 he was a father of two children and had joined a medical practice in Todmorden, Yorkshire, where he initially thrived as a family practitioner, before allegedly becoming addicted to the pain killer Pethidine. He forget prescriptions for large amounts of the drug, and he was forced to leave the practice when caught by his medical colleagues in 1975, at which time he entered a drug rehabilitate program. He was sure that he helped them and saved them from their pains in terminal stage.

In the subsequent inquiry he received a small fine and a conviction for forgery. Between then and his arrest in 1998, he killed at least 215 and possibly as many as 260 of his patients, injecting them with lethal doses of painkillers.

About 80% of his victims were women. His youngest victim was a 41-year-old man. Much of Britain’s legal structure concerning health care and medicine was reviewed and modified as a direct and indirect result of Shipman’s crimes. Shipman is the only British doctor who has been found guilty of murdering his patients. Shipman died on 13 January 2004, after hanging himself in his cell at Wakefield Prison in West Yorkshire.

Richard Ramirez, known as the “**Night Stalker**” – he used an wide variety of weapons, including handgun, knives, a machete, a tire iron, and a hammer. Ramirez, who was an avowed **Satanist**, never expressed any remorse for his crime.

His father was a policeman and very cruel with his child. As a child he often escaped from his father’s violent and went to sleep in the graveyard. As a child he was influenced by his cousin Mike. He was presented when Mike shot his wife in the face with a gun during a domestic argument. After this story Richard became sad, later began to use LSD, and had special interest in Satanism. He leaved the school and his home and began to kill persons in various age – children, adult, old persons. Before killing them he ordered them to pray to Satan, not to God. He wanted to go to the Hell and to take the place of Satan. Ramirez died of complications from B-cell lymphoma while awaiting execution on California’s death row.



John Wayne Gacy – organized serial killers. In general, the IQ of organized serial killers tend to be near normal range, with a mean of 94.1. Organized nonsocial offenders tend to be on the higher end of the average, with a mean IQ of 98.5. He killed 34 males and their dead bodies he burrowed under his house. He was executed in May 1994.

Ted Bundy in custody, Florida, July 1978 (State Archives of Florida) – he killed 100 young women. He was executed in 1989. Before he was executed, serial killer Ted Bundy stated media violence and pornography had stimulated and increased his need to commit homicide, although this statement was made during last-ditch efforts to appeal his death sentence. However, correlation is not causation (a disturbed physiological disposition, psychosis, lack of socialization, or aggressiveness may contribute to both fantasy creation and serial killing without fantasy creation generally contributing to serial killing for instance).

The Monster of Andes Mountains Pedro Lopes from Columbia murdered 300 persons. His childhood was very heavy. His mother was a prostitute and he was maltreated by her. As a little child he was violated. When he was in a prison he also was violated.

Female serial killers

Female serial killers are rare compared to their male counterparts. Some sources suggest that female serial killers represented less than one in every six known serial murderers in the U.S. between 1800 and 2004 (64 females from a total of 416 known offenders), or that around 15% of U.S. serial killers have been women, with a collective number of victims between 427 and 612 – “the Justice Department indicated 36 female serial killers have been active over the course of the last century.”



Highway prostitute
Aileen Wuornos killed
seven men in Florida
between 1989-90

The two sisters Delfina and Maria de Hesus Gonsales, had murdered 80 females and 11 males. They had their own house of prostitution. They were convicted of 40 years. There were created several categories of female serial killers. Some authors used the classifications of a *black widow*, *the angel of death*, *the sexual predator*, *revenge*, *profit or a crime*, *the team killer*. In using these categories, they observed that most women fell into the categories of a black widow or a team killer. Although motivations for female serial killers can include attention seeking, addiction, or the result of psychopathological behavioral factors, female serial killers are commonly categorized as murdering men for material gain, usually being emotionally close to their victims, and generally needing to have a relationship with the victim, hence the traditional cultural image of the “black widow.”

A forensic psychiatrist was describing murderer, what defines a “black widow” type. In simple terms, he described it as a woman who kills two or more husbands or lovers for material gain. Though Castor was not officially defined as a serial killer, it is likely that she would have killed again. The sexual or sadistic motives among the females-killers were rare.

The Theories Biological and sociological

1. Some theorists believed the reasons were biological, suggesting serial killers were born, not made, and that their violent behavior was a result of abnormal brain activity. Holmes and Holmes et al. believed that “until a reliable sample could be obtained and tested, there was no scientific statement that could be made concerning the exact role of biology as a determining factor of a serial killer personality.
2. “Looking glass self” – theory (Charles Cooley) and “Actual social identity” theories (Ervin Goffman) – suggest a social event, or series of events in childhood or adolescens.
3. “Social Process Theory” – offenders may turn to crime due to peer pressure, family, and friends. Criminal behavior is a process of interaction with social institutions, in which everyone has the potential for criminal behavior. Family structure and identity could also be a cause leading to serial murder traits.

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VIII. SUICIDE

Suicide is an important medical and social problem of modern society. There are various discussions about the appropriateness of the term commit and its use to describe suicide. **Suicide** – Latin *suicidium*, from *sui caedere*, “to kill oneself” is the act of causing one’s own death.

DEFINITION – suicide, also known as completed suicide, is the “act of taking one’s own life”. Attempted suicide or non-fatal suicidal behavior is self-injury with the desire to end one’s life that does not result in death. **Assisted suicide** is when s.o helps another bring about their own death indirectly via providing either advice or the means to the end. This is in contrast to euthanasia, where another person takes a more active role in bringing about a person’s death.

Most of the reasons for suicide are connected with serious psychiatric disorders or various psychological problems – mental disorder (depression, schizophrenia, depressive episode of bipolar disorder, borderline personality, alcoholism, and drug abuse) and serious life events, crises, troubles with interpersonal relationships, terminal phase, oncology problem, financial difficulties. The statistic is startling and fearsome.

The most commonly used method of suicide varies by country and is partly related to availability. Common methods include: hanging, self-poisoning, and firearms. Rates are higher in men than in women (3-4/1). Attempts are more common in young people and females. Suicides have been influenced by various life events, religion, honor, and the meaning of life.

STATISTIC

- **1 MILLION PERSONS** make suicides each year.
- **20 MILLIONS** – tentamen suicides
- **Bulgaria – 12 place in the world for suicides,**
- **Bulgaria – 15 place for suicide of children.**
- **50% of suicides are in the active age (20-59),**
- **26.2% are children.**
- **The death of suicide is higher than transport incidents**
- **38.7% are pensioners.**
- **60000 persons made suicide in EU in 2006.**
- **Correlation between males/females is 3/1.**
- **Each 2 days 1 child puts the end of his life.**

Some cultural aspects of suicide



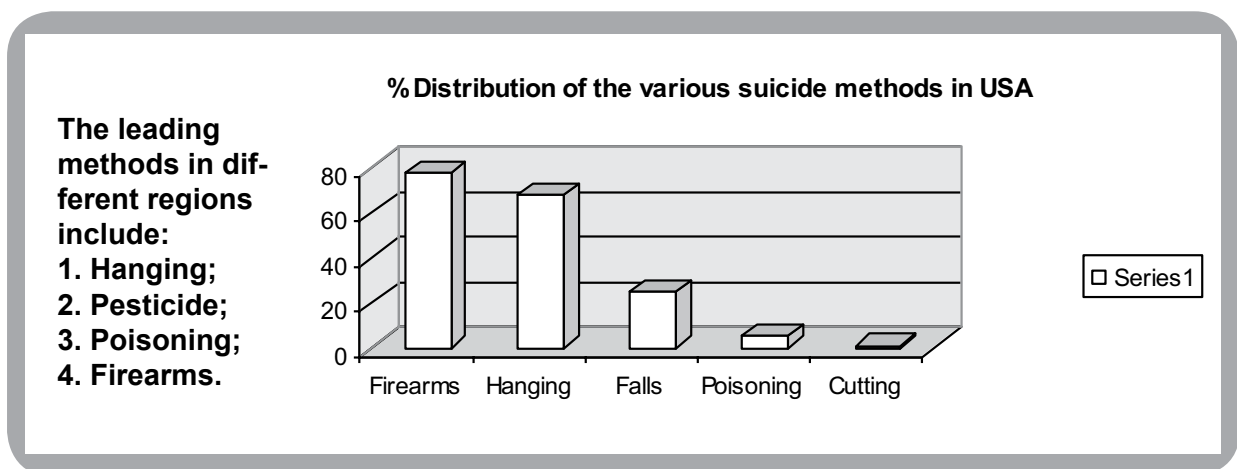
A Hindu widow burning herself with the corpse of her husband, 1820

- **Abrahamic religion** – consider suicide an offense towards God due to the belief in the sanctity of life.
- **Samurai era in Japan** – was respected as a form of a protest.
- **Sati** – the widows had to sacrifice herself on her husband’s funeral pyre.
- **Self-sacrifice** – in rare in the 20th and 21st centuries occasions as a protest and kamikaze and suicide bombings has been used as a military or a terrorist tactic.
- **War veterans** – had a higher suicide risk and higher rates of mental illness and physical health problems related to the war.

Freud – Suicide represents aggression turned inward against an introjected ambivalently cathected love object.

Risk factors	Life events
<ul style="list-style-type: none"> • Socio-demographic background; • Psychiatric history (depression, epilepsy, schizophrenia, drug-addiction, alcoholism); • Etiologic factors; • Age – suicides increased with the age (middle age, between 40-50 years); • Nationality – Scandinavians, Japanese; • Emigrants; • Sex – males/females (3/1); 	<ul style="list-style-type: none"> • Family problems; • Problems on the working place; • “Broken home complex” – children coming from such family commit suicide more often than from a normal family; • Reasons of health.

The rates vary in time and across regions (from 0.1 in Egypt to 43.1/100,000 population in Germany in 1980-1986 with prevalence among young people (Murphy et al., 1995). In Bulgaria a rate of 47 cases per 100,000 in psychiatric patients was reported by Beshkov et al. in 1977. There are 30,000 suicides per year in the US – 30,232 successful suicides and the number of attempted suicides is estimated to be 8 to 10 times that number (Kaplan & Sadock, 1996). In extenuating situations where continuing to live would be intolerable, some people used suicide as a means of escape. Some inmates in Nazi concentration camps are known to have killed themselves by deliberately touching the electrified fences.



These differences are believed to be in part due to availability of the different methods. A review of 56 countries found that hanging was the most common method in most of the countries.

In order to end their life suicides were used various methods. Death by hanging is one of the most common suicide methods. Varying information is reported about the Balkan' peninsula on the relative share of the suicidal hangings committed. In the region of Mures (Republic of Romania) they are 85.4%, in the Republic of Serbia – 57%, and in the region of Trakya (Republic of Turkey) they are 41.8%. According to *M. Baltov* (2013) in the Republic of Bulgaria, the relative share of committed suicidal hangings has increased over the years. His research studied some social aspects of suicidal hangings committed in the region of Plovdiv, Republic of Bulgaria, during the period 2000-2009. He investigated throughout that period 944 suicides of which 480 (51.56%) by hanging (75% were males and 25% were females). The average age of suicides who committed hanging was 56.13 ± 0.82 years, and the relative share of persons in mature age (45-64) is the largest.

Pathogenesis of suicides

Stress

Stress, is a major factor in suicide: Dwivedi Yogesh announced that some of the hypotheses for suicides suggest that the pathogenesis of suicidal behavior and depression involves **changed neural plasticity, resulting in the inability of the brain to make appropriate adaptive responses to environmental stimuli.** This hypothesis is supported by studies showing altered brain structure during stress and in depressed and suicidal patients.

These alterations include a reduction in the cell number, the density, the cell body size, and the neuronal and the glial density in the frontal cortical or hippocampal brain areas and a decrease in the parahippocampal cortex cortical/laminar thickness, impaired synaptic connectivity between the frontal lobe and other brain regions, changes in the number and shape of dendritic spines, changing in the primary location of synapse formation, altered dendritic morphological characteristics of neurons in the hippocampus, a decrease in the length and the number of apical dendrites, a neuronal atrophy and a decreased volume of the hippocampus, a decreased number of neurons and glia in cortical areas and spatial cognition deficits have also been reported during stress and depression.

Stress, is a major factor in suicide, hinders performance on hippocampal-dependent memory tasks and impairs induction of hippocampal long-term potentiation. These studies clearly demonstrate impaired structural and functional plasticity in depression and suicide.

Stress plays an important role in suicidal behavior;

Several studies demonstrate that stress poses a major risk factor in suicide. **A hyperactive hypothalamic-pituitary-adrenal axis and suicidal behavior are well correlated,** such that elevated corticotrophin-releasing hormone levels in the cerebrospinal fluid, reduced corticotrophin-releasing hormone binding sites in the frontal cortex, augmented pro-opiate-melanocortin RNA density in the pituitary gland, large corticotrophic cell size, and alterations in the mineralocorticoid to glucocorticoid receptor mRNA ratio in the hippocampus of subjects who committed suicide have been demonstrated. Also, a consistent association has been found between subsequently completed suicide and nonsuppression of cortisol using the dexamethasone suppression test.

Brain Derived Neurotrophic Factor (BDNF) and Suicide

The current main neurochemical theories of the biological correlates of suicidal behavior principally involve the serotonergic system. Few data are available about the possible role of the catecholaminergic (noradrenergic and dopaminergic) function. **Moreover, mean postdexamethasone cortisol levels did not exhibit any significant difference between suicide attempters and nonattempters.** Violent and nonviolent attempters did not differ on any of the biological measures.

1. Alterations of DNA methylation the hypothesis - It was discussed that could be involved in the **dysregulation of BDNF gene expression in the brain of suicide subjects** (Keller et al. 2010). They found **significant increased DNA methylation at specific CpG sites in BDNF promoter/exon IV.** A few sites are located near the transcriptional start site that had **differential methylation, whereas genome-wide methylation levels were comparable among the subjects.**

2. Human postmortem tissues – studies in human postmortem tissues provide direct evidence of *neurobiological abnormalities in suicide subjects*. Their group for the first time examined the role of BDNF in suicide by studying the expression of BDNF in Brodmann area 9 and hippocampus of suicide subjects.

It was found that the mRNA level of BDNF and protein levels of BDNF were significantly lower in the hippocampus of suicide subjects. These subject, that have less transcription of BDNF in brains of suicide subjects. Thus, our findings demonstrate that a reduced level of BDNF is associated with suicidal behavior.

This study supports a role of BDNF in the pathophysiological characteristics of suicidal behavior. This study also suggests that a decrease in BDNF may be specific only to brain areas that are related to emotion and cognition. It was found that suicide subjects who were receiving antidepressant treatment did not show any change in the level of BDNF, suggesting that psychotropic drugs normalize the decreased level of BDNF in suicide subjects (Karege et al.; 2005). The absence of change in BDNF level of drug-treated suicide victims further suggests that BDNF may be a mediator of psychotropic drugs.

3. BDNF Studies in Suicidal Patients – In search for a possible biological marker for suicidal behavior, recently, several studies attempted to examine BDNF levels in the blood cells of suicidal subjects. It has been shown that BDNF may cross the blood-brain barrier and that platelet BDNF postnatally shows changes similar to the brain (Karege et al., 2002), suggesting that there are parallel changes in the blood and brain levels of BDNF. In a group of depressed patients with a recent suicide attempt, nonsuicidal depressed patients, and healthy controls, Kim et al. (2007) measured plasma BDNF levels. They found that the BDNF level was significantly lower in suicidal depressed patients vs. nonsuicidal depressed patients or healthy controls; however, BDNF levels were not different between fatal and nonfatal suicide attempts. They found that the plasma BDNF level was significantly decreased in depressed suicidal patients vs. depressed nonsuicidal patients.

It is clear that BDNF is less expressed in both brain and peripheral tissues of suicide subjects. Interestingly, expression of BDNF is reduced and activation and expression of TrkB, to which BDNF binds and mediates its functions, are lower in the suicide brain. These studies indicate a possible deficit in the functioning of BDNF in suicidal patients. Because depression is the major factor in suicidal behavior, studies have shown that BDNF is down-regulated during depression. Thus, an important point that needs careful consideration is whether the findings of BDNF are linked to depressive symptoms or are specifically associated with suicidal behavior. As previously discussed, several studies have examined BDNF in suicidal and nonsuicidal depressed subjects and have shown that the down-regulation of BDNF is mainly linked to suicide attempts. Genetic studies also support this notion. Nonetheless, more comprehensive studies are required to confirm these findings.

Another important observation is that glucocorticoid affects BDNF expression, which appears to be regulated through modulation of specific BDNF transcripts. These studies suggest that an increase in cortisol/CORT during stress is critical in regulating BDNF expression. These studies also raise the possibility that each transcript may have distinct functions in the brain and may be differentially regulated. Thus, in the future, it will be important to examine the functions of each BDNF transcript and to understand the role of these transcripts in the pathophysiological characteristics of suicide.

Chronobiological Aspects in Suicide

Many publications are devoted to suicide, but it is not written enough about their chronobiological characteristic. Most of them are connected with their seasonal rate and the dominate comprehension is they are mainly in spring and autumn.

In our previous studies N. Madjirova, B. Dimitrov, R. Stefanov et al. (1998) were established some chronobiological features of patients with tentamen suicide.

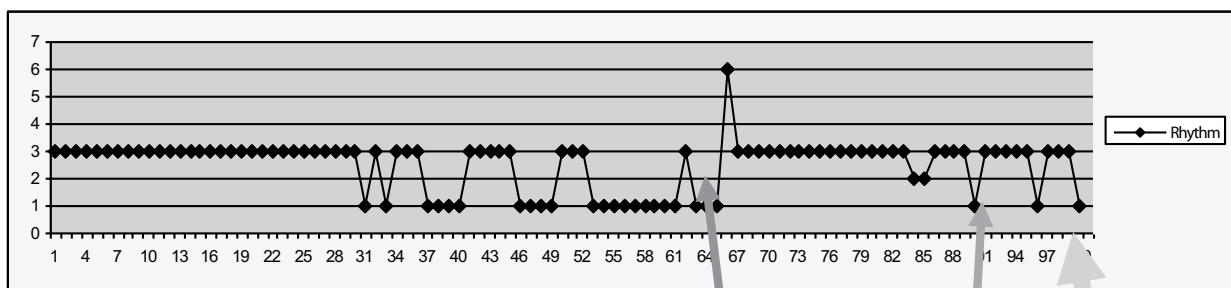
1. Season – high risk in spring and in autumn;
2. Date of the months – high risk from the 1st to the 10th date;
3. Day of the week – the rate is higher during the working days of the week;
4. Hours of the day – more spread between 10.00 AM and 09.00 PM;
5. Biorhythmic critical days – most expressed for endogenous psychoses (depressive phase of Affective disorders and Schizophrenia), most of them are in their negative phase, or in the emotionally or physically critical days;
6. Stability of the circadian rhythm – the day before the suicide the pathologically stable rhythm is disturbed;
7. Geomagnetis and solar activity – suicides and tentamens are higher in these days.

Case – Anna is 43 years old female, she is married with one child. She is a surgical nurse. His mother is with heavy schizophrenic disorder. She was a charming woman, she liked her profession very much. Her 1st depressive episode was on the 1st of September in 1990. After her recovery she was on a supported therapy and regular made consultation with her psychiatrist and very strictly followed his instruction. For a period of 10 years she was hospitalized 4 times for a period not longer than a month. She had very good remissions, but always on the 1st of September she became depressed and she had to take some antidepressants for several months. She had no problems on the working place. In 2000 she had a cancer – she had carcinoma of glandule of mamilla. She had metastases and her uterus and ovaries were extracted too. She had chemotherapy and ray-therapy. She was stabilized. Five months later on the 30th of August at 6 o'clock in the morning she rang me at the telephone crying: "Doctor tell me what to do? The 1st of September is coming and I shall receive depression again. I had very serious operations. I passed through chemotherapy and ray-therapy. Cancer is nothing and not so dangerous as the depression. Tell me what to do. The depression is a very heavy disease". I tried to calm her, to explain her that depression is coming and after therapy will disappear. I pleased her to be hospitalized in the department of Psychiatry, but she does not listen to me. She only cried: "Depression is terrible, the 1st of September is coming, what shall I do ... depression is like a monster. Nobody can help me ... depression is coming and I shall sink into the Underworld..."

She did not follow my advice and did not come in the hospital. Just on the 1st of September she made suicide by hanging. In this case was demonstrated a patient with affective disorder, recurrent depressive episodes. I would like to stress on three main factors: 1st one who had never been in depression could not imagine the miserable and awful feeling of the patients during depression. She said to me: "Cancer is nothing in comparison of depression!" Even she had many depressions previously each new episode looked more dangerous for the patient and he does not believe that she could overcome after the depression. Typical for this patient is seasonal depression. The peaks of the suicides are during Spring and Autumn. The 3rd moment is – after two serious operation, chemotherapy and ray-therapy she could receive hormonal disbalance, and specially the use of corticosteroid medicament in mega-doses could provoked depression.

In the part of Chronobiology you could recognized with stable and unstable rhythm of mood and vigor, during prolonged following their rhythm. Suicides are more often spread when after a long period of time the s. c “pathologically a stable rhythm” is disturbed – the psychiatrists must be careful with the depressed patients, because it is possible to make a suicide. We tried to make a description of a patient with depression, whose rhythm was followed daily about 101 days, before his suicide.

Case: *Christo is 40 years old man. His father suffered from depression. His 1st depressive episode appeared when he was 20 years old. After that he had a long stabilization of 10 years. He married, he had 2 children. During the last 10 years before his suicide his depressive episodes were almost 2-3 times each year and after the depression appeared manic phases. He was invalid and could not continue to work in the factory. So he had to be retired. The interrelationships between him and his wife were destroyed. Before his last depressive episode she decided to divorce. He could not see any light in the hole. He was hopeless. He became very sad, had no appetite, and could not sleep in the night, he felt guilty in front of his children. He could not imagine how he would continue to live alone with his little pension. He had no relatives that could support him. So he was hospitalized in the Clinic of Psychiatry on the 17th of March with serious suicide ideas. We began with Amitriptyline till the 30th of March. Patient was with pathologically stable rhythm. The therapy was changed. From the 1st of April till the 5th of May he was on Nomifensin. His pathologically stable rhythm was changed – one day he was morning type rhythm, after that evening type, than daily type and s. o. During this period of time he made a serious suicide (tried to jump through the open window). Accidentally he was saved. In May he was on Ludiomil – his rhythm was unstable and he had persevering suicide ideas. The therapy was changed with Trimipramin. On the 26th of June he made suicide.*



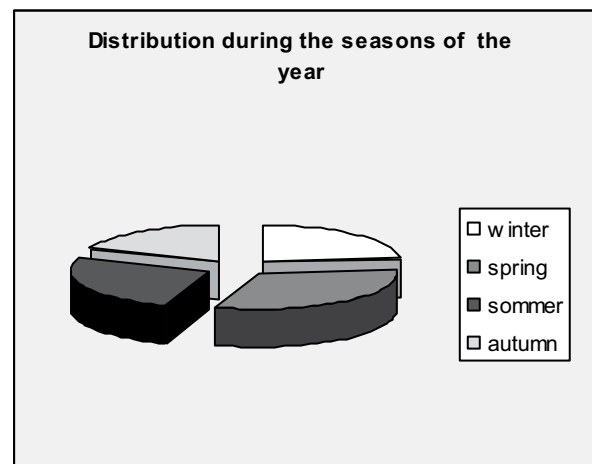
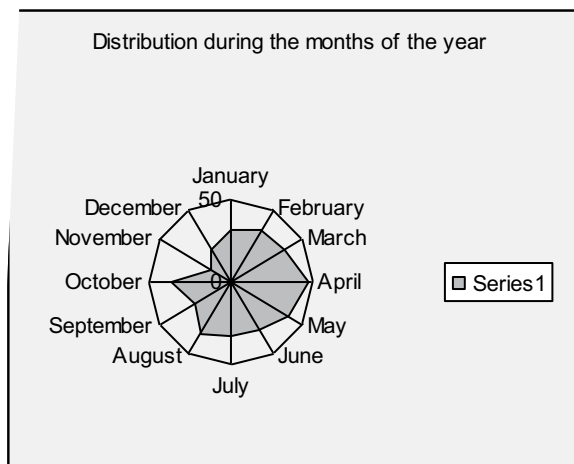
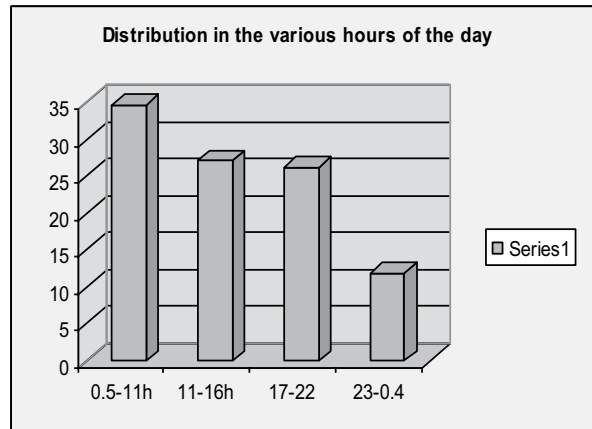
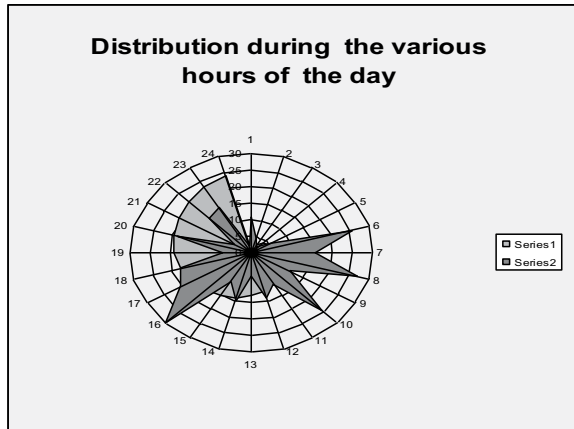
<p>from 17-30.03.1983 was on Amitriptylin, that is stopped on the 30.03.1983</p>	<p>01.04-03.05.1983 Nomifensin-is stopped on 03.05</p>	<p>6.05.-26.05 Ludiomil Suicide- jumped through the window</p>	<p>27.05-18.06 suicide ideas Hydiphen & Amitript.</p>	<p>18.06-25.06 +Trimipramine Suicide</p>
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Typical for this case is that the patient had serious life event. According to Holmes and Rahe the divorce is one of the most important life events. His tentamen (to jump through the window), suicide ideas and suicide were preceded by the change of the circadian rhythm. We must be very careful when the depressive patients have often change of their rhythm.

His diagnose was: Bipolar Affective Disorder, depressive phase with suicide ideas

Here are given some chronobiological aspects of 490 suicides by hanging in the District of Plovdiv, Bulgaria for the period 2001-2009 (by the values of M. Baltov, 2013).

The distribution by hanging of 480 persons in Plovdiv’s Region



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IX. CHRONOBIOLOGY IN PSYCHIATRY

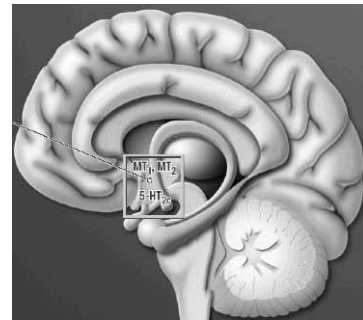
During the last 5 decades chronobiology took its place in psychiatry. Many authors speak about the place of chronobiology in the pathogenesis of some psychiatric states: affective disorders (AD), schizophrenia (Sch), neurotic disorders (ND), autistic disorder and s. o. Its use in the diagnosis, the therapy and the prophylaxis is discussed too. New branches appeared in psychiatry: **chronopsychopathogenesis; chronopsychodiagnosics; chrono-psychotherapy, chronopsychopharmacology and chronopsychoprophylaxis.**

Even the science of chronobiology is very ancient the most serious studies in psychiatry were done at the end of the last century.

Introduction

Some rhythmic processes in the human body have been known for a long time. The roots of chronobiology come in from ancient Greece. Three hundred years ago B. C. the Greek doctor Chrophiles of Alexandria discovered that the pulse rate of healthy individuals changed through the day.

How rhythms are built into organisms, no one really knows. What is clear that are inherited, programmed into genetic blueprint of the organism. **“Rhythms” are products of genes not just in space but in time** (F. Halberg, 1986). According to him in chronobiology are found rhythms at many levels in biology. Scientists today call man “a system totally woven out of rhythms”. **In this system the main rhythm is the Circadian and the rhythm of body temperature is one of the most important and stable rhythm.** The disturbance of the normal circadian rhythms in the living organisms could provoke various disorders. The suprachiasmatic nucleus, which functions as the **body’s master circadian clock**, plays a major role in the regulation of the sleep wakefulness rhythm and interacts actively with the homeostatic processes that regulate sleep (A. Stoynev).



Nucleus suprachiasmaticus

Chronobiology has already made its way to medicine and to psychiatry particular. Chronobiological findings are very important in the pathogenesis, diagnosing, treating and even prevention.

Chronobiology seriously puts its roots in psychiatry and it could be discussed in 4 aspects:

- The place of Chronobiology in the pathogeneses;
- Chronopsychodiagnosis;
- Chronopsychopharmacotherapy;
- Chronopsychoprophylaxis.

During the last several decades appeared too many hypotheses about the pathogeneses of the psychiatric disorders: *not biological; experimental factors; biological; sleep-wake rhythm, and chronobiological.*

There is a very strong connection between chronobiology and the various hypotheses mentioned above (cellular level, genetic, molecular, immune system, biochemical and hormonal theory, sleep-wake cycle and s. o.) as they have a specific circadian rhythm and it is disturbed in patients with somatic and psychiatric disorders.

I. The place of Chronobiology in the pathogenesis of psychiatric disorders:

Desynchronization is the most spread hypotheses. **F. Halberg** is one of the first scientists to document the importance of chronobiology in psychiatric disorders. *In 1968 he mentioned about **desynchronization** of the circadian rhythm in depression.* The body temperature cycle of a depressed patient may run on an earlier schedule than the same cycle does in a healthy person.

We support the idea for desynchronization of the circadian rhythms of temperature, pulse, blood pressure, mood and vigor.

The daily rhythmic process of temperature and the pulse rate were followed each hour in 515 psychiatric patients and 65 healthy persons. Some of them were examined before and after treatment with various psychopharmacological drugs (neuroleptics, antidepressants, tranquilizers). Data were analyzed by Halberg's cosinor method.

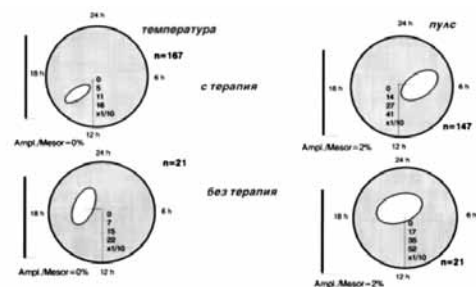
Comparison between the chronomes of temperature and pulse determined by his method shows that mesors of Sch are significantly higher than that of healthy persons and AD before medication. After clinical improvement appeared a non-significant decrease of temperature in Sch and ND. Pulse rate in patients is significantly higher compared to healthy persons before and after medication. Peaks of temperature and pulse were noted at different times in Schizophrenia (Sch) and Affective disorders (AD) before/after medication.

The internal desynchronization between vegetative parameters in Sch, AD and ND is obvious on the population graphics

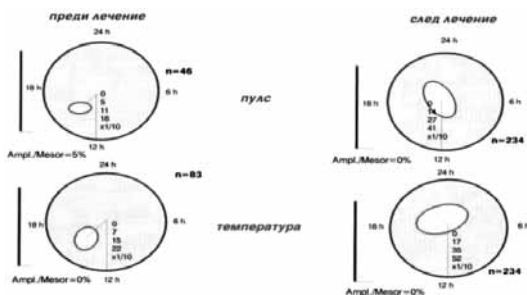
Conclusion:

Desynchronization of circadian rhythm of temperature and pulse is typical for psychoses (Sch and AD) before and after therapy. ND are characterized with synchronization between these parameters before therapy and after medication they are synchronized because of the absence daily rhythm. This fact is very important, because the patients and the psychiatrists must know that the supporting therapy must be used even when the clinical symptoms disappeared.

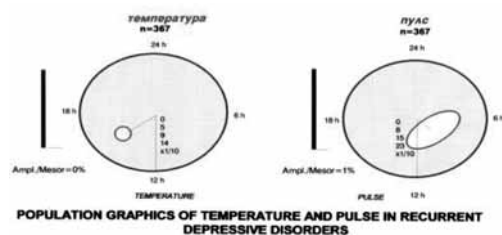
Population graphic of temperature and pulse before (down) and after(above) in neuroses



Population graphic of temperature and pulse in Sch before (left) & after (right) medication.



Population graphic of temperature and pulse in depression before therapy

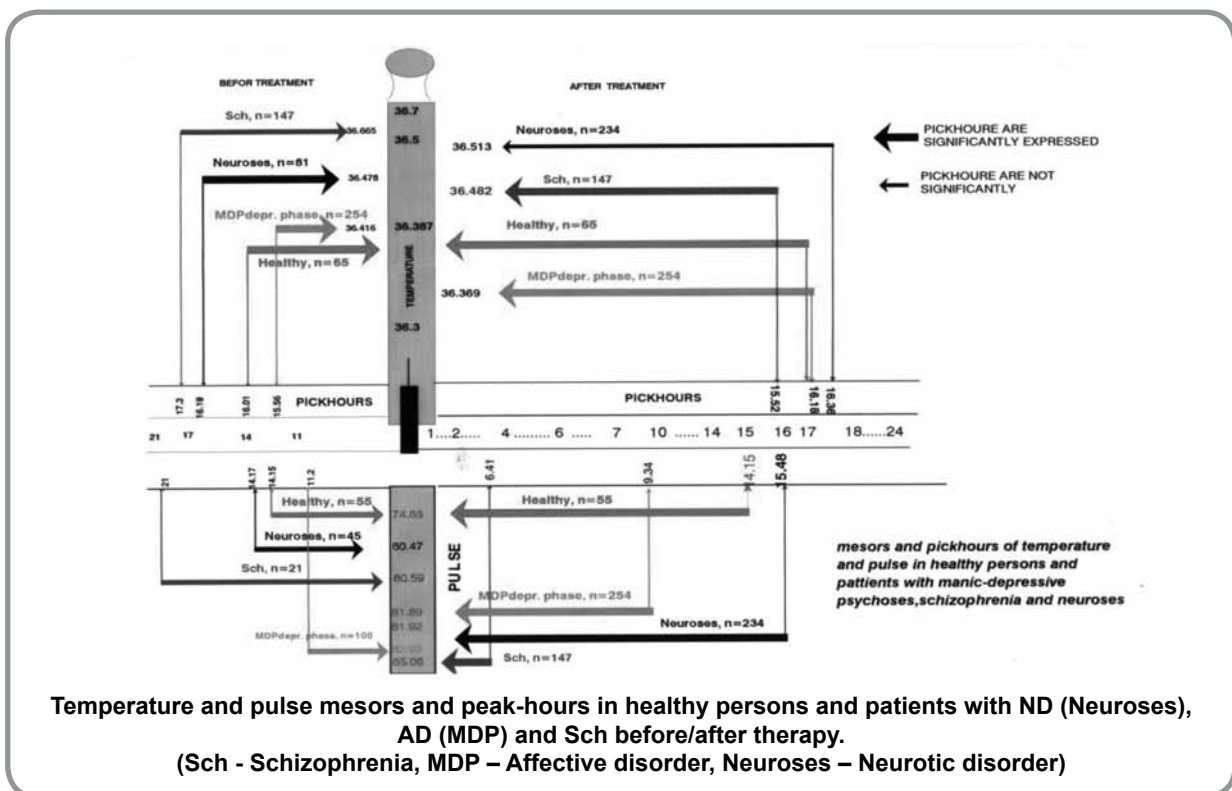


The received data spoke for the different mechanisms in the pathogenesis of these main psychiatric disturbances. We must not neglect the fact that the groups of patients with Sch, AD and ND are heterogenic.

• **Neurotic disorders (ND)** – specific for ND is that temperature and pulse are synchronized before medication. After therapy the daily rhythm of the two parameters disappeared and they are synchronized because of the absence of expressed peak-hour.

• **Schizophrenic disorders (Sch)** – Menninger-Lerhenthal (1960) noticed that the temperature during schizophrenic episode is with 1 degree higher. It was established (N. Madjirova et al, 1995, N. Madjirova, 2006) that temperature and pulse in Sch (before and after treatment) is significantly higher than those of controls. After medication, there were not significant decreases in temperature and increases in pulse. Peaks in temperature and pulse were noted at different times (before/after therapy). The pick-hours of temperature for schizophrenics before/after medication were significantly expressed in 17.35 and 15.52 o'clock and for pulse vs. – 20.27 and 6.41. It speaks for internal desynchronization of these parameters (see the figure on page 192).

• **Affective disorders (AD)** – they were studied at the middle of the 20th century and the results of the various authors were very contradictory: some established that patients with depression were with higher temperature during depression and it is normalized after recovery; others did not find any temperature and pulse difference or desynchronization before/after medication. We found differences between the mesors of temperature and pulse before and after medication, that spoke for desynchronization before/after therapy.

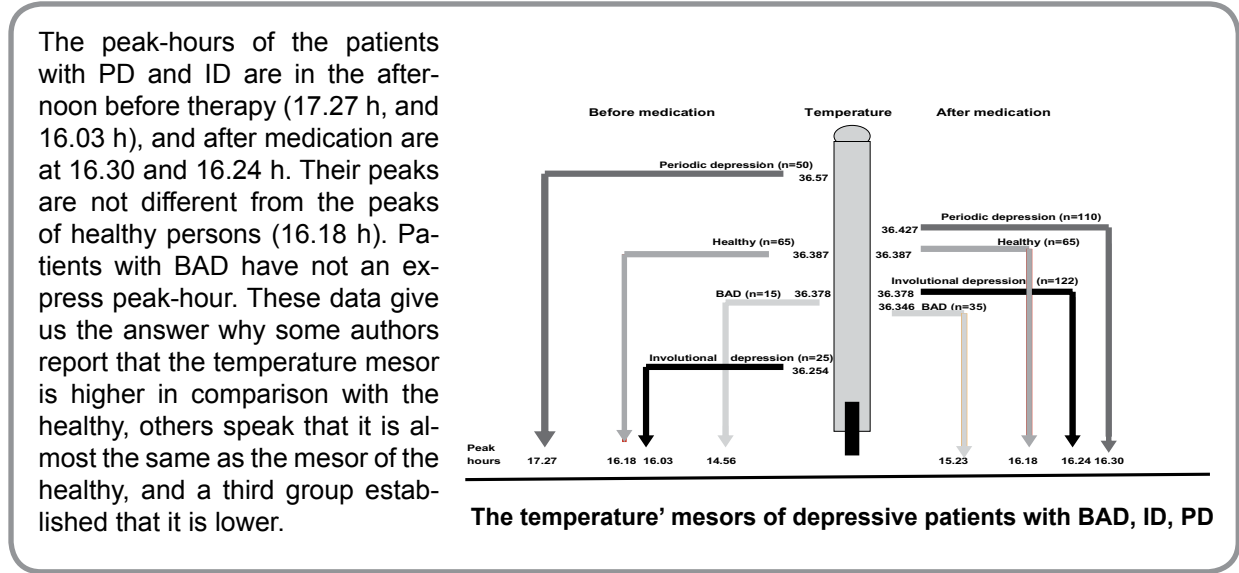


However, other factors (such as age, season, sleep disturbances, the use of medications, the circadian rhythm of mood and its stability) must first be considered in further studies.

As the various authors give different data for the temperature values of AD, was done a chronobiological characteristic of the different subgroups of AD. We must not neglect the fact that some psychiatrists found specific clinical and genetic features in patients with involution depression (ID) and patients with periodic depression (PD). According to ICD-8 and ICD-9 they were with different codes (296.0 & 296.2 for ID and 296.13 and 296.2 for PD). In the new DSM-IV, DSM-IV-Revision and ICD-10 there is no code for ID.

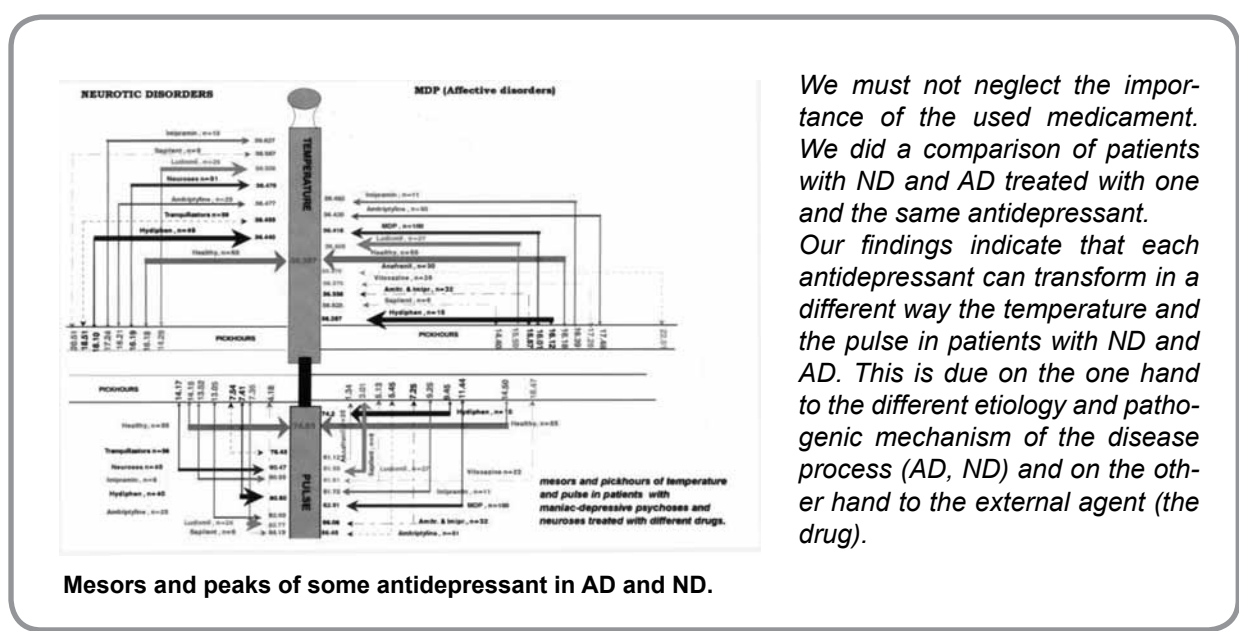
That is why appears the idea to study the circadian rhythm of depressive patients with ID, PD and BAD.

The various subgroups of AD showed some specific chronobiological features of temperature. The temperature mesor of PD (36.57 C) before medication is significantly higher in comparison with the mesor of ID (36.254 C). After medication the temperature mesor of PD decreased 36.427 C), whereas the mesor of ID is increased (36.378 C). The patients with BAD showed no dynamic of mesors before (36.378 C) and after medication (36.346 C) and were not different from the mesors of healthy individuals (36.387 C).



In order to exclude the influence of the age was done a comparison between the values of PD before involution age and PD in involution age. Their data are not significantly different, whereas the temperature mesor of PD in involution age are significantly higher in comparison with that of ID.

These results show us that ID is characterized with some specific chronobiological features and it is necessary to think about its place in the future classifications. The different chronobiological models of Id, PD and BAD could speak also for some specific features in their pathogenesis.

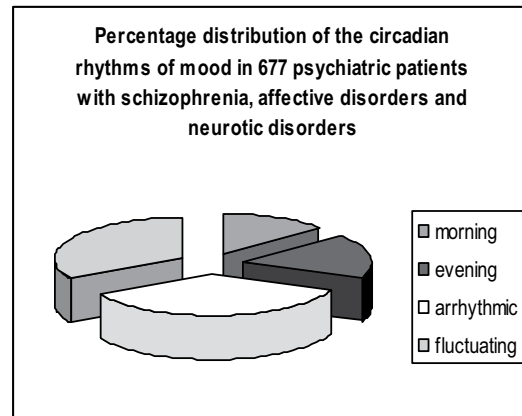
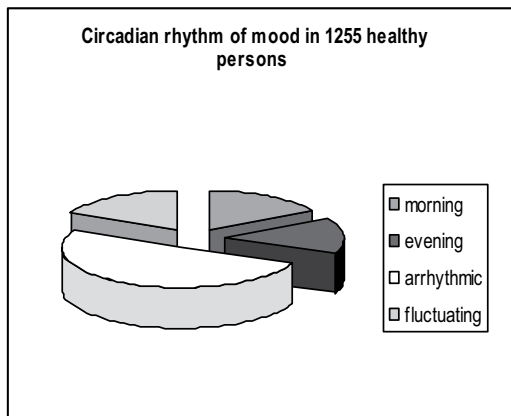


We must not neglect the importance of the used medicament. We did a comparison of patients with ND and AD treated with one and the same antidepressant. Our findings indicate that each antidepressant can transform in a different way the temperature and the pulse in patients with ND and AD. This is due on the one hand to the different etiology and pathogenic mechanism of the disease process (AD, ND) and on the other hand to the external agent (the drug).

Circadian rhythm of mood and vigor.

The German Neurophysiologist H. Hampf in 1961 by means of a detailed questionnaire involving 400 healthy individuals studied the daily fluctuation of mood and vigor. **He distinguished 3 types of circadian rhythms – arrhythmic, morning and evening.**

For our population in the period of 1982-1989 almost ½ of the healthy persons were arrhythmic type, morning type were 22.84%, evening type – 13.12%, and with fluctuating type – 11.93%. We established that a small percentage report a fluctuation of emotions and impulses during the day without finding a link with external or internal factors which we differentiated as being what we call **“fluctuating type”**. No differences according to sex were found. The age distribution shows that among young people the evening and fluctuating types are significantly more frequently encountered. The arrhythmic type is more frequent in mature age, and in old age the percentage of morning type rises significantly.

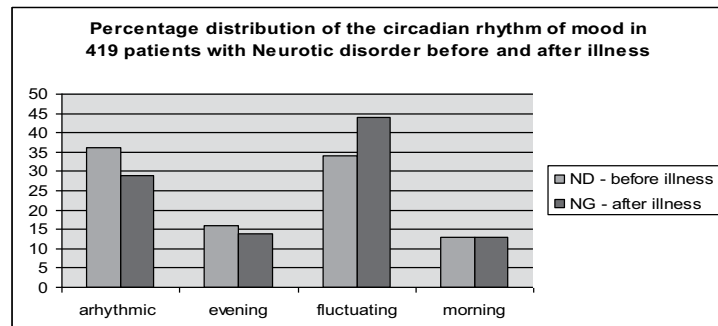


The distribution of these types among psychiatric patients is rather different – fluctuating type is more spread and it is significantly higher in comparison with the healthy one, whereas the arrhythmic type is significantly lower.

Arrhythmic type is specific for healthy persons, evening type – for AD and for ND is more often spread fluctuating and morning type circadian rhythm of mood.

A special attention must be given to the distribution of the types of the circadian rhythms in patients with ND. The examination of 410 patients shows that arrhythmic type were 29.03%, fluctuating type – 43.9%, 13.17% were morning, and 13.90% were evening type.

An attempt is made at retrospective assessment of the type of rhythm prior to the neurosis affection, showing that fluctuating type of impulses (22.68%) and emotions (34.39%) is higher in comparison with healthy persons. This fact indicates that in this contingent there is instability of the impulses and emotions.



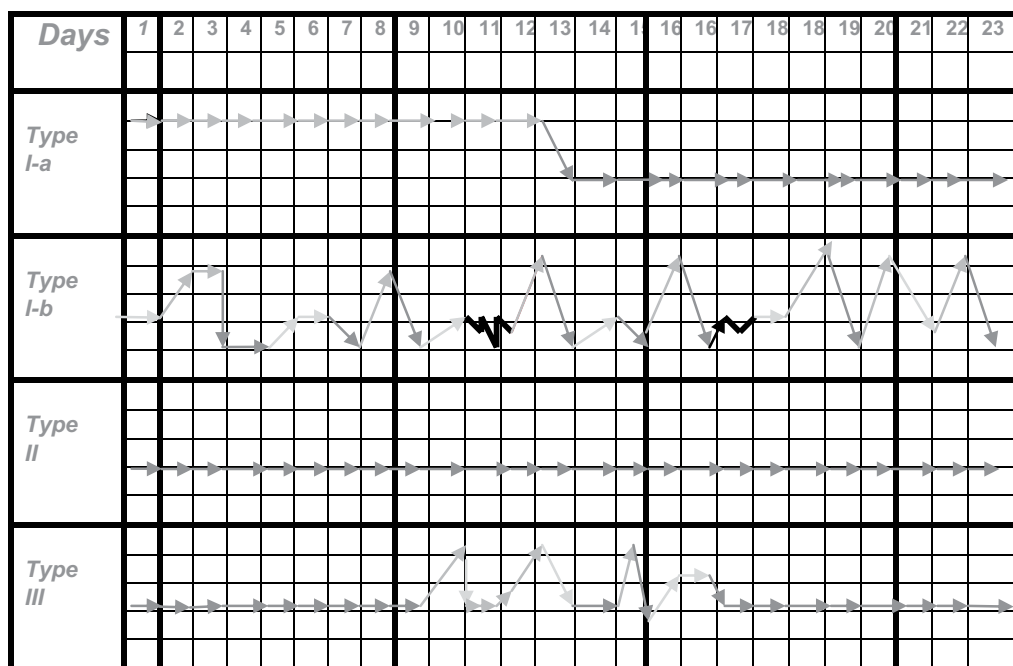
Although with some reserve the question may be posed whether or not the fluctuating type of rhythm in healthy persons is to be considered as one of the risk factors, predisposing to neurotic disorders development. These data can be used for prophylaxis of neuroses.

Stability of the circadian rhythm.

One-day examination of circadian rhythm could not have measured the full cycle of the circadian rhythm predominating in the individual patients to characterize its stability of the rhythm. When the follow-up was at least for two or three weeks, it was possible to identify the predominating rhythm (arrhythmic, evening, morning, fluctuating) in the individual patients and to characterize its stability. We studied each patient for stability of diurnal fluctuations of mood and vigor. The questionnaire was completed every day for a period of 1 month. The aim was to evaluate the extent to which type of circadian rhythm was stable.

During the long-term investigation 3 types of stability emerged:

- **Type I** – the substitution of one type of circadian rhythm for another (e.g. evening for morning). This type is with two subtypes:
 - **Type I-a** – the substitution is over greater intervals of time, for 10-15 days. It is more specific for females, as the change is connected with their menstrual cycle.
 - **Type I-b** – when changes occurred almost daily.
- **Type II** – single type rhythm. No changes of rhythm took place during the studied period.
- **Type III** – a mixed type, periods of a single type rhythm alternated with frequent changes of the rhythm.



→ - evening type; ↕ - morning type; → - arrhythmic type; ↕ - fluctuating type;

Graphic view of the types of the stability of rhythm of mood and vigor.

Three main types of stability of rhythm of mood and vigor were formed: stable; unstable; mixed:

Type II and to some extent type I-a indicated considerable stability of the circadian rhythm, whereas types I-b and type III indicated lower stability.

We can speak about two main types of rhythm stability:	<ol style="list-style-type: none"> 1. Stable rhythm; 2. Unstable rhythm.
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Healthy persons were characterized with higher stability of – It means that their good mood, good will, and working capacity are stable.

Typical for depression in AD is so called **“pathologically stable rhythm”** – high stability of depressive mood, sadness, gloomy, loss of activity, sleep disturbances. These patients registered a gradually increasing the degree of the depressive symptoms and a gradually decreasing of the same symptoms before their recovery, so that a **“spindle type”** is formed. It is highly specific for depression in AD (80.73%). About 21.07% of them 10 days before the end of the depressive phase show frequent change of the rhythm. The temperature mesor in this period is increased but not significantly. This **zigzag play of rhythm** shows a tendency of the patients to return to their usual biological rhythm or to find out their most suitable rhythm. It is typical for BAD. This rhythm could be noticed in patients with suicide ideas. The appearance of “zigzag” rhythm after “spindle type” and “pathologically stable rhythm” is a signal for psychiatrists to be more careful with suicide and depressive patients.

When this gradual increase and decrease of the degree is disrupted by a sharp change of the degree **“moniliform spindle rhythm”** is observed. It is highly specific for ND. **“Unstable rhythm”** is often spread in ND. Type **“plateau”** is specific for obsessive compulsive disorders (OCD). Sch is characterized with a “spindle type” (56.00%) and a “pathologically stable rhythm” (41.51%).

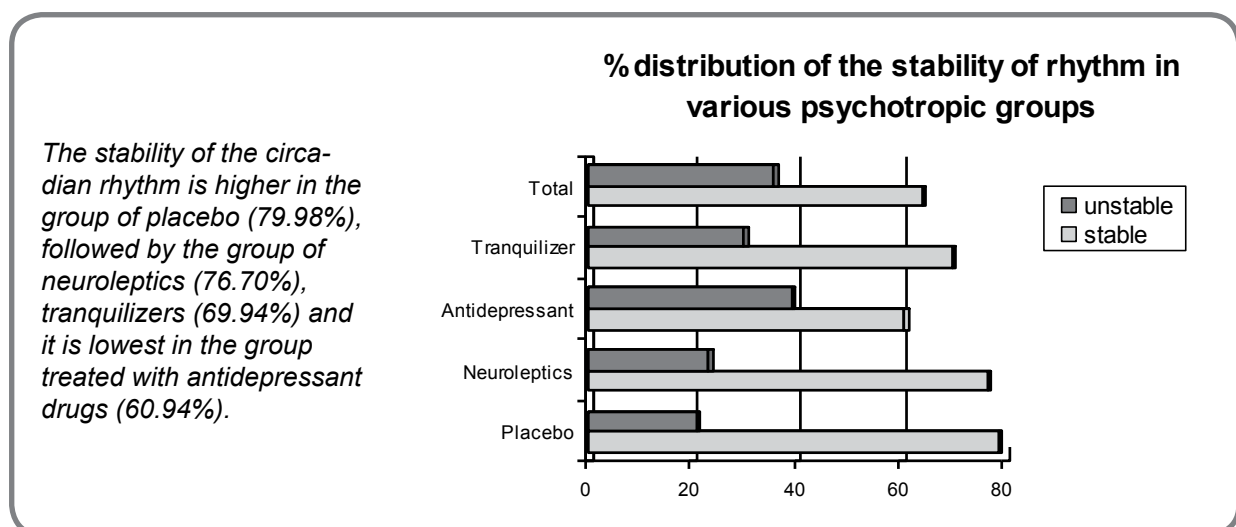
This study shows that the psychiatric disorders are with specific characteristic:

Diagnoses	Rhythm characteristic
AD - Recurrent depression	“spindle type rhythm”; “pathologically stable rhythm”
Depression in BAD	“zigzag” play of rhythm
Neurotic Disorders	“moniliform spindle rhythm” and “unstable rhythm”
OCD	type “plateau”,
Schizophrenia	“pathologically stable rhythm”, “spindle type”
Healthy persons	Stable rhythm (stability of good emotions and vigor)

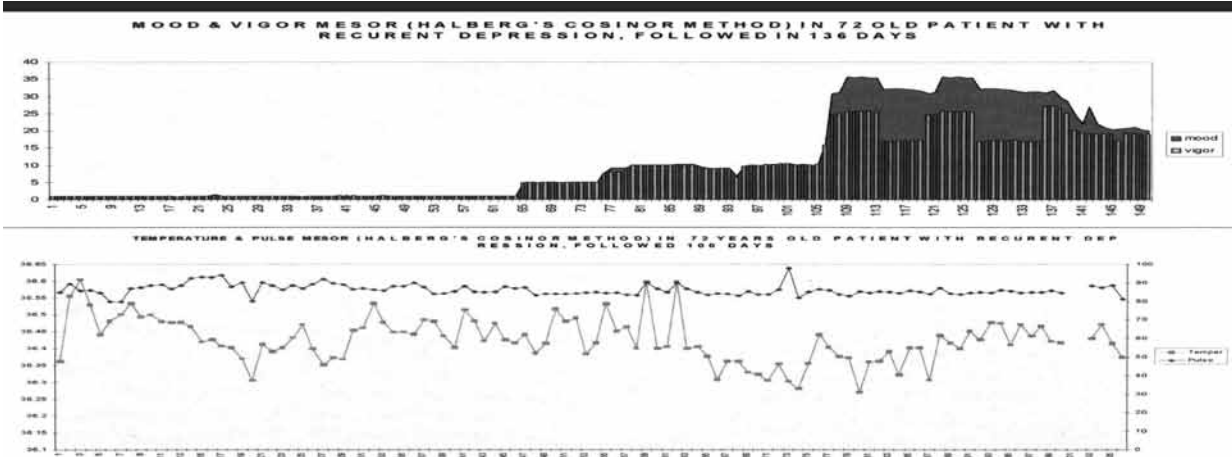
These data could help us about the diagnosis of the various psychic disorders, especially during the 1st episode and we could make the best choice of drug and time for applying.

The stability of the rhythm depends on the number of the hospitalizations – Typical is that with the increasing of the age and the number of the episodes almost half of the patients with endogenous depression show a tendency to deep the pathologically stable rhythm and “spindle type”. Only 10% of them (with ND) – destabilize the rhythm. We must not neglect the age. We have not examined the stability of the healthy persons several times. But about the circadian rhythm was established that with the increasing of the age dominate morning type rhythm. Most of the elder persons are with various somatic problems, they use different drugs that could transform the stability of the rhythm.

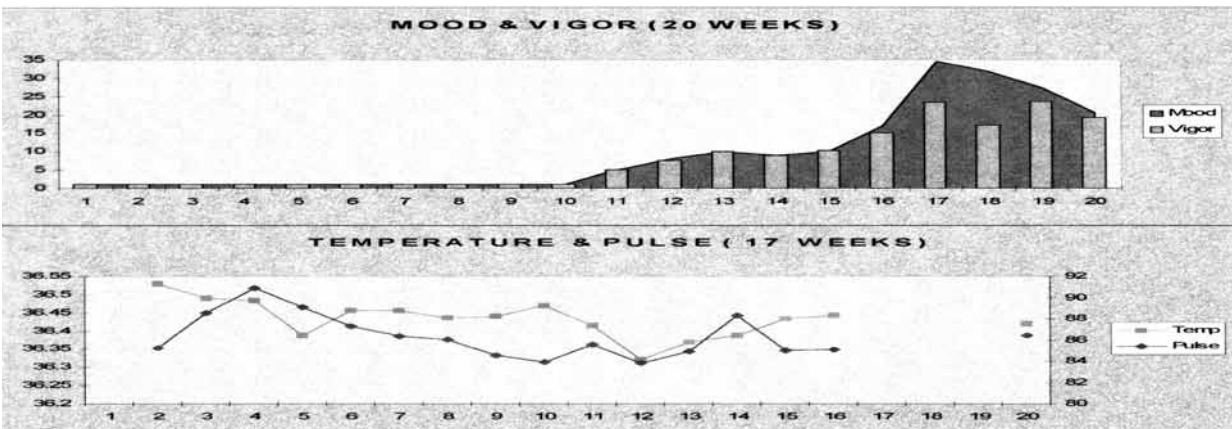
Psychopharmacological drugs transform the stability of the rhythm in different way. So the stability of rhythm of mood and vigor was examined in 1001 cases treated with various drugs (735 with antidepressant drugs, 163 with tranquilizers, 103 with neuroleptics, and 153 were on placebo or without medication).



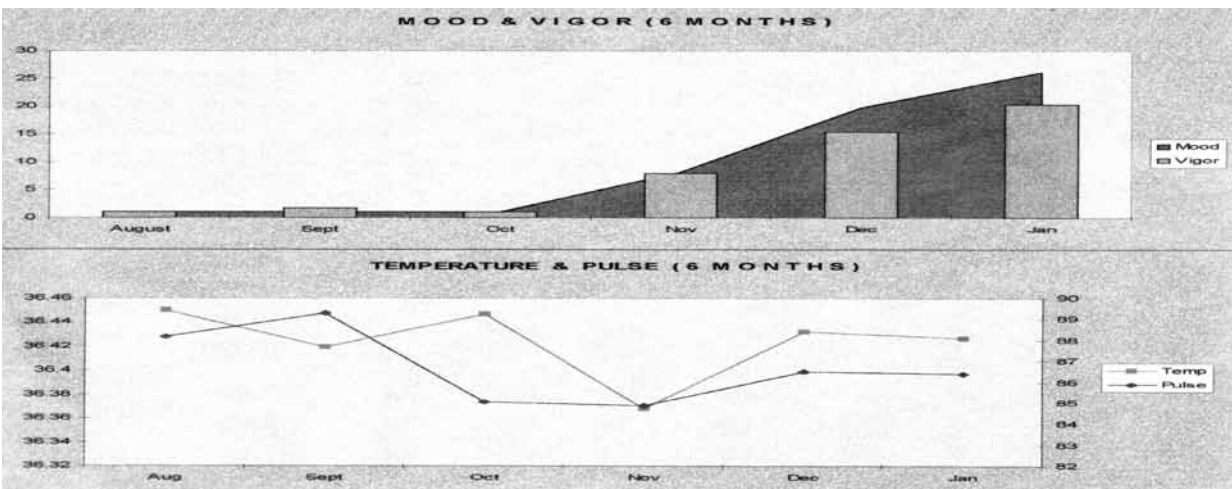
On the next figures are given the rhythm-stability of IKS, 73 aged female, in involution age with “pathologically stable rhythm” of mood, vigor. She suffered from involutional depression since 10 years. She registered her mood, vigor, temperature and pulse each two hours from 06 AM to 10.00 PM from 14.08.1990 to 20.01.1991. Mood and vigor were followed in for 136 days, and pulse and temperature for 101 days. Her depression was 9 months.



The daily rhythm of mood, vigor, temperature and pulse in 72 years old patient with involution depression, followed 136 days (Data were analyzed by Halberg’s Cosinor method).



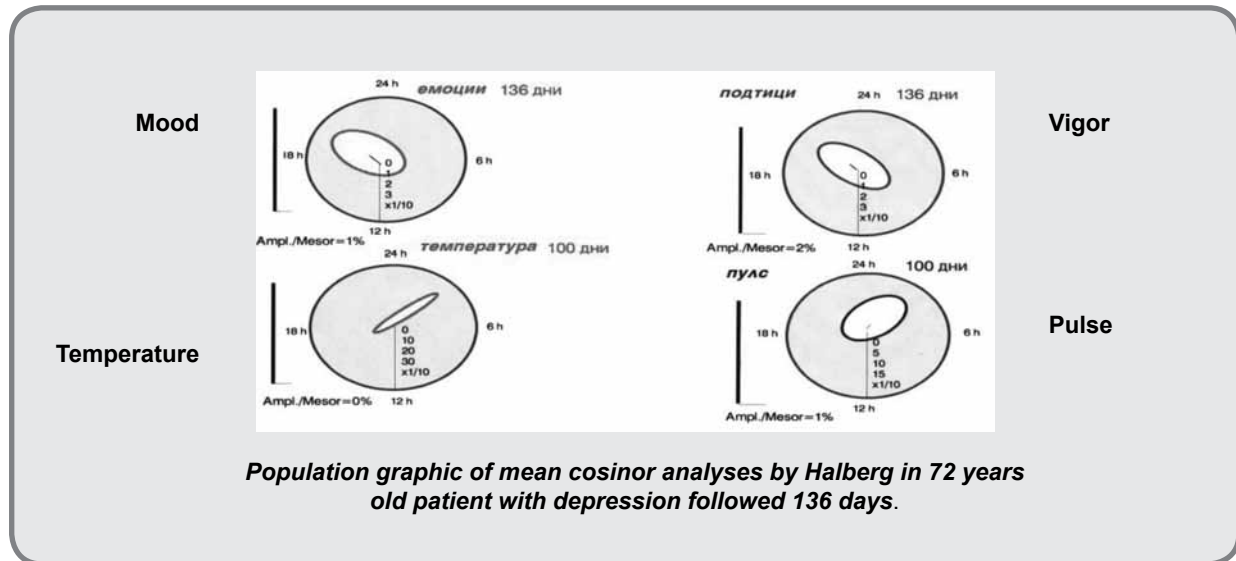
The week rhythm of mood, vigor, temperature and pulse in the same patient.



The month rhythm of mood, vigor, temperature and pulse in the same patient.

On this figure could be seen the desynchronization between the rhythm of temperature, pulse, mood and vigor.

The therapeutic problem in this patient is connected with the formation of “spindle type rhythm”, and desynchronization between the four parameters (temperature, pulse, mood and vigor). It is more obvious on the population graphic (see down the figure)



The stability of the rhythm of the various psychotropic drugs in patients with AD and ND depends on the seasons and the most suitable combination during the various seasons.

Co-medication of the various psychotropic groups in the seasons of the year.

Diagnosis and the stability of rhythm	Seasons	Winter	Spring	Summer	Autumn
	Psychopharmacol. groups				
Depression in AD “pathologically stable rhythm”	Antidepressants	+	+	+	+
	Tranquilizers	+	-	+	+
	Neuroleptics	-	+	+	+
Unstable rhythm (AD, ND)	Antidepressants	+	+	+	+
	Tranquilizers	+	-	+	+
	Neuroleptics	-	+	+	+

As the stability of the rhythm during therapy vary during the seasons of the year is very important to know how can combine the different psychotropic groups.

Depressive patients with “pathologically stable rhythm” is better to combine antidepressants with neuroleptics in winter that have the ability to destabilize the rhythm in winter, whereas in spring they must be combined with tranquilizers that destabilized the rhythm in spring, whereas in summer or autumn they could be combined with neuroleptics or tranquilizer.

W. Duncan & T. Wehr (1988) supported the idea, that the “circadian pacemaker” in endogenous depression is destroyed, and the use of some antidepressants could improve the disturbed circadian rhythm. So the most important idea of therapeutics is to synchronize the disturbed circadian rhythm in patients with AD and Sch.

Seasons of the year

According **Pedersen T. (2012)** Sch is more widespread among individuals born during the winter months-especially in January, according to a new, large study. The winter baby affects his/her eyesight, eating habits and influences birth defects and even personality later in life.

Past research had implied that the birth month of a child affects its mental health in later stages of life. “For example, maternal infections - a mother may be more likely to have the flu over the winter. Does this increase risk? Or diet. Depending on the season, certain foods - fruits, vegetables - are more or less available, and this may impact on the developing baby. Or another key candidate is vitamin D, which is related to sunshine exposure. During the winter, with a lack of sunshine, moms tend to be very deficient in vitamin D.”

He studied 58,000 individuals with schizophrenia, bipolar disorder or recurrent depression as well as over 29 million people from England’s general population. Mental disorders appeared season-based. **Schizophrenia and bipolar disorder had statistically higher peaks in January and significant lows in July, August and September.** Depression had an almost significant May peak and a significant November deficit.

“This result is further confirmation of seasonal variations in births of those later diagnosed with mental diseases,” said William Grant at the Sunlight, Nutrition and Health Research Center at San Francisco, who did not take part in this research.

“This implicates conditions during pregnancy. The two most likely factors are vitamin D status and temperature,” said Grant.

Specific chronobiological therapeutic methods are:

1. Sleep deprivation	See part “Sleep”, page 135);
2. Bright therapy	It is used to help those suffering from seasonal affective disorders: (A. Levy et al., 1984; R. Wever et al., 1983). More information you could find in the Chapter for “Depression”, specially “Winter depression”, page 248.
3. Dark therapy	It is the opposite of light therapy. It focuses on exposing people to complete darkness – blocking the blue spectrum lights (J. Phelps, 2007). It is used in BAD – manic patients. When the nights are long the values of melatonin are increased and they suppressed Epinephrine and Norepinephrine.
4. Electric-acupuncture	Its effect is connected with the ability to destroy the “pathologically stable rhythm” in depressive patients (N. Madjirova et al. 1997).

Knowing well some chronobiological features of the different psychiatric disorders could allow us to make the best diagnosis and prognostic features. That could give us an idea for the best choice of drugs and time for applying a treatment.

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X. NORMAL & ABNORMAL IN PSYCHOPATHOLOGY

What is Normal/Abnormal Psychology?

What can we said about the “Normal Psychology”?

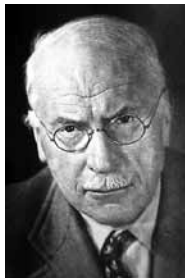
What we have in mind about the term “normal Psychology”? Are we speaking about normal of a particular group, gender, religion, society or age?

If we would like to understand an abnormal psychology we must first know what does the term Normal Psychology means.

“The normal does not exist. The average does not exist. We know only a very large but probably finite phalanx of decrete space-time events encountered and endured”.

Chris Lucas (*Timothy F. X. Axiom, 1986*)

CARL GUSTAV JUNG



”The real picture consists of nothing but exceptions to the rule”.

VICTOR FRANKEL



Man’s Search for Meaning

“An abnormal reaction to an abnormal situation is a normal behavior”.

VICTOR FRANKEL

“Society highly values its normal man. It educates children to lose themselves and to become absurd, and thus to be normal. Normal men have killed perhaps 100,000,000 of their fellow normal men in the last 50 years“.

R. Laing, (the politics of experience, 1967)

Abnormal psychology (**AP**) is a branch of psychology that dials with psychopathology and abnormal behaviour. It focused on the identification, treatment and understanding of abnormal behaviour and psychopathology.

The term “Abnormal Psychology” covers a broad range of disorders, from depression to obsession-compulsive to sexual deviation. AP is a division of psychology that studies people who are “abnormal” compared to the members of a given society. We must not neglect the fact that the many of the symptoms that are typical for some psychiatric disorders could be common for some persons that was previously thought.

The efforts of the scientists to make a perfect definition for normal were unsuccessful because the concept for normal changed with the age, culture, religion, family habits and the various social systems. It explains why there are various definitions for normal/abnormal in psychopathology.

Daniel Offer and M. Sabhin focused on 4 aspects of normal development

(Kaplan, Sadock, and Greb, 1994):

1. Normal as a health – it is based on the traditional psychiatric and medical ideas.

Normal as a health

- The ability of the person to build harmonic relationship with the surrounded persons and to take part and to be active in the biological and social changes.

(According to World Health Organization)

Abnormality behavior

- Abnormality (or dysfunctional behavior), in the vivid sense of something deviating from the normal or differing from the typical (such as an aberation), is a subjectively defined behavioral characteristic, assigned to those with rare or dysfunctional conditions. Defining who is normal or abnormal is a contentious issue of abnormal psychology.

From Wikipedia, the free encyclopedia

It is important to understand that normal-abnormal is not synonymous with good or bad. For example “intelligence”. A person who falls at the very upper end of the curve would fit under the definition of abnormal; this person would also be considered as genius. Obviously, this is an instance where falling outside of the norms is actually a good thing.

2. Normal is as a Utopia

***“Normal is a fix idea, It is something as a product of our imagination”.
S. Freud***

Freud’s structure of the mind:
According to Freud our Intrapyschic conflicts influenced our Id, Ego and Superego. This influenced on our thinking, but our thinking is driven by pleasure principles, reality principles and moral principles


Type of thinking	Driven by
Conscience	Moral principles
Logical; rational	Reality principle
Illogical; emotional; irrational	Pleasure principle

2. Normal as a statistic; under this definition of abnormality a person’s behavior or thinking could be classified as abnormal if it is rare or statistically unusual. For instance one may say that an individual who has an IQ below or above the average level of IQ in society is abnormal. For the 1st time statistic was used to measure the IQ.


In 1905 the Minister of education ordered the two psychologists Binet and Simon to make a questionnaire to determine the intelligence of 5, 6, 7 and 8 years old children. The aim was to establish which of them could go to school at the age of 5 or 6 year, and who – after the 8th year. They examined 5000 children aged between 5 and 8 years with their own questionnaire. By the method of statistic was determined the normal intelligence (see Stanford-Binet scale of Human Intelligence).

Normal as a statistic

Binet

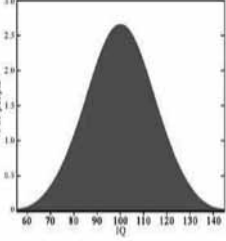


Simon



Stanford-Binet Scale
of Human Intelligence (IQ)

- Score Original Term Current Term
- 145 and over – Genius
- 120–144 - Exceptional
- 110–119 - High Average
- 90–109 - Average or Normal
- 80–89 - Dull Normal
- 70–79 - borderline Deficiency Mild disability
- 78–69 - Moderate disability
- 20–49 - Imbecile Severe disability
- Below 20 - Idiot, Profound disability



All deviation from the determined values (see the statistically formed bell) are deviated from the norm. But what can we say for persons with high intelligence?

3. Normal as a process – if we have in mind that the normal behavior of a person depends on many factors and we must mention some of them.

- **Normal according the stages of development of the personality** – for instance the age between 2-4 years is known as the “negative phase”. The children did not want to order anybody and do everything the opposite. The parents must not support, because after this age they will overcome this negativism.

- **Normal according the 8th stages of Erikson** that are characterized with the positive and negative influence during the various stages.

<p>1.Trust-Mistrust; 2.Autonomy-Doubt; 3.Initiative-Guilt; 4. Industry-Inferiority;</p>	<p>5. Identity-Confusion; 6. Intimacy-Isolation; 7. Generativity-Self-absorbtion; 8. Integrity-Despair.</p>
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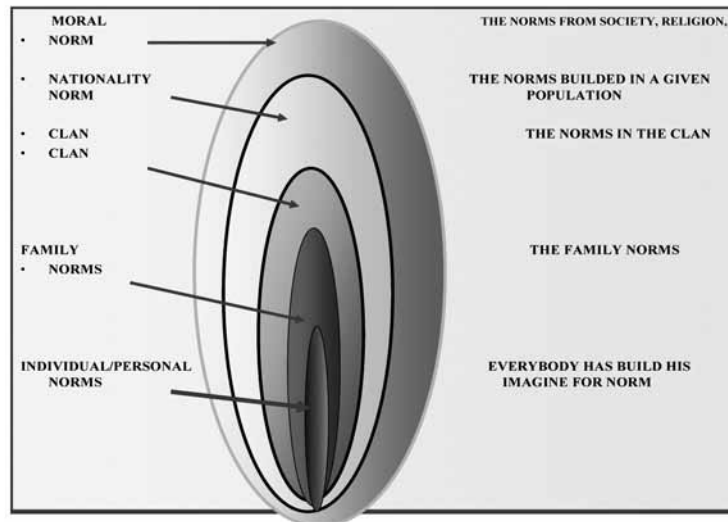
- **Margaret Mahler – discussed 4 phases in childhood.** She speaks for normal autistic phase till the 4th month and normal symbiotic phase – till the 5th months after the birth of the child.

- **Freud’s stages** – the little baby during the oral phase sucking and feeding are the principle pleasure. During this phase the child puts everything in his mouth, when the child is not satisfied bites, cries. But these reactions are not normal after that age.

- **Normal according the social development;** each society builds its own rules and laws that are changed during the various social regime and systems. Proto-Bulgarians’ Khan had to marry for the 2nd time when he is at 40 years old. But when they become converted to Christian-ity religion this tradition was stopped.

• **Normal according the cultural specificity of the person (The scale for social re-adaptation of Holmes and Rahe, 1967.** They established that the most stressful life events for their population were “The death of the spouse”, “The divorce”, “Party with the partner”. In our study in 2005 with the same scale only the 1st and the 2nd answers the same. More information could be found in chapter for “Stress”, p. 157.

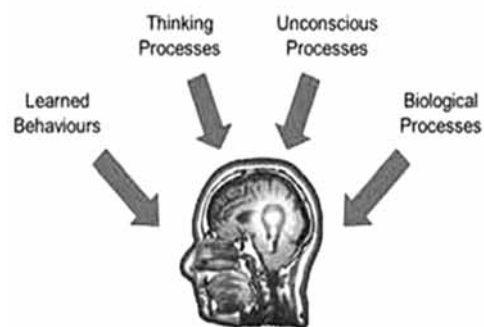
According to our point of view and having in mind the influence of various factors (internal and that of the environment) we could speak about personal, family, clan, nationality, and moral. There are some common things with Freud's theory for conscious.



• **Normal according their religion** – the various religions influenced on the behavior of their supporters. An old Eskimo-woman took some bread and meat, leaved the family and went in the forest. She was seated on a snow hill and spoke to herself: “Come white bear to eat me”. If it happens with an American or European old woman, her children will tell her: “You are mad and you must be hospitalized in a Psychiatric department”. But the old Eskimo-woman continued: “Come white bear to eat me. My son is a good hunter. He has a new gun. He will kill you and they will eat your meat. So I shall be again with my family.” Their religion make them to believe that in this way they can be among their relatives.

Behaviorists believe that our actions are determined by the experiences we have in life, rather than by underlying pathology of conscious forces.

Abnormality is seen as the development of behavior patterns that are considered maladaptive (i.e. harmful) for the individual *Behaviorism states that all behavior (including abnormal) is learned from the environment (nurture), and that all behavior that has been learnt can also be ‘unlearnt’ (which is how abnormal behavior is treated). Our society can also provide deviant maladaptive models that children identify with and imitate (re: social learning theory).*



What can we think about the psychopathological symptoms and syndromes?

In 1980 Piven had created his questionnaire that contained about 45 psychopathological symptoms and syndromes. He examines healthy persons (psychiatrists and students who took their exam in psychiatry).

He established that about 14% of them had some of the psychiatric symptoms. They had never had psychiatric problems and no of their relatives suffered of psychiatric disturbances.

In 1989 we examined 188 healthy persons (medical students after their exam in psychiatry and doctors) with his questionnaire. We established that 8.42% of them reported for episodic appearance of some of the symptoms, 4.94% periodically had some of the symptoms and 0.97% – constantly. This data show that almost 14.33% of the studied healthy persons reported for some of the psychopathological symptom without any psychiatric disorder. Again the question about normal/abnormal is questionable.

Perspectives in Abnormal Psychology – there are a number of different perspectives used in abnormal psychology. While some psychologists or psychiatrists may focus on single perspectives, many mental health professionals use elements from multiple areas in order to understand better and treat psychological disorders.

Behavioral	It focuses on observable behaviors. In behavioral therapy, the focus is on reinforcing positive behaviors and not reinforcing maladaptive behaviors. This approach targets only the behavior itself, not the underlying causes.
Medical	It stresses on the biological causes on mental illness. This perspective emphasizes understanding the underlying cause of disorders, which might include genetic inheritance, related physical disorders, infections and chemical imbalances. Medical treatments are often pharmacological in nature, although medication is often used in conjunction with some other type of psychotherapy.
Cognitive	It emphasizes on how internal thoughts, perceptions and reasoning contribute to psychological disorders. Cognitive treatments focus on helping the individual change his thoughts or reactions. This therapy might be used in conjunction with behavioral methods in a technique as cognitive behavioral therapy.

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XI. PSYCHIATRIC EXAMINATION

MEDICAL INTERVIEW

The interview between the patient and the doctor is not a conversation between two persons. The patient presents its complaints, but the doctor decides, which of them are necessary for him to build the true diagnose. Some persons speak too much, and most of their complaints are not important. Others do not speak about themselves and the doctor must ask them several times to understand their somatic and psychic state.

The doctors must be patient with their patients. They must have the ability to listen carefully, because it will help them to establish the diagnose. So it is necessary sometimes to interrupt them and please them to answer some specific questions. The interruption must be delicate.

The doctors must have in mind the life events, that are very important for some somatic and psychic disorders. We must not neglect the effects of psychodynamic factors, motivation, family influence, the cultural aspects, and the personality of the patients.

According to Kaplan and Sadock (1994) the components of each interview are:	<ol style="list-style-type: none"> 1. the beginning of the interview, 2. the interview itself, 3. the closing of the interview.
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The place for the interview - the patient must sit in a suitable armchair, the room must be in a quiet place, warm and in bright colours. You must listen carefully to the patient, and sometimes you can ask him additional questions. It is not polite to read a book or a newspaper during the examination of the patient. The distance between the doctor and the patient must be about 1 meter (D.Goldberg, 1987).

According to the Greek physician Hippocrates the doctor must look well and be well dressed.

According to a Latin proverb doctors who can take a good medical history, are the best doctors. He who asks well, is a good diagnostician.
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ANAMNESIS

The word anamnesis is a Latin word and it means a memory. Anamnesis is the medical history or the case history. Patients with somatic disorders could retell their medical history. It is not the same with psychiatric patients. Patients with neuroses can say to the doctor their complaints, but it is not the same with psychotic patients. It is necessary to speak with their relatives, if we want to understand the clinical picture of their psychic disorder.

The medical anamnesis is:

1. Childhood	his childhood history, the relationship between the parents and the other members of the family. If he is the only child in the family, the first or second child, or a neglected child and s. o.
2. Patient's personality	his character, personality and temperament.
3. Present anamnesis	The patients must say everything about their present state - what they feel at the moment.
4. Family anamnesis	We must ask if some of the patient's relatives are with the same somatic or psychic disorders in order to establish his genetic predisposition.
5. Some other diseases	other accompanying diseases
6. Damage habits	alcohol abuse, tobacco smoking,
7. Social anamnesis	His social activity and position, some data about his life.

INFORMED CONSENT

When physicians are sufficiently informed about the psychic and somatic patient's condition they must allow the patient to decide whether a medical procedure is acceptable in the light of the risk and the benefits and the available alternatives, including no treatment at all.

In general, informed consent consists of several points:

1. The patient must understand the nature of the procedure.
2. The patient must be familiar with risk of the procedure.
3. The physician must discuss the positive and the negative moments of the procedure.
4. The treatment must be voluntary.
5. The physician must inform the relatives of the patient about its condition, and it is more important for patients with psychoses.
6. Informed consent is obligatory all medical procedures, when the patient's consciousness is changed - surgeon operations, anaesthetics, administration of electroconvulsive therapy.
7. The treatment with new drugs.
8. The use of chemotherapy.

Case In 1976 a drunk man burned his right hand on a hot-plate. The surgeons decided to amputate his hand. When they informed the patient, he did not agree. Then they demanded a psychiatric consultation. The psychiatrist explained to the patient that his somatic condition was very serious, and if the surgeon did not make an amputation he could die. The patient's answer was: "Dear doctor, I am a swimmer, I cannot imagine my life without swimming any more. For me is better to die, if I cannot swim in the future. Can you imagine a bird without wings. I do not want to be such a bird." The conclusion of the psychiatrist was: "The patient's consciousness is clear, and we must have in mind his wish. He does not want his hand to be amputated. " After several months the patient recovered and he was very grateful to the psychiatrist who saved his hand.

The consent form is a written document outlining the patient's oral agreement. In this form is described the medical intervention with all positive and negative moments during the treatment. The patient has the right to refuse treatment.

Justice Benjamine Cardozo wrote, that every human being of adult years and sound mind has a right to determine what shall be done with his body (Kaplan & Sadock in Synopsis of Psychiatry. 7th edition. 1994, p 1178).

The consent form for psychotic patients - when a patient is with a psychosis as schizophrenia or affective disorder, he may not want medical intervention, as he does not agree with the psychiatric diagnosis. When the patient cannot be convinced, the psychiatrist must have the agreement of his relatives such as parents, children, wife, or other relatives. When the relatives do not give their permission and If the patient's behaviour is antisocial and he is dangerous for the others and for himself, we must inform the Prosecutor's office.

PERSONALITY

The personality is a set of habits that characterise the person in his way of managing everyday life under ordinary conditions.

Persona - with this term Jung denotes the disguised or masked attitude assumed by a person, in contrast to the more deeply rooted personality components. "Through his more or less complete identification with the attitude of the moment, he at least deceives others, and often also himself, as to his real character. He puts on a mask, which he knows corresponds with his conscious intentions, while it also meets with the requirements and opinions of his environment, so that first one motive then the other is in the ascendant. This mask I have called the persona, A man who is identified with this mask I would call "personal"(as opposed to Individual"). (Cited by R. Campbell, in Psychiatric Dictionary. 5* edition, 1981, p. 455)

The personality is relatively stable and predictable and for the most part it is ego-syntonic. The personality represents a compromise between inner drives and needs and controls that limit or regulates their expression.

It is difficult to make a clear distinction between normal and personality and the variations of the personality and character that extend beyond the normal range.

In DSM-IV the following personality disorders are recognized:

Paranoid	It is characterized by unwarranted suspiciousness and mistrust of people
Schizoid	It is insensitivity to other people's feelings, isolated life-style with-out overt longing for others.
Schizotypal	Oddities of thinking, perception, communication, and behaviour.
Antisocial	Maladaptive behaviour that does not recognize the rights of others.
Borderline	Often confused with neurosis, psychosis, mood disorders
Histrionic	Dramatic, emotional, impressionistic style.
Narcissistic	Exaggerated and exhibitionistic need for attention and admiration and overconcern with issues of self-esteem.
Obsessive-compulsive	Perfectionism and inflexibility predominate.
Dependent	Predominantly dependent and submissive.
Passive-aggressive	Covert obstructionism, procrastination, stubbornness and identification.
Depressive	These persons are pessimistic, unhedonic, duty-bound, self-doubting, chronically unhappy.
Self-defeating	Patients direct their lives towards bad outcomes; reject help or good outcomes; have dysphoric responses to good outcomes.

Hippocrates and Galen discussed the 4 classical temperaments

Sanguine – these persons attribute good humor and enthusiasm of this type to the predominance of blood over the other three humors.

Choleric – Galen attributed the irritability of this type to the predominance of the yellow bile over the other three fluids of the human organism.

Phlegmatic – Galen attributed the torpor and apathy of this type to the predominance of the phlegma (mucus secreted in the air passages of the throat), over the other three fluids of the human body.

Melancholic – they are depressed, sad, hesitating.

The classification of Hippocrates and Galen takes part in the 4 classical temperamental and constitutional types of antiquity.

Kretschmer's system of constitutional types.				
Type	Picnic	Athletic	Asthenic	Dysplastic
Total	Roundness of contour, amplitude of body cavities, and a plentiful endowment of fat.	Strong, vigorous, well-developed muscular system	General impression of deficiency in volume, combined with an average unlesened length	Varies from the average form of one of the main types. Most of them are into the category of eunuchoidism, infantilism
Head	Circular		Rises like a bud upon a lean	
Neck	Short neck	Strong and large shoulders	Long	
Profile	Smooth, without any sharply prominent parts	Gentle curve	Sharp irregularities - like a short egg form	
Face	Broad and fleshy	Steep, egg-shaped, long lips	Long	
Nose	Broad and fleshy	Gentle curve	A prominent feature and just out of the face	
Trunk	Thickset, and barrel-sphered	It appears inverted trapezoid	Long	
Limbs	Well developed	Long	long and thin	
Hands	Square or broad	Large	Long and thin	
Fingers	Fusiform	Blunt, thick, acromegaloid	Long and thin	
Skin		Thick with good turgor	Pale, dry & cold	
Abdomen	Is protruding and the xiphoid angle is wide		The cavity of the abdomen is poorly developed	
Kretschmer	Cycloid hypomanic type	Athletic type Schizophrenics type	Schizothyme hyperesthetic temperament	Schizothymic

Sheldon is an American physician, who developed his own version of a type of personality, based on their physical characteristics. His body types are:

- **ectomorph** – slender, or frail bodies, sensitive, delicate, religious.
- **mesomorph** – muscular and strong bodies, energetic, assertive, less religious,
- **endomorph** – round and soft body, interest in relaxation and sociability.

The Neo-Freudians accepted Freud’s basic ideas about the personality structures of id ego and superego, the importance of the unconscious and the early childhood. A. Adler and K. Homey agreed with the importance of childhood. These authors believed that the social, not the sexual, tensions of childhood were important for the personality formation.

E. Fromm supported Freud’s idea that the ego is important, but he did not agree with him about the role of sexual and aggressive impulses. K. Jung, another neo-Freudian, stressed on social factors. E. Erikson believed that Freud’s stages were not psychosexual, but psychosocial.

The ancient Greeks described the personality by classifying people to four types: melancholic (depressed), phlegmatic (unemotional), sanguine (cheerful) and choleric (irritable).

Hans Eysenck (1916) is an English psychologist. The Eysenck Personality Inventory Test is one of the most popular tests for determining the introverted and extraverted persons. The British Psychologist believe that many of our individual variations can be reduced to only two: extraversion-introversion and emotional stability and instability. The author notes that the four combinations of these two traits dimensions resemble the ancient Greeks personality (melancholic, phlegmatic, choleric and sanguine).

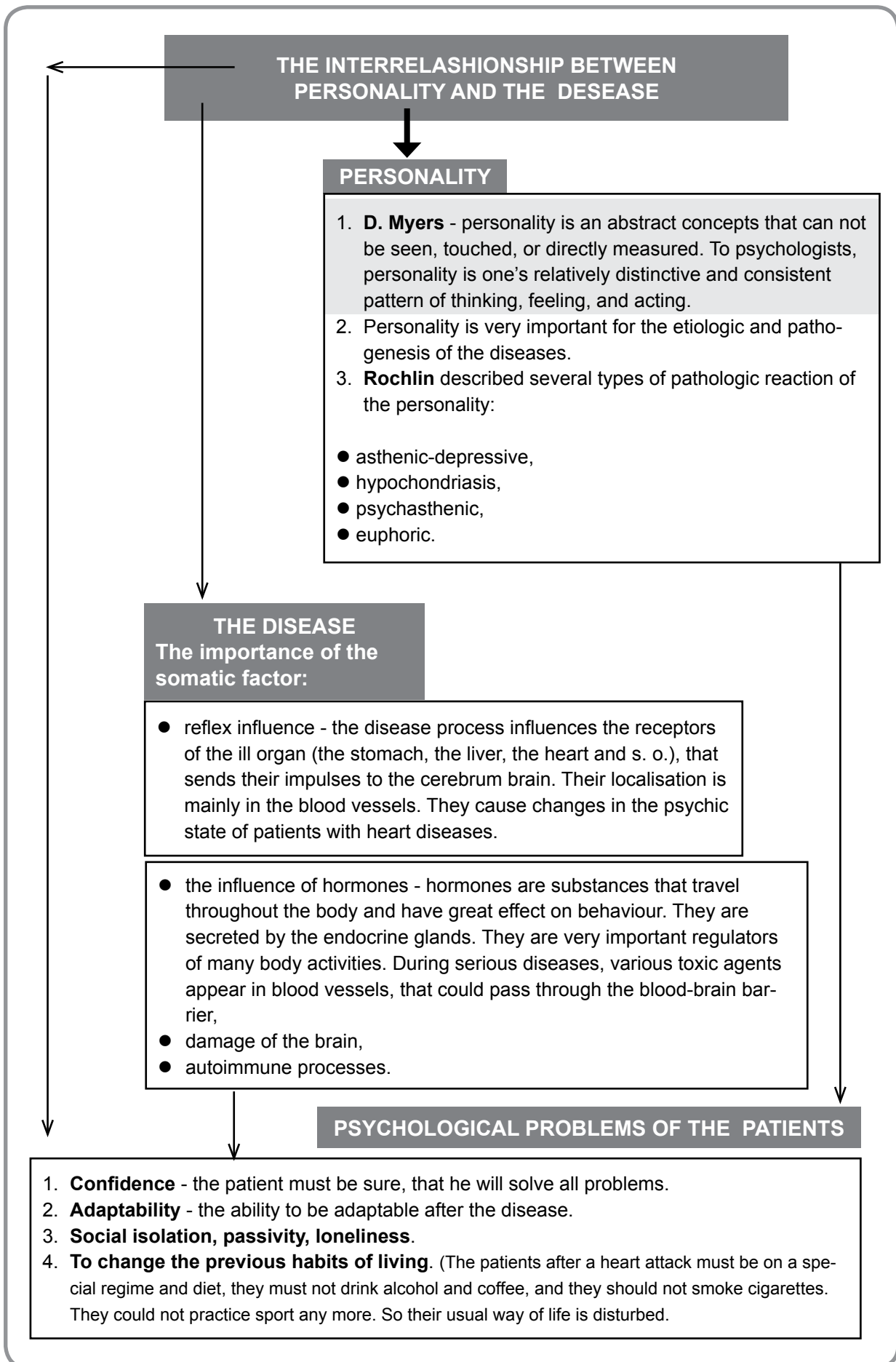
Some psychologists think that Eysenck’s test is not full and does not tell everything of someone’s personality.

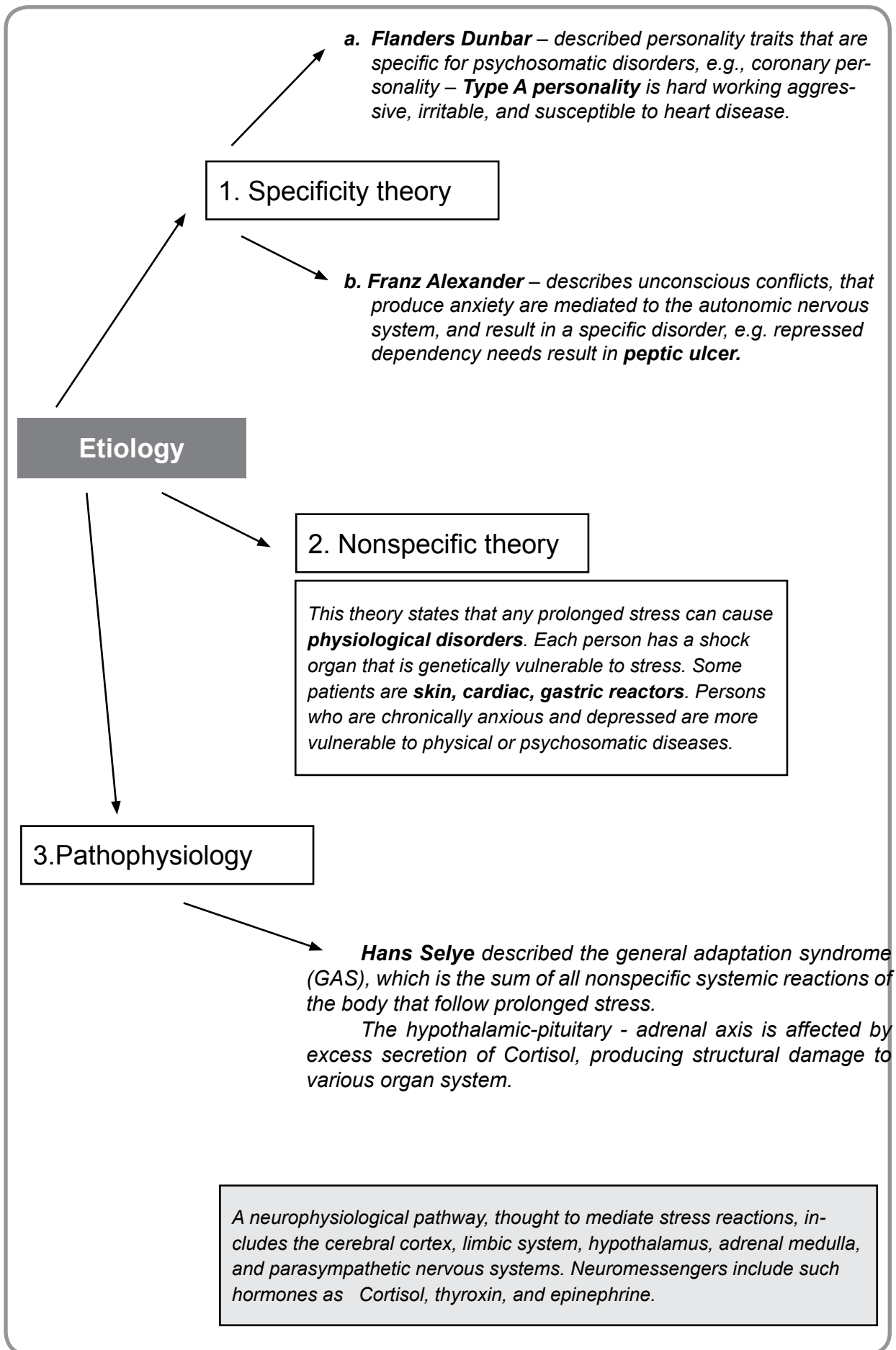
Raymond Cattell (1973) by the use of factor analysis established 16 personality traits.

UNSTABLE			
1. Moody 2. Anxious 3. Rigid 4. Sober 5. Pessimistic 6. Reserved 7. Unsociable 8. Quiet	MELANCHOLIC	CHOLERIC	1. Touchy 2. Restless 3. Aggressive 4. Excitable 5. Changeable 6. Impulsive 7. Optimistic 8. Active
INTROVERT			EXTRAVERT
1. Passive 2. Careful 3. Thoughtful 4. Peaceful 5. Controlled 6. Reliable 7. Calm 8. Even-tempered	PHLEGMATIC	SANGUINE	1. Sociable 2. Outgoing 3. Talkative 4. Responsive 5. Easygoing 6. Lively 7. Carefree 8. Leadership
STABLE			

In this table are shown various combinations of Eysenck’s two personality factors (introversion-extraversion and stability - instability). The four basic combinations of the two factors coincidentally resemble the personality types proposed by the ancient Greeks.

(By the idea of Eysenck & Eysenck, 1963: in “Psychology” by D. Myers, p.421)





XII. MENTAL DISORDERS (MD)

The definition and classification of MD is a very important key for psychiatrists about diagnoses. For mental state to be classified as a disorder, it needs to cause dysfunction. In the most international clinical documents is used the term mental “disorder” or “illness”.

There are two widely established classifications of MD:

ICD-10; Chapter V: *Mental and behavioural disorders since 1949 part of the International Classification of Diseases, produced by WHO (World Health Organization);*

DSM-V: *Diagnostic and Statistical Manual of Mental Disorders, produced by the American Psychiatric Association since 1952.*

The aim of these classifications is to standardized the criteria for the diagnosis of the various MD. The Chinese Classification pay attention to alternative medicine.

Although the diagnostic categories are referred to as “disorders”, they are presented as medical diseases, but are not validated in the same way as most medical diagnoses. Some neurologists argue that classification will only be reliable and valid when based on neurobiological features rather than clinical interview, while others suggest that the differing ideological and practical perspectives need to be better integrated.

ICD-10 classification (F99)

Code	Diagnosis	In these groups are included:
F00-F09	Organic, including symptomatic mental disorders	Cerebral diseases, brain dysfunction. Delirium, dementia, amnesia, and other organic mental disorders.
F10-F19	Mental and Behavioural Disorders due to Psychoactive Substance Use	Acute intoxication, harmful use, dependence syndrome, withdrawal state, amnesic syndrome, PD due to psychoactive substance use.
F20-F29	Schizophrenia. Schizotypal and Delusional Disorders	Schizophrenia, schizotypal disorder, persistent delusional disorder, acute and transient psychotic disorders, induced delusional disorders, schizo-affective disorders.
F30-F39	Mood (Affective) Disorders	Manic episodes, depressive episodes, bipolar affective disorder, recurrent depressive disorder, persistent mood disorder.
F40-F49	Neurotic. Stress-related and Somatoform Disorders	Anxiety disorders, phobic anxiety disorders, obsessive-compulsive disorders, somatoform disorders, reaction to stress, dissociative (conversion) disorder, adjustment disorders, other neurotic disorders.
F50-F59	Behavioural Syndromes Associated with Physiological Disturbances and Physical Factors	Eating disorders, no-organic sleep disorders, mental and behavioural disorders associated with puerperium, abuse of non-dependence-producing substances.
F60-F69	Disorders of Adult personality and Behavioural	Specific personality disorders, enduring personality changes, habit and impulse disorders, disorders of sexual preference, psychological and behavioural disorders associated with sexual development and orientation.
F70-F79	Mental Retardation	Mild, moderate, severe and profound mental retardation.
F80-F89	Disorders of Psychological Development	Specific developmental disorders of speech, language, scholastic skills, motor functions, mixed developmental disorders and pervasive developmental disorders.
F90-F98	Behavioural and Emotional Disorders with Onset Usually Occurring in Childhood and Adolescence	Hyperkinetic Disorders, conduct disorders, mixed disorders of conduct and emotions, tick disorders and others.
F99	Unspecified Mental Disorder	

DSM-5 Classification

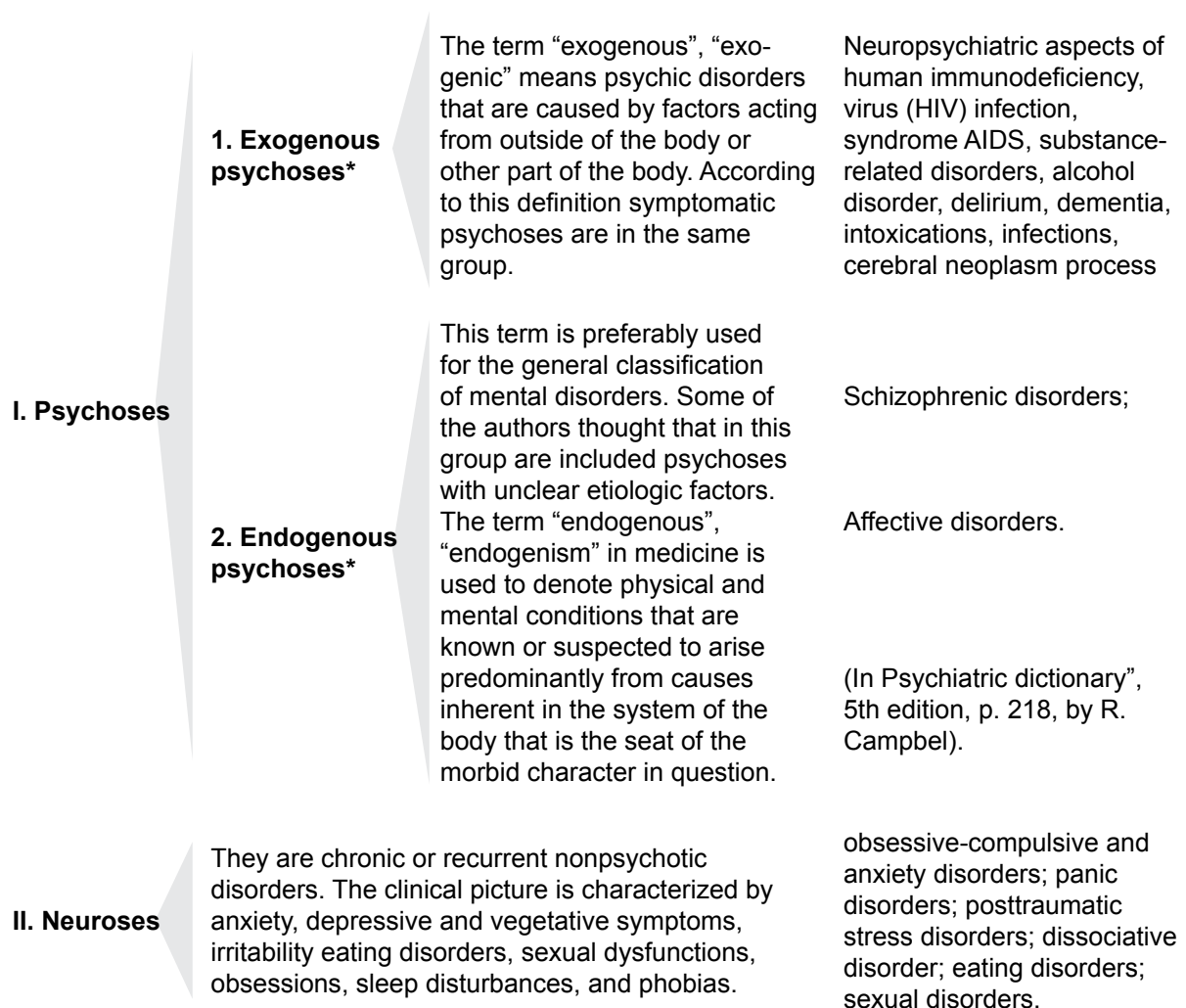
319	Neuro-developmental Disorders	Intellectual Disability Mild, Moderate, Severe, Pro-found
315.	Communication Disorder	315.39 – Languge disorder; 315.39 – Speech sound disorder; 315.35 – Stuttering; 315.39 – Social Communication Disorder; 307.9 – Unspecific Communication Disorder.
299.00	Autism Spectrum disorder	
314.01	Attention-Deficit/Hyperactivity Disorder	
307.	Motor Disorder	307.3 – Stereotype Movement Disorder; 307.23 – Tourette’s Disorder; 307.22 – Motor or Vocal Tick Disorder;
301.22	Schizotypal Disorder	
297.1	Delusional Disorder	
298.8	Brief Psychotic Disorder	
295.4	Schizophreniform Disorder	
295.9	Schizophrenia	
295.7	Schizoaffective Disorder	Bipolar type Depressive type
296	Bipolar and Related Disorders	296.4 – Bipolar I Disorder 296.89 – Bipolar II Disorder 301.13 – Cyclothymic Disorder
296.99	Depressive Disorder	296.2 – Major Depressive Disorder 296.3 – Recurrent Episode 296.4 – Persistent Depressive Disorder
309.21	Anxiety Disorder	309.21 – Separation Anxiety Disorder 309.29 – Specific Phobia 300.23 – Social Phobia 300.01 – Panic Disorder 300.22 – Agoraphobia 300.02 – Generalized Anxiety Disorder
300.	Obsessive Compulsive and Related Disorder	300.3 – Obsessive-compulsive Disorder 300.7 – Body dysmorphic Disorder 300.3 – Hoarding Disorder 312.39 – Trichotilomania
	Trauma and Stressor Relating Disorders	313.89 – Reactive Attachment Disorder 309.81 – Posttraumatic Stress Disorder 308.3 – Acute Stress Disorder
300.14	Dissociative Disorder	
307	Feeding and Eating Disorders	307.1 – Anorexia nervosa 307.5 – Bulimia nervosa
307	Elimination Disorder	307.6 – Enuresis 307.7 – Encopresis
780	Sleep-wake Disorder	780.54 – Insomnia Disorder 780.54 – Hypersomnolence Disorder 307.46 – Sleepwalking type 307.47 – Nightmare Disorder 333.94 – Restless Legs Syndrome
302	Sexual Dysfunctions	
	Disruptive, Impulse control and Conduct Disorder	301.7 – Antisocial Personality Disorder 312.33 – Pyromania 312.32 – Kleptomania
	Substance-Related Disorders	Alcohol-Related Disorders; Caffeine-Related Disorders; Canabis-Related Disorders; Hallucinogene-Related Disorders; Opioid-Related Disorder Sedative, Hypnotic, or Anxiolytic Use Disorder Stimulant-Related Disorder Cocaine-Related Disorder Tobacco-Related Disorder
	Neurocognitive Disorders	
301	Personality Disorder	
302	Paraphilic Disorders	

Psychoses

Psychosis – the root of this word comes from the Greek word “psyche” – it means a deep disturbances of s. b.’ psychic. The psychic disorders is characterised by a qualitative changes of the patient’s psychic state, misrepresentation of reality, and inadequate behaviour.

Origin of exogenous: French exogène exogenous, from exo- + -gène (from Greek – genēs – born) – more at – GEN.

In the past the classification of psychiatric disturbances are divided into two main groups as: psychoses and neuroses.



*1: produced by growth from superficial tissue <exogenous roots produced by leaves>

2a – caused by factors (as food or a traumatic factor) or an agent (as a disease-producing organism) from outside the organism or system <exogenous obesity> <exogenous psychic depression> <exogenous market fluctuations>

2b – introduced from or produced outside the organism or system; *specifically*: not synthesized within the organism or system.

We must underline that the classifications and the terms of psychiatric disorders were changed over time.

Cases reported in the literature:

*44-year-old female after severe hyponatremia caused unconsciousness, vomiting, seizures and **exogenous psychoses**. After rousing stimuli she showed no verbal response and did not followed any instructions. For 3 days she suffered from nausea and vomiting. Laboratory values included a Na serum level 97 nmol/l. CT-scan demonstrated no abnormal findings. Because of her severe arterial blood pressure she was treated with diuretic therapy. (C. Haensch et al.,1996)*

According to the present knowledge, there are three types of psychiatric disorders.

1. Organic psychoses;
2. Those in which the organic factor has not been yet proven;
3. Those, that are primarily due to a psychosocial factors.

Organic Mental Disorders (OMD)

The main features of OMD are that they have a demonstrable and independently diagnosable cerebral disease or disorder. Some times the clinical picture in the initial stages of organic brain illness can imitate the clinical picture of a psychiatric disorder (schizophrenia, mania, depression, neurosis, and s. o.). That is why when the clinical picture is look like any psychiatric disorder we are obliged to examine very correctly the patient's somatic status by various imagination methods (X-ray examination, radioscopy. scanner, PET – positron emission tomogram, and s. o.), EEG – electro-encephalographic examination, classic blood stamps, and some biochemical parameters.

The organic psychosis is an abnormal mental state with a known cause characterized by an altered perception of reality. This condition can be acute, as is the case when psychosis is caused by some form of intoxication, or chronic disturbances as dementia, traumatic brain injuries or drug abuse to the contraction of a brain disease. *Their symptoms vary from hallucinations, delusions, and thoughts disorders of various forms. The hallucinations are mostly visual, but sometimes could be verbal. Persons suffering from organic psychoses may suffer from delusions, strange believes that have no basis in reality, some patients developed paranoia, megalomania, incoherent speech or writing, depression.*

“Exogenous psychoses”, “organic psychoses” and “functional psychoses” had fallen out of common use.

Psychoses generally are divided into:	<ol style="list-style-type: none"> 1. Psychoses due to general medical conditions; 2. Traditional psychotic illness; 3. Substance induced psychoses.
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These disorders can be subcategorized into the following categories:	<ol style="list-style-type: none"> 1. Delirium; 2. Dementia; 3. Organic amnestic syndrome; 4. Other organic mental disorder.
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Delirium

It is the most often seen organic disorder in clinical practice (15%). The diagnosis is mainly clinical. It could be mild or severe. It could be caused by many disorders as: alcohol or sedative drug withdrawal; electrolyte or other chemical; drug abuse; urinary tract or pneumonia infections, various febrile states that could cause brain damage from stroke or dementia, poison, intoxications, surgery. Delirium occur consciousness in the continuum between normal awakesness /alertness and coma. During the 20th century delirium was described as a “clouding of consciousness”. Others accepted delirium as a disorder of attention, cognition, awakefulness, motor behavior, disturbed sleep-wake cycle a loss of normal circadian rhythm.

DEFINITION – it is connected with consciousness, drowsiness, disorientation, hallucinations (mainly visual or tactile), attention problems, sleepiness or severe agitation and irritability.

The most typical symptoms of delirium are:

1. **Consciousness** – (that is, reduced clarity of awareness of the environment, sustain, with reduced ability to focus, or shift attention). Disorientation about time and place.
2. **Cognition** (decreased in short-term memory and recall);
3. **Perceptual disturbance (hallucinations** – visual, in delirium tremens tactile);
4. **Circadian rhythm** – is disturbed, sleep is often with loss of the normal. The symptoms are more severe during the night. Onset of hours to days, and tendency to fluctuate, alteration of motor activity;
5. **Behavior may be either overactive or under active**; be slow moving or hyperactive;
6. **Thinking** – disorganized thinking, talking devoid of sense;
7. **Dementia**;
8. **Psychotic symptoms** – occur up to 50% of delirium patients.
9. **Other symptoms** – poor memory, delusions, fluctuation of mood, problems with concentration.



Pathophysiology of delirium

Animal model – the earliest models of delirium used an **antagonist of the muscarinic acetylcholine receptor, atropine**, to induce cognitive and EEG changes similar to delirium. Similar anticholinergic drugs such as biperiden and scopolamine have also produced delirium-like effects. These models, along with clinical studies of drugs with “anticholinergic activity” have contributed to a hypocholinergic theory of delirium. **Bacteraemia/sepsis** also could cause delirium. Modeling this in mice provoked brain dysfunction and probably a delirium-like state, although these animals are typically too sick to assess cognitively and measures such as EEG and magnetic resonance imagine spectroscopy are necessary to demonstrate dysfunction. These models are very important, because shows that even mild inflammation could be a key for clinical delirium. These models may be accompanied of synaptic loss, network disconnectivity, and primary pathology to produce exaggerated responses to subsequent inflammatory insult.

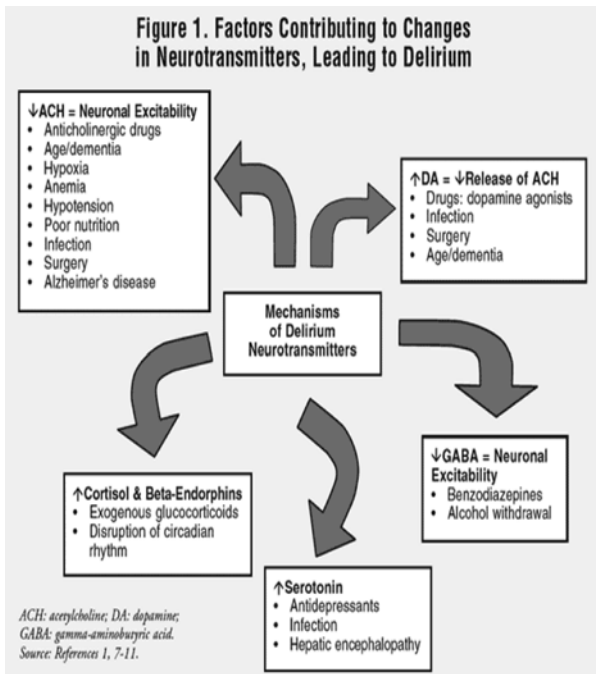
11-year-old boy, after oral ingestion of 2 mg lorazepam given by his mother, suffered from severe adverse effects. **Main symptoms were disorientation, restlessness, amnesia, anxiety, hostility, and rage reactions. Paranoid ideations and impaired perception were concluded from strange reactions and remarks of the child.** Symptoms are similar to the van der Kroef syndrome described after the use of rapidly eliminated high-potency benzodiazepines (Marcus et al.).

Cerebrospinal fluid biomarkers – 17 different biomarkers focused on a narrow range of biomarkers. Studies were small and the groups were heterogeneous – delirium may be associated with increased serotonergic and dopamine signaling, reversible fall in somatostatin; increased cortisol.

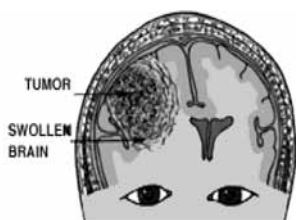
Neuroimaging – structural imaging shows diffuse brain abnormalities such as atrophy that could provoke delirium too. Longer duration of delirium was associated with smaller brain volume and more white matter disruption. The damage of the white matter predicts post-operative delirium. One functional MRI (magnetic resonance) reported a reversible reduction inactivity in brain areas localizing with cognition and attention function.

Neurophysiology – EEG showed general slowing of background activity. Data were contradictory – theta and alpha waves were different of delirium and non-delirium patients.

Neuropathology – acute respiratory distress syndrome and/or septic shock contributed to the delirium. There was established diffuse hypoperfusion, vascular injury with consistent involvement of the hippocampus.



Case with a 68 old man with cancer of the brain: he was a pensioner. His daughter and her son suffered from panic attacks. He had harmonious family. He had 2 children. He never had any psychiatric and psychological problems. Two month ago his daughter noticed that he had problems with his memory. He never smoked cigarettes, and does not use alcohol. He suffers from arterial hypertension since 10 years.



He was examined by a psychiatrist for the 1st time. His daughter said to me, that 1 month ago after a life event (the death of his aunt) he began to forget some elementary things – he can not remember where he had put his things, several times he could not remember the name of his daughter. He visited his general practitioner and was done a consultation with neurologist. They advised him to use Pyramem, but he did not improve.

He often forgot the door unlocked, and forgot the products that he had to buy from the market. He avoids to commune with other persons. He suffered from his problems. He often weeps and the tears were in his eyes. Even he was very sad and depressed, he continued to work as a guard.

Present status – he enters the room very slowly, he was little agitated. He related about the death of his aunt. “I was in the lake to fish. When I returned back and entered the room I saw my aunt to sleep with an open mouth. I was sure that she was sleeping. Then I left the room. I had to go to the market to buy something for supper. When I returned back again entered her room. She was in the same pose. It was strange for me. I closed the door and pleased my neighbour to come and to see her. After that something happens with me. I could not believe that she was death. I had a terrible headache and could not sleep. My arms begin to sweat, appears tremor and my arms numbs with colds.” He has no orientation for place, he does not know the date of the month, the month of the year, the day of the week, year. He can not say the street where he was living. He can not remember some words during our conversation. He can not remember the name of his daughter”. He began to weep and say that prefer to die.

Recommendation – in order to make more precise diagnosis we advised him to make the following examinations: psychological examination of memory and intelligence; to make a consult with neurologist and to be hospitalized in order to be excluded some brain' process. He must be plant for Computer tomography.

Preliminary diagnosis: Dementia (Senile dementia); Morbus Pick, Morbus Alzheimer); Affective disorder in involution age with the syndrome of pseudo-dementia. Intracellular space process

When the additional examinations were done was establish that he had cerebral neoplasm process, **that could not be operated, because of the metastasis.** Two months later he died.

11-year-old boy, with psychiatric symptoms, who was consulted in the pediatric clinic. The boy exhibited anxiety, sometimes exaggerating to panic reactions, rage, and disorientation. Because of the boy's behavior it was presumed he was having delusions. Careful physical examination revealed evidence of physical abuse. This article alerts readers to the possible combination of physical abuse and purposeful drug administration

Delirium tremens (DT)

DT is a severe form of alcohol withdrawal that involves sudden and severe mental or nervous system changes. It could occur when you stop drinking alcohol, after a period of heavy drinking. It is most typical for persons with a history of alcohol withdrawal. DT affects people who had an alcohol habit. They used alcohol daily for more than 10 years.



Symptoms:

**Body tremors, restless legs;
Hallucination (visual, tactile)
Changes in mental function;
Agitation, irritability,
Excitement, fear;
Confusion, disorientation;
Delirium;
Quick mood fluctuation;
Sensitivity to light, sounds, touch;
Stupor, sleepiness, fatigue;
Seizures (generalized-tonic-clonic);
Anxiety, depression.**



Symptoms mostly occur 48-96 hours after the last drink, but they may occur 7 to 10 days after the last drinking. The disorder continued about 5-7 days.

Two psychiatrists after a party went to the hotel-room. During the night Mr. Ivanov awakened and saw many insects on the wall of the room. He wakened his colleague and asked him: "Do you see some insects on the wall?" His colleague answered: "Yes I see many black-beetles". Mr. Ivanov calm quiet and said: "I have not delirium tremens".

2 real stories for DT



A patient with DT visited his doctor and said: "Doctor I could not sleep all the night, because I was troubled by various animals that I tried to throw away." He continued to throw away the "imagine" animals at the doctor". The doctor said: "Please do not throw them on me."

Dementia

Dementia is a chronic organic mental disorder that is characterized with decrease of intellectual functions, decrease of memory (predominantly of recent memory, especially in early stages), deterioration of the personality. Other common symptoms include emotional problems, language problems, decrease motivation. The most common type of dementia is Lewy body dementia (15%). In DSM-5 dementia was reclassified as a neurocognitive disorder. Alzheimer's disease is near 60-80% of all cases. The second most common dementia type is vascular dementia (near 25%), which appears after a stroke. Some others conditions are thyroid problems and vitamin deficiencies.

Globally dementia affected 36 million people. About 10% of people develop dementia at some point in their life. It becomes more common with the age. About 3% of people between the ages 65-74%; 19% between 75-84, and nearly half of those over 85 years of age. As more people are living longer the percentage of dementia is increased.

The most common affected spheres by dementia include memory, visual-spatial, language, attention, and executive function (problem solving). Depression affects 20-30% of people who have dementia, and about 20% have anxiety.

Most types of dementia are slow and progressive. By the time the person shows signs of the disease, the process in the brain has been happening for a long time. It is possible for a patient to have two types of dementia at the same time. About 10% of people with dementia have what is known as mixed dementia, which is usually a combination of Alzheimer's disease and another type of dementia such as fronto-temporal dementia or vascular dementia.

Signs and symptoms of dementia

1. Disinhibition and impulsivity;
2. Depression and/or anxiety;
3. Agitation;
4. Balance problems;
5. Tremor;
6. Speech and language difficulty;
7. Trouble eating or swallowing;
8. Delusions (often believing people are stealing from them) or hallucinations;
9. Wandering or restlessness
10. Memory distortions (believing that a memory has already happened when it has not, thinking an old memory is a new one, combining two memories, or confusing the people in a memory);

Psychoses (often delusions of persecution) and agitation/aggression also often accompany dementia. Each of these must be assessed and treated independently of the underlying. Dementia is not a specific disease. It is an overall term that describes a wide range of symptoms associated with a decline in memory or other skills severe enough to reduce a person's ability to perform everyday activities.

Nona is 75 years old. Since several years she is with dementia. The doctor shows her a photograph of the famous Bulgarian hero Vassil Levski. She looked at it and said: "I know him, but I can not recognize him. Who is he?" A patient with chronic schizophrenia that is near by her added: "Don't you know that he is our national hero Levski"




Causes

Dementia is caused by damage to brain cells – this damage disturbed the ability of brain cells to communicate with each other. When the normal communication of the cells is damaged, thinking, behavior and feelings can be affected. The brain has many distinct regions, each of which is responsible for different functions as memory, judgment and movement. When cells in these regions are damaged, they cannot function normally.

Stages of dementia	Early	The person shows symptoms of noticeable to the people around them. The symptoms depend on the type of dementia. They have difficulties with the more complicated with the everyday engagement. They still can usually care of themselves, but may forget things like taking pills, or washing cloths in washing machine, and need s.o. to remember for their duties.
	Middle	The process progressed, the symptoms worsen. MMSE is 6-17. Appears retrograde amnesia (Ribot's law, recent memories are more likely to be lost than the remote memories. If a person has Alzheimer's dementia almost all new information will be lost very quickly. These persons can not usually function outside of his/her own home, and should not be left alone. They are not able to care for themselves and required assistance for personal care and hygiene other than simple reminders.
	Late	Their symptoms go deeper. They can not be alone, as they can not orient and if they are out of their house they could lose in the way to their home. They need 24-hours supervision to ensure personal safety, as well as to ensure that basic needs are being met. They could not care for their personal hygiene. They could not recognize the real danger such as hot stove. Their appetite is declined to the point that they do not want to eat at all. They may not recognize familiar people. Their sleep habit is changed too.

Causes

<p>Reversible causes:</p> <ol style="list-style-type: none"> 1. Hypothyroidism; 2. Vitamin B12 deficiency; 3. Lyme disease; 4. Neurosyphilis. 	<p>Cause in Alzheimer' dementia</p> <ol style="list-style-type: none"> 1. Hypocampus 2. Atrophy in temporal lobe 3. Atrophy in parietal lobe
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<p>Causes of vascular dementia (depends on the damage part of the brain)</p> <ol style="list-style-type: none"> 1. Hypocampus; 2. Thalamus; 3. High blood pressure; 4. Atrial Fibrillation; 5. High values of cholesterol; 6. Diabetes; 7. Heart attack or angina. 	<p>Comparison of a normal aged brain (left) and the brain of a person with <u>Alzheimer's</u> (right).</p> <div style="text-align: center;"> <p>Healthy Brain Severe AD</p>  </div>
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Dementia with Lewy bodies	hypoperfusion, occipital hypometabolism
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**There are different classifications of dementia.
According to Charls Davis they are divided into:**

1. Alzheimer's disease (AD): is the most common cause of dementia in people over age 65 with cause possibly related to amyloid plaques and neurofibrillary tangles; almost all brain functions, including memory, movement, language, judgment, behavior, and abstract thinking, are eventually affected.

2. Vascular dementia: is the second most common cause of dementia caused by brain damage from cerebrovascular or cardiovascular problems (strokes) or other problems that inhibit vascular function; symptoms similar to AD but personality and emotions effected only late in the disease.

3. Lewy body dementia: is common and progressive where cells in the brain' cortex die and other contain abnormal structures. The symptoms are like that of Alzhemeir's desease, but include hallucinations.

4. Frontotemporal dementia: degeneration of nerve cells in the frontal and temporal brain lobes and some genetic factors (a family history of the disease); symptoms in patients (usually ages 40-65) have judgment and social behavior, increased appetite, compulsive behavior and eventual motor skill problems and memory loss.

5. HIV-associated dementia: is due to infection of the brain with HIV virus; symptoms include impaired memory, apathy, social withdrawal, and concentration problems.

6. Huntington's disease: is a heredity disorder (genetic predisposition is 50%), symptoms begin in 30-40 year old people with personality changes such as anxiety, depression and progress to show psychotic behavior severe dementia and chorea (arrhythmic movements of the body).

7. Dementia pugilistica: it is due to traumatic injury (often repeatedly) to the brain; symptoms commonly are dementia and parkinsonism (tremors, gait abnormalities).

8. Corticobasal degeneration: is a progressive nerve cell loss in multiple areas of the brain; symptoms begin at about age 60 on one side of the body and include poor coordination and rigidity with associated visual-spatial problems that can progress to memory loss, hesitant speech and dysphagia (difficulty swallowing).

9. Creutzfeldt-Jakob disease: is a rare disease, connected with a gene mutation. Rapid death, about an year after the appearance of the 1st symptoms. The beginning is over 60 years, the symptoms are personality change, poor coordination, coma before death.

10. Other rare hereditary dementias: develop between 50-60 years old and their symptoms are poor reflexes, dementia, hallucinations, paralysis and most develop coma before death.

11. Secondary dementias: These dementias occur in patients with other disorders of movement such as Parkinson's disease or multiple sclerosis.

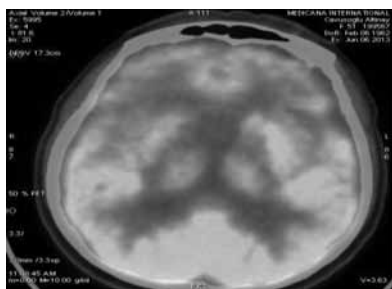
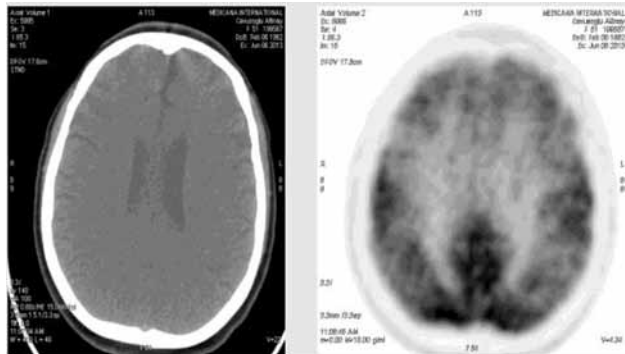
12. Dementias in children: infections, trauma and poisoning can lead to dementia in both children and adults, there are some dementias that are unique to children but may result in mental problems, seizures, reduction or loss of motor skills, blindness, neurodegeneration and death.

13. Other conditions that may cause dementia: reactions to medications, endocrine and metabolic problems, nutritional deficiencies, infections, subdural hematomas, poisoning, brain tumors, anoxia (lack of oxygen), heart and lung problems.

Case of 50 years old female, Helena – she had a normal development during her birth, and early childhood. She finished economic, and worked as a book-keeper in her native town. At the age of 20 she married and had one son. He finished his education as an engineer, and lived alone in Sofia. Her hobby was sport – she played handball and basketball, and during the last 5 years – express messenger. She had very good relations with her husband, her son, and her relatives. She was devoted to her family. When she was at the age of 43-years she received vertigo, and for a period of 18 months she had discomfort and used cipralex (antidepressant drug). Three years later her mother died, and she was very anxiety, because between them the connection was very strong. An year later her son divorced with her betrothed. In this period there was a conflict between her and her son. For the first time he was unusually angry with her. After this incident she became very sad, she often wept, she was very depressed and could not sleep, she had no appetite and no wish to communicate with s. o. She begins stutter. She continued with her hobby, about 3 times in a week she goes to swimming bath. She continued to drive the car, but her cousin noticed that she did not keep the road signs. Some times she thought that forget her keys or her swimming costume. The last several months she had speech problems. Since one year she is in menopause.

Her relatives connected this state with the various life events and specially with the incident with her son. She was consulted with a psychiatrist and he thought for reactive depression and made a prescription with antidepressant drug. Her husband arranged a consult in Istanbul with neurosurgeon and made a computer-tomography. The specialist did not find any pathology in her neurological status. But the patient did not feel well and her healthy state became decreased. She was seen by many psychiatrists and all of them thought the problem was psychological. She was advised to be treated with hypnosis in order to forget the unpleasant incident. So she came to me with the idea to make her hypnosis.

Present status: during the consultation she was little agitated, she looked at me helplessness when she was not able to answer to some of the questions. She shared that she is depressed, and had no will to do anything and to communicate with other persons, her speech was very slow, the impression was that she had problem to find the most suitable word. The relatives connected it with the fact that she is not a Bulgarian, even she knew very well Bulgarian language before the problems.



She is well orientated for her personality, for place, she knows the date and the month of the year. About her memory I pleased her to repeat the names of 5 Bulgarian towns. She repeated them very slowly, but not in the same order, as I had said to her. She could not make interpretations of proverbs. She was examined by Mini-Mental state examination. Her answer was about 25 points that speaks for light dementia.

The data of computer tomography and of the neurologist examination showed that she had fronto-temporal dementia.

Conclusion – I explained the patient that hypnotherapy is not the best therapy for her. I stopped antidepressant drug and advised her to make a consult with neurologist and to repeat the computer tomography examination. The therapy was – axura ½-1 tablet daily, Atarax, and Aminalon. Her memory little improved. **One year after that the patient died.**

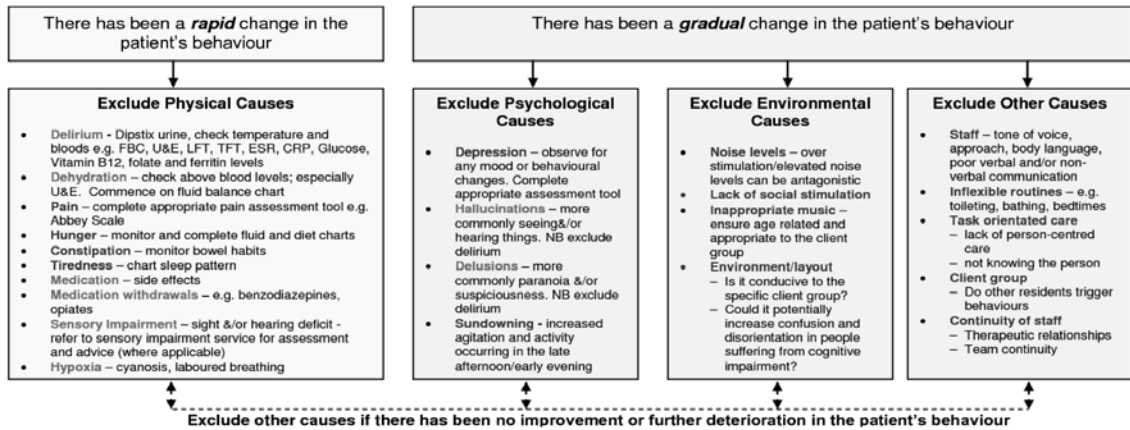
Behavioural and Psychological Symptoms Associated with Dementia (BPSD)



Quick Reference Guide

The following is a guide to causation and management in behaviour which challenges the delivery of care of patients with Dementia. Dementia is the deterioration of a person's intellect, emotions, behaviour and functioning. In both the moderate and severe stages of the disease the person may display BPSD including: aggression, agitation, wandering, anxiety, irritability, loud and/or repetitive vocalisation, apathy, repetitiveness, uncooperativeness, sexual disinhibition, inappropriate urination/defaecation, disturbed sleep, sundowning etc.

This guide has been designed to be used by all care staff to assist in the management of BPSD and to eliminate possible causes for changes in emotions, behaviour and functioning. It should be referred to in the first instance, prior to utilising sedating medications or referring to the appropriate services.



Care Home Liaison Psychiatry Service: 01324 811162 Community Mental Health Team (Elderly): 01324 811166

Key

- Initiate appropriate assessments/interventions then refer to GP/appropriate services
- Carry out recommended action(s) then refer to GP/appropriate services if no improvement in the patient's condition
- Liaise with line manager to resolve issues; seek advice from appropriate services if required

November 2007

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XIII. PSYCHOSOMATIC DISORDERS

The term “Psychosomatic disorders” is introduced by Heinroth in 1918.

According to DSM-IV, psychosomatic disorders are subsumed under the classification of psychological factors affecting medical conditions. In ICD-10 these disorders are under the group “Psychological or Behavioural factors associated with disorders or diseases classified elsewhere.

DEFINITION – the term “Psychosomatic disorders” refer to physical conditions caused or aggravated by psychological factors. Although most physical disorders are influenced by stress, conflicts, or generalized anxiety, some disorders are more affected than others.

George Engel (1977) gave a biopsychosocial model in order to explain the complex interaction between biological, psychological and social spheres resulting in a psychosomatic illness. This view became very famous and it could be seen on the next figure (in Ahuja, 2002, p.153).

Biological Sphere:

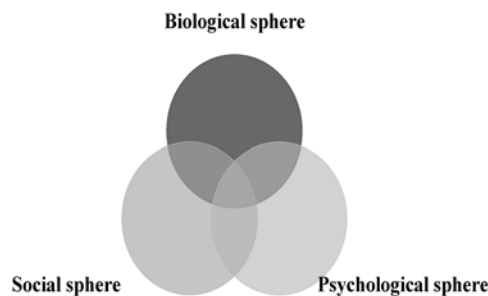
Personality factors;
Endocrine factors;
Immune system;
Neurotransmitters.

Psychological Sphere:

Genetic factors;
Emotions;
Motivation.

Social Sphere:

Social support;
Stressful life events;
Social norms.



Classical psychosomatic disorders by Alexander:

1. **Bronchial Asthma;**
2. **Ulcerative colitis;**
3. **Peptic ulcer;**
4. **Neurodermitis;**
5. **Thyrotoxicosis;**
6. **Rheumatoid arthritis;**
7. **Essencial hypertension.**

Beginning from the 7th classical psychosomatic illness, their number has continued to increase as the evidence for their biopsychosocial causation became more proved. Psychosomatic disorders affect various systems and organs of the human body. Today the number of psychosomatic illness is almost endless. In this list are included the diseases from the counted systems and organs:

1. Cardiovascular disorders	Essential hypertension, coronary arteri disease, or post-cardiac surgery delirium, migraine, cerebrovascular disease, mitral valve prolaps syndrome.
2. Endocrine disorders	Diabetes mellitus, hyperthyroidism, Cushing syndrome, peri-meno-pausal syndrome, amenorrhea, menorrhagia.
3. Gastro-intestinal disorders	Esophageal reflux, peptic ulcer, ulcerative colitis.
4. Immune disorders	Auto-immune disorders, allergic disorders, viral infections.
5. Musculo-sceletal disorders	rheumatoid arthritis.
6. Respiratory disorders	Bronchial asthma, Hay fever, vasomotor (allergic) rhinitis.
7. Skin disorders	Psoriasis, pruritus, urticaria, alopecia areata, acne vulgaris, psychogenic purpura, trichotillomania, dermatitis artifacta, lichen planus, warts.

Psychosomatic disorder, called also Psychophysiological disorder, is characterized that psychological stresses affect physiological (somatic) functioning to the point of distress. It is a condition of dysfunction or structural damage in bodily organs through in appropriate activation of the involuntary nervous system and the glands of internal secretion. Thus the psychosomatic symptom emerges as a physiological concomitant of an emotional state. *In a state of rage, for example, the angry person's blood pressure, pulse rate, and respiratory rate are increased. When the anger passes, the higher values of these parameters decreased and normalized.* If the person's aggression is chronic and he is not able to overcome, the physiological symptoms associated with the angry state persist. With the time in this person appears predisposition of physiological dysfunction. Very soon after that he received physical signs and symptoms, but he does not pay them any attention.

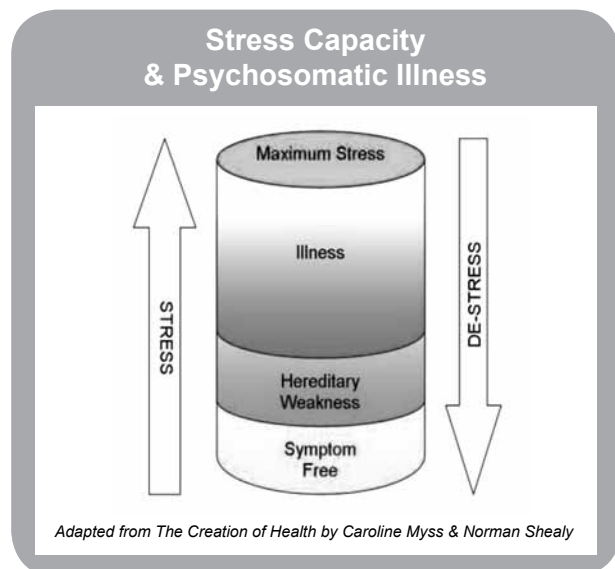
Stress and psychosomatic illness

The key question about stress and psychosomatic illness is “how much, how long and how strong must be this stress to damage our organs.

Various persons have different tolerance level for stress. When s.o. reached his limit for stress some forms of damage (physical, emotional, or both) could appear. It is very important how much stress s. o. could carry off. There are various aspects of living that contribute to our stress level.

*There are three types of “stressors” that cause a stress reaction in the body: **chemical, physical, emotional.***

Psychosomatic illness refers to a physical dysfunction that is primarily caused by some form of emotional stress – mild depression, work-related stress and even extreme personality traits can cause psychosomatic illness.



Psychophysiology

The theory of JW Pennebaker et al. (1987) – the theory about the inhibition of psychosomatic disorders could not be explained only with traumatic events and long-term health problems. The authors made experiments in two variations:

Experiment No 1 – it is with a patient that talked about an extremely stressful event. The story was recorded. In the same time were measured skin conductance, blood pressure, and heart rate. Based on the depth of the patients' sincerity story they were divided into two groups – high and low disclosed. Talking about their traumatic stressful events was associated with decreased behavioral inhibition: the values of skin conductance were lower, whereas the cardiovascular activity was increased, among high discloser.

Experiment No 2 – subject both talked aloud and thought about traumatic events and about plans for the day. Half of them were alone in an experimental cabin and talk into a tape recorder; the other subjects talked to a silent “confessor” who sat behind the curtain. Among high disclosers, both talking and thinking about traumatic events produced lower skin conductance levels in comparison with the participations that were speaking about plans for the day.

The main etiological factors are (For more information see page 212):

The specific theory of Franz Dunbar and Franz Alexander;

The non-specific theory;

Pathophysiological moments – GAS of Hans Selye.

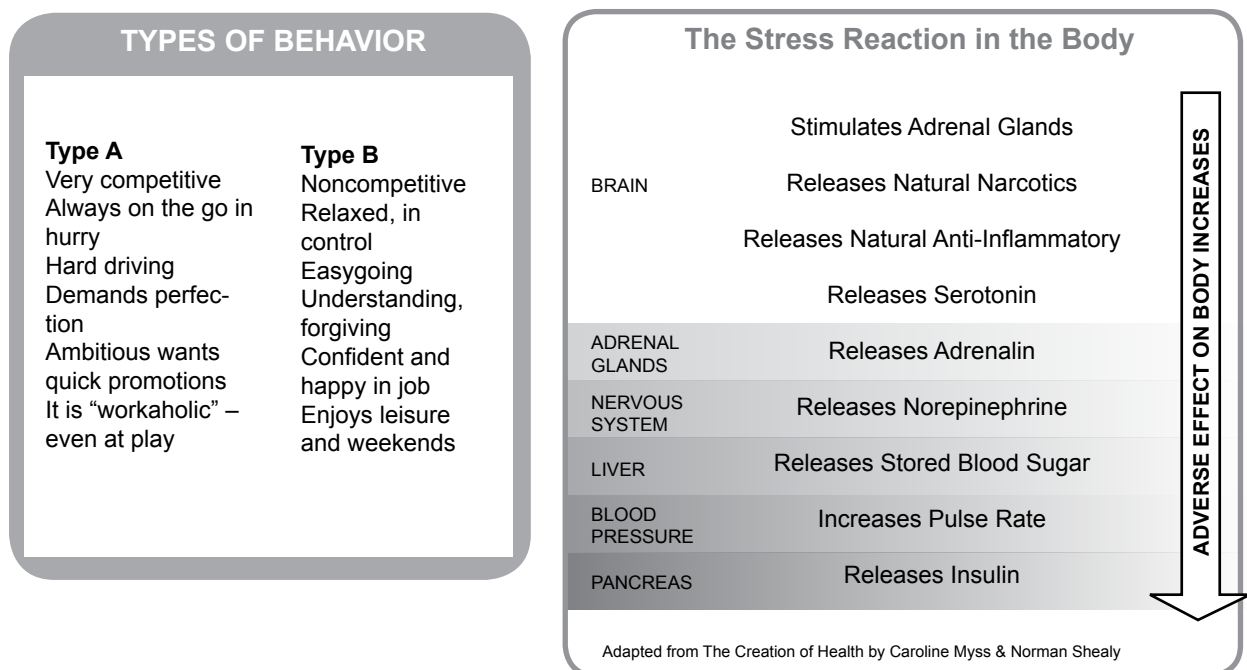
Psychosomatic medicine is connected with the names of Franz Alexander and Heleh Dunbar.

Franz Alexander, the father of psychosomatic medicine, suggested that the damage of a given organ depends on **specific personality**. They believe that the form the disorder is due to individual vulnerabilities. Emotional stress is the reason for various illnesses, and it is not obliged to be psychosomatic (e.g. cancer, diabetes) in individual predisposed to them. In the group of psychosomatic disorders resulting from stress may include hypertension, respiratory ailments, gastrointestinal disturbances, migraine and tension headaches, pelvic pain, impotence, frigidity, dermatitis, and ulcer. (Encyclopaedia Britannica).

He draws a distinction between classical mental illnesses and disorders of organ function related to disturbances of the autonomic nervous system. This approach disputed the prevailing notion (espoused by psychoanalysts such as Georg Groddeck) which drew no boundary between illnesses of the mind and body. Psychosomatic medicine proposes that psychic stimuli can trigger a chain of physiological responses that can affect bodily function and somatic diseases.

Helen Flanders Dunbar obtains degrees in both divinity and medicine and is committed to integrating religion and science. She co-founds the Clinical Pastoral Education movement to provide clinical training to theological students and also studies religion as an unifying factor in personal life and its role in healing.

Dunbar surveys a range of physical illnesses and personality types and at first correlates personality types with diseases. Later Dunbar emphasizes the importance of emotions in disease. Bodily diseases such as peptic ulcer and coronary artery disease are associated with psychic stimuli and personality types.



A neurophysiological pathway, thought to mediate stress reactions, includes the cerebral cortex, limbic system, hypothalamus, adrenal medulla, and parasympathetic nervous systems. Neuromessengers include such hormones as cortisol, thyroxin, and epinephrine.

Situation	Type A	Type B
What will You do if s. o. get ahead of the tail?	I'll cry, I'll be angry with him and I'll put him at the tail- end.	I'll try to justify his behavior. I'll not be angry with him.
What will you do if before you at the tail is a patient with Parkinson disease?	I'll be angry, and tell him to go shopping when the other persons are working.	I'll help him to put his products in his sack, I'll justify him in front of the others.
What will You do if s. o. speaks ill of you or against You?	I'll cry, I'll hurt him, I'll beat him, I'll convict him for offence.	I'll try to clear up the problem, I'll give an explanation for his behavior.
What will You do if there is a competition for a very important position for You?	I'll study very hard, I must be the winner, if I had the ability I'll kill him not to be my competitor?	I'll try, I'll read, I'll say: If it will be good for me let us be the winner, but it depends on God's will.

Homework

1. Can you make a description of a person with Type-A behavior, or Type-B behavior?
2. Can you say for yourself what kind of Type-behavior are you?
3. Do you think that one can be expressed Type A or Type-B behavior personality, or in some situation can be Type-A, in other situation can be Type-B behavior personality?
4. Can you determinate the Type-A and Type-B behavior of the figures of on the picture to the wright.



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XIV. SCHIZOPHRENIA (Sch)

Schizophrenia is a chronic mental disorder that causes to abnormally interpret reality. Sch has touched specially the usual balance of emotions and thinking. Other symptoms of Sch could be delusions, hallucinations, thought disorders, disorganized behaviour, loss of interest in everyday activities, lack of emotions, reduced ability to plan or carry out activities, neglect of personal hygiene, social withdrawal and loss of motivations. Patients may also have problems with making sense of information, difficulty paying attention, and memory problems.

Sch is a basket in which we can throw all known symptoms that we have met. So in common Sch is greater imitator of various symptoms than in hysteria.

Schizophrenia – the origin of the term comes from the Greek roots *skhizein* (“to split”) and *phrēn* (“mind”). It is a mental disorder characterized by abnormal social behavior and failure to recognize what is real. Common symptoms include false beliefs, unclear or confused thinking, auditory hallucinations, reduced emotional expression and social engagement, and inactivity. Diagnosis is based on observed behavior and person’s report. Sch is a chronic, severe, and disability brain disorder that has affected people throughout history. Family and society are affected by schizophrenia too. Many people with this disease have difficulties – they can not find a job or caring for themselves, so they almost always need the help of others. About 1% of the population suffered from Sch. The distribution between males and females is almost the same. It is discussed whether the diagnosis represents a single disorder or a number of separate syndromes.

Definition – schizophrenia is a disorder of unknown causes: it is characterized by psychotic symptoms that significantly impair functioning and that involve disturbances in feeling, thinking, and behaviour.

History

Emil Kraepelin in 1896 determined 2 clinical types of major psychiatric illness: dementia praecox, and manic depressive psychosis. In the group of dementia praecox he included various psychiatric illnesses which were earlier thought to be distinct illnesses. He recognized the characteristic features of dementia praecox, e. g. delusions, hallucinations, disturbances of affects and motor disturbances. **Eugen Bleuler** (1911), while remaining dementia praecox as schizophrenia (meaning mental splitting), recognized that this disorder did not always is with a poor prognosis, as it is described by Kraepelin.

Symptoms

The symptoms in Schizophrenia fall into 3 main group: positive, negative and cognitive.

- **Positive symptoms** – these symptoms are psychotic and they are not spread among healthy persons. The psychotic patients “lose touch” with reality. They can be very severe, or hardly noticeable.

- **Negative symptoms** – they are associated with disruption to normal emotions and behavioural. It is very difficult these symptoms some time to be noticed as they can be mistaken for depression or other conditions.

- **Cognitive symptoms** – just like the negative symptoms they could not be recognized at the beginning of the disorder, but they could be found by psychological tests.

Positive symptoms	Negative symptoms	Cognitive symptoms
1. Hallucinations; 2. Delusions; 3. Thought disorders; 4. Movement disorders	1. Flat affect; 2. Lack of pleasure in everyday life 3. Lack of ability to begin and sustain planned activities	1. Poor “executive functioning” 2. Trouble focusing or paying attention; 3. Problems with “working memory”

The disorder is chronic and generally has:

- A prodromal phase;
- An active phase;
- A residual phase.

Kurt Schneider in 1959 described symptoms, which are of great importance to put the diagnosis Schizophrenia, known as “First rank symptoms of schizophrenia”, more popular among psychiatrists “Schneider’s first rank symptoms.

Schneider’s First Rank symptoms:

I. HALLUCINATIONS	<ol style="list-style-type: none"> 1. Audible thoughts: voices speaking out thoughts aloud or thought echo; 2. Voices heard arguing: two or more hallucinatory voices discussing the subject in 3rd person; 3. Voicing commenting on one’s action.
II. THOUGHT ALIENATION PHENOMENA	<ol style="list-style-type: none"> 1. Thought withdrawal: thoughts cease and subject experiences them as removed by external force; 2. Thought uncertainty: subject experiences thoughts imposed by some external force on his passive mind; 3. Thought diffusion or broadcasting: subject experiences that his thoughts are escaping the confines of his self and are being experienced by others around.
III. PASSIVITY PHENOMENA	<ol style="list-style-type: none"> 1. Made feelings or affect; 2. Made impulses; 3. Made volition or acts; <p>In “made” affect, impulses and volitions, the subject experiences feelings, impulses or acts which are imposed by some external force. In “made” volition, one’s own acts are experienced as being under the control of some external force, the subject being like a robot.</p> <ol style="list-style-type: none"> 4. Somatic passivity; bodily sensations, especially sensory symptoms, are experienced as imposed on body by some external force.
IV. DELUSIONAL PERCEPTIONS	Delusional Perception: Normal perception has a private and illogical meaning

We must stress on the fact that during the 3 decades substance abuse is very important and could be one of the causes for schizophrenia. People with schizophrenia may be less able to judge and control the temptations and resulting difficulties associated with drug, alcohol abuse.

Addiction to nicotine is the most common form of substance abuse in people with schizophrenia. They are addicted to nicotine at three times the rate of the general population (75 to 90 percent vs. 25 to 30 percent).

The relationship between smoking and schizophrenia is complex. People with Sch seem to be driven to smoke, and researchers are exploring whether there is a biological basis for this need. In addition to its known health hazards, several studies have found that smoking may make antipsychotic drugs less effective.

Diagnostic criteria (DSM-5)

A. Two or more of the following symptoms, each present for a significant portion on time during a 1-month period (or less if successfully treated). At least one of these must be (1), (2), or (3):

1. Delusions;
2. Hallucinations;
3. Disorganized speech (e. g. frequent derailment or incoherence).
4. Grossly disorganized or catatonic behaviour;
5. Negative symptoms (i. e., diminished emotional expression or absence of volition).

B. For a significant portion of the time since the onset of the disturbance, level of functioning in one or more areas, such as work, interpersonal relations, or self-care, is markedly below the level achieved prior to the onset (or when the onset is in childhood or adolescence, there is failure to achieve expected level of interpersonal, academic, or occupational functioning).

C. Conscious signs of disturbance persist for at least 6 months. This 6-months period must include at least 1 month of symptoms (or less if successfully treated) that meet Criterion A (i. e., active-phase symptoms) and may include periods of prodromal or residual symptoms. During these prodromal or residual periods, the signs of the disturbance may be manifested by only negative symptoms or by two or more symptoms listed in Criterion A present in an attenuated form (e.g., odd beliefs, unusual perceptual experiences).

D. Schizoaffective disorder and depressive or bipolar disorder with psychotic feature have been ruled out because either: 1. no major depressive or manic episodes have occurred concurrently with the active-phase symptoms, or 2. if mood episodes have occurred during active-phase symptoms, they have been present for a minority of the total duration of the active and residual periods of the illness.

E. The disturbance is not attributable to the physiological effects of a substance (e.g., a drug of abuse, a medication) or another medical condition.

F. If there is a history of autism spectrum disorder or a communication disorder of childhood onset, the additional diagnosis of schizophrenia is made only if prominent delusions or hallucinations, in addition to the other required symptoms of schizophrenia, are also present for at least 1 month (or less if successfully treated).

The following course specificity are only to be used after a 1-year duration of the disorder and if they are not in contradiction to the agnostic course criteria.

Types of Schizophrenia

1. **Paranoid** – preoccupation with systematized delusions or with frequent auditory hallucinations. On page 86 is describe a case with this form.
2. **Disorganized** – incoherence, marked loosening of associations, or grossly disorganized behaviour, flat or grossly inappropriate affect (see page 83).
3. **Catatonic** – stupor or mutism, negativism, rigidity, purposeless excitement posturing, echolalia, echopraxia (see pages 43, 44, 45).
4. **Undifferentiated** – prominent delusions, hallucinations, incoherent disorganized behaviour (page 83).
5. **Residual** – absence of delusions, hallucinations or disorganized behaviour. Continuing evidence of the disturbance through two or more of the residual symptoms,
6. **Paraphrenia** – progressive deteriorating cause of illness. Systematized delusional system. Sometimes used as a syndrome for “paranoid schizophrenia.
7. **Simple schizophrenia** – gradual, insidious loss of drive and ambition. Patients were usually not over the psychotic and did not experience persistent hallucinations and delusions. Typical is withdrawal from social and work-related situations.

<p>1. Genes and environment</p>	<p>It is known that schizophrenia unit in families. It occurs about 10% of people who have 1st degree relative with the disorder, such as a parent, brother, sister. People who have 2nd degree relatives (aunts, uncles, grandparents, or cousins) have schizophrenia more often than the general population. The risk is the highest for identical twins where the percentage is over 40 and could reach to 97%). The scientists established that in this disease tend to have higher rates of rare genetic mutations. These genetic differences involve hundreds of different genes and probably damage the brain development. According to other researchers schizophrenia may be explained with the certain gene that is a key to harm important brain chemical malfunctions. This problem may affect the part of the brain involved in developing higher functioning skills. Scientists think interaction between genes and the environment are necessary for schizophrenia. So epigenetic as viruses or malnutrition is important too.</p>
<p>2. Different brain chemistry and structure</p>	<p>The imbalance in the complex, interrelated chemical reactions of the brain involving the neurotransmitter dopamine and glutamate, and possibly others play a role in schizophrenia. Neurotransmitters substances that allow brain cells to communicate with each other. The brain ventricles are larger in schizophrenic patients in comparison with healthy one. These patients have less gray matter and some brain' areas have less or more activity. Brain tissue after death is also different in these patients. Most of the authors think that problems during brain development before birth may be the reason for wrong connections.</p>
<p>3. Dopamine hypothesis</p>	<p>Sch symptoms could be as a result of hypersensitive dopamine receptors or increased dopamine activity. The curative effect of antipsychotic drugs bind to dopamine type-2 receptors (D2) could be explained with the fact that caused functional decreases in dopamine activity. In clinical practice was established that medicaments (amphetamine, cocaine, antiparkinson' drugs as Madopar, LDOPA) that increased dopamine could provoked Sch and hallucinations.</p>
<p>4. Norepinephrine hypothesis</p>	<p>Increased activity in schizophrenia leads to increased sensitivity to sensory input.</p>
<p>5. GABA</p>	<p>G-Aminobutyric acid hypothesis Decreased GABA activity results in increased dopamine activity.</p>
<p>5. Serotonin hypothesis</p>	<p>Its metabolism is abnormal in some chronically schizophrenic patients.</p>
<p>6. Hallucinogens</p>	<p>It has been suggested that some endogenous amines act as substrates for abnormal methylation, resulting in endogenous hallucinogens.</p>
<p>7. Infectious theory</p>	<p>Hypothesis for slow virus etiological includes neuro-pathological changes consistent with past infections that caused antiviral antibodies in the serum and cerebrospinal fluid of some schizophrenic patients. This hypothesis is supported by the seasonality of birth.</p>
<p>8. Computed tomography</p>	<p>Cortical atrophy in 10-35%, increased ventricles (10-50%), Abnormal CT scan findings, correlate with the presence of negative symptoms.</p>
<p>9. PET</p>	<p>Positron emission tomography shows decreased frontal and parietal lobe metabolism, relatively high posterior metabolism and abnormal laterality.</p>
<p>10. Cerebral blood flow (CBF)</p>	<p>Decreased levels of frontal blood flow, increased in parietal blood flow, and decreased the whole brain blood flow.</p>
<p>11. EEG</p>	<p>Electroencephalogram – most patients have a normal EEG, but some of them have decreased alpha and increased theta and delta activity, paroxysmal activity.</p>
<p>12. Immunological studies</p>	<p>Atypical lymphocytes and decreased numbers of natural killer cells.</p>
<p>13. Endocrinological studied</p>	<p>Decreased levels of luteinizing hormone (LH), and follicle-stimulating hormone (FSH), gonadotropin-releasing hormone (GTH), thyrotropin-releasing hormone (TRH).</p>

Chronobiological aspects in Schizophrenia

At the end of the 19th century some psychiatrists registered higher temperature in Sch patients during the episode and it normalized during their recovery. We also established **higher values of temperature before medication** that decreased after therapy. Typical for Sch is desynchronization of the circadian rhythms. The idea for desynchronization was reported for the 1st time by F. Halberg and al. about the middle of the previous century. Later many authors supported this idea. In 1995 we also established **desynchronization** between the rhythms of temperature and pulse before therapy and a month after medication with neuroleptics (pp 192-193). In patients with catatonic stupor is registered **inversion of rhythm in activity**. At the end of the 19th century and at the beginning of the 20th century the episodes with catatonic stupor were too long. The medical staff noticed that these patients were activated at midnight. They used this period of time to feed them. More details about catatonic stupor one can find on pp. 46-47. With the appearance of the new psychopharmacological drugs this form is very rare.

So schizophrenia is characterized with the following chronobiological features:

- **Higher temperature before medication;**
- **Desynchronization between temperature and pulse rate;**
- **Inversion of rhythm of activity.**

See the following case of 2 patients with catatonic stupor.

Case 1	Case 2
Each morning the 10th patients from room No 1 reported to the doctor at the morning visitation that just at 2 o'clock in midnight s.b. strikes a slap in their faces and when they awoken did not see any body. The doctor ordered during the night s.o. of the staff to watch the room. It was established that just at 2 o'clock in midnight the patient in the same room that was with a catatonic stupor jumped from the bed, strikes a slap in the face of all patients in the room and after that went to his bed and took the embryo pose. Nobody believed that he could do this, but it is connected with the inversion of the rhythm' activity.	Jane was taken as a new hospital attendant In the psychiatric hospital. One day she cleaned the bedroom. She putted the broom sweeps clean near by a patient with catatonic stupor. She bowed down to make the bed. Just in this moment the catatonic patient took the broom, strikes her on her back and after that he took his previous pose. She was very painted and broke into tears in font of her colleagues. They tried to calm her. They explained that it was connected with his psychic state. But she did not agree with them and leaved this job.

Catatonic states are connected with deep disturbances of the nervous system – the motor centre of the cortex of the brain is suppressed.



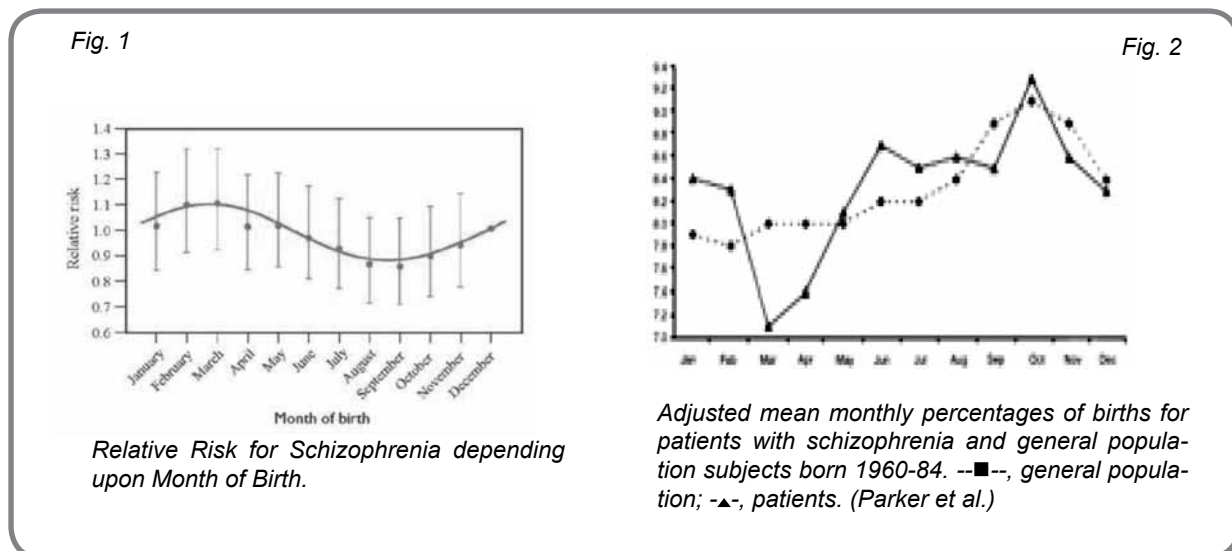
Patients diagnosed with a catatonic disorder may maintain their body position for hours, days, weeks or even months at a time. Alternately, catatonic symptoms may look like agitated, purposeless movements that are seemingly unrelated to the person's environment.

Catatonic symptoms were first described by the **psychiatrist** Karl Ludwig Kahlbaum in 1874. Kahlbaum described catatonia as a disorder characterized by unusual motor symptoms. Kahlbaum carefully documented the symptoms and the course of the illness, providing a natural history of this unusual disorder.

His description of individuals with catatonic behaviors remains accurate to this day. I. P. Pavlov is one of the authors that tried to make any explanation of the catatonic stupor. At the beginning Pavlov analyzed the symptoms of the various catatonic states (p. 47).

Seasons of the year and Sch

Seasons of the year are of great importance for **Sch. E. Hare and J. Price (1974)** in England, **J. Boyd et al. (1986)**, **A. Jablenski et al. (1981)** in Europe, investigated the association between the risk of Sch and season of birth. **Bradbury et al. (1985)** and **Torrey et al (1997)** formed some harmful effects as genetic factors, prenatal and birth complications, procreational habit, seasonal variation in external toxins, nutritional deficiencies, infectious agents and numerous meteorological variables. Each hypothesis is judged to be insufficient. One epidemiological approach to clarification is to undertake studies in equatorial regions. **G. Parker studied** examined 9655 Sch-patients from Singapore (year of birth range 1930-1984). We analyzed aggregated data, as well as the data of subsamples grouped according to birth-year periods, in order to examine secular trends. Monthly variation in births was evident for both patients and controls; the patterns were very similar. **Conclusion is that in an equatorial region, where “seasons” are absent, no seasonal excess in births of those later developing schizophrenia was evident** (fig. 2).



Sch is more spread in winter in countries with expressed 4 season of the year (fig. 1), whereas the study in countries without seasons of the year, as Singapore shows no variations of seasons of birth in Sch-patient and the other population (fig. 2).

Torrey et al (1997) concluded that the seasonal birth factors in schizophrenia is more likely to affect those “born in, or raised in, urban areas”. In the equatorial region of urbanised Singapore, however, the monthly distribution of births in those with diagnosed Sch appears consistent with the pattern recorded in the general population, while monthly peaking was identical.

- In an equatorial region (Singapore) there does not appear to be any increased risk of developing schizophrenia associated with being born at a particular time of the year.
- In the absence of any such environmental influence, Sch may have a different phenotypic expression in equatorial regions.
- These results argue against a link between any seasonal variation in schizophrenia and the subjects born in an urban area.

One of the possible reason that could explain seasonality of Sch-risk is the association between winter/spring birth and Sch. May be it is related with sunlight exposure. The shorter days in winter can lead to Vit. D-deficiency could change the development of child's brain in the mother's uterus and after birth.

A. Jablenski (1986) explained seasonality of Sch and native malformations with the fact that these children were conceived in spring and it is possible the mother in this season to be infected. These children were born in winter. The 1st several months the babies have native immunity from the mother, but after that their immune system weakened just when they enter in Spring, the season with many virus infections. So he permitted exogenous genesis of Sch.

Psychophysiological and biochemical explanation of seasonality

According to **Schwartz (2011)** maternal 3rd trimester infections or Vit-D deficiencies are one of the most important cases for Sch. The reduction of maternal sunlight during the 2nd trimester of pregnancy may reduce the amplitude of maternal circadian pacemaker (mother's biological circadian rhythm). The short nights reduced the maternal concentration of plasma melatonin that changed the core body and incubator temperatures, and increased fetal core body and brain temperatures. It was established that the core body temperature of human fetus near birth vary by >2.5 °C. The reduced melatonin concentration and the increased temperature damage immature hippocampal neurons in neurons in animals. In addition plasma melatonin concentrations and core body temperatures are determinants of the dopaminergic programming of the striatum component of the human central thermostat, which appears to be functioning by the 2nd trimester of gestation and responsive to chronobiological signals its mother correctly/incorrectly depend from the prevailing meteorological conditions. Both hippocampal and striatum thermostat dysfunction may result in reduced striatum extra-cellular dopamine concentrations and tendency to increase phasic dopamine release the characteristic biochemical lesion in Sch.

Thus the maternal-fetal chronobiological dysfunction hypothesis could account for the birth seasonality in Sch and warrants further investigation.

Practical advice to the future mothers – for reduced Sch-risk they must get at least double dose of Vit. D (before and after pregnancy). It is better to plan the birth of the child in order to avoid winter and spring. The birth months with lower risk of Sch are July through October.

Pathophysiology

No consistent structural defects – decreased number of neurons, increased gliosis and disorganization of neuronal architecture. *Degeneration in limbic system, especially the amygdala, hippocampus and cingulate cortex and the basal ganglia, substantia nigra, and dorsolateral prefrontal cortex. In 50% of the patients are increased primitive reflexes, abnormal stereognosis.*

Neurophysiological marker defect – paroxysmal eye movements – inability of the patients to follow object through space with smooth eye movement is 50-80%, and 40-45% in their relatives from 1st degree.

Holzman – eye movement dysfunctions have been shown to be reliably associated with Sch as a trait, suggesting disorders of non-voluntary attention in association with those brain areas involved in smooth pursuit eye movements. The familial distributions of the eye movement dysfunction and of Sch, when considered together, suggest the existence of a latent trait whose transmission fits a dominant transmission mode.

Javitt, Daniel C. – His main idea was to combine psychophysiology with neuroimaging, along with the development of animal models. It permits psychophysiology to test specific etiological hypothesis in Sch.

Chronic Sch patients show lower variations and shorter latencies of early components of somatosensory brain related potentials, which reflect stimulus registration and the scientists have interpreted the findings as indicator for decreasing the modulation of stimulus, which allows too much information to reach higher brain centers. Some authors reported laterality differences in which the left hemisphere is less efficient than the right. Sch-patients show reduced amplitudes of later component waves that had been interpreted as reflecting impaired selective attention. Directed attention in the form of vigilance shows significant performance impairment.

Case – Maria is 85 years old. She fallen down from the stairs and she had fracture to her left leg. After that she was immobilized for several months. When the doctor gave advice to her to move, she was afraid and the relatives noticed that she had tremor. She was consulted with a neurologist who established “Parkinson’s disease”, and advices her to use madopar. Two month after medication her tremor was reduced, but her behavior was strange. She became suspicious and mistrustful, selfishness, she did not care for the problems of the family, she did not share her problems with the relatives, she did not want to listen radio or to see TV. She became heartless and insensible. Some time, especially in the evening, she had visual hallucinations. The clinical picture was like paranoid form of sch.



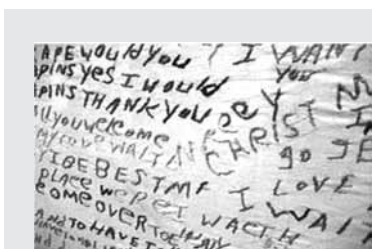
Picasso

Two years later she was hospitalized in Neurology clinic. The diagnose Parkinson’s disease was excluded. Her tremor was connected with her age, so madopar was stopped. A month later her behavior was normalized.

In this case is obvious that the exogenous factor (madopar) that could increase the levels of dopamine which cause Sch. Disorder. When this factor is excluded her psychic state was normalized.

I had the ability to observe two other patients who hat to use for several years mado-par, because of the wrong diagnosis. They developed Sch disorder. When their diagnosis was changed and madopar was stopped the Sch-symptoms disappeared. Dopamin’ hypothesis is supported by these cases too.

Some signs that could speak for Sch disorder



Cloth embroidered by a person diagnosed with schizophrenia

- Social isolation and withdrawal
- Irrational, bizarre or odd statements or beliefs
- Increased paranoia or questioning others’ motivations
- Becoming more emotionless
- Hostility or suspiciousness
- Increasing reliance on drugs or alcohol (in an attempt to self-medicate)
- Lack of motivation
- Speaking in a strange manner unlike themselves
- Inappropriate laughter
- Insomnia or oversleeping
- Deterioration in their personal appearance and hygiene.

**Patient with Schizophrenia, paranoid form,
paranoid delusions with verbal hallucinations**

Mariana is about 50 years old. She is not married. She had no children. She worked in a shop as a shopkeeper. Her grandmother was with Schizophrenia. Since 30 years she suffered from psychiatric disorders. She was hospitalized in many psychiatric hospitals with various paranoid delusions and verbal hallucinations. Three months before the hospitalization she wrote many letters to the President of the country. The last month she troubled him by the telephone. For one week she had so many telephone conversations that she had to pay all her monthly wage. There was a leading proceedings and she was putted obligatory on treatment in a psychiatric hospital.

During the examination she was with good orientation in relation to time, place or person. Her face was with an intense expression. Her speech was very quickly, but we did not establish disturbance of speech, communication, or content of thought. She had false belief that she had two sons. The clinical picture of this patient is characterized with an expressed paranoid delusions and verbal hallucinations and pseudo-hallucinations. She told her story:



Picasso

"I don't know how to begin. My story is very long But I cannot speak with you without the permission of the box. This is a black, dirty, metal box. "Must I speak with the doctor?" Wait a minute. After a minute she continued: "The box answered to me: "Yes you can tell everything to the doctor". "I was in many psychiatric hospitals. But when I was in Pleven the doctors treated me with insulin coma. I remember very well that during the coma s.b. suggested me that I have 2 sons about 26 years old. Than I remembered that I worked in a little shop. Once when I had changed my colleague, she did not warn me about the promotion of some children's toys and I sold them on the previous prize. The same day an inspector came in the shop and understood that I have sold some toys on a higher prize. I was very frightened by that fact and spend two nights with him in order not to lose my work.

Now I know that when I was in insulin coma the doctors took materials from my ovum and sperm from this inspector and putted them in incubator. So my sons were born. One of them is a doctor. He is very handsome young male. One day in Sofia on an autobus stop I sow a handsome young man. He had moustaches. I was sure that he was my son. I asked my head. "Is this young man my son?" The dirty iron box answered me: "Yes he is your son". Than I asked my head: "Must I tell him that I am his mother?" The box said to me: "Yes, you must tell him the truth." Than I went near by him and said to him: "Excuse me, will the bus come soon?" I was afraid to tell him immediately the truth. He did not say anything. Than I encouraged and whispered: "My dear son, I have found you at last". But just at that moment he took a taxi and disappeared. I could not find out my sons, so I wrote many letters and had many conversations with the Ministry and pleased them to help me to find my sons. They gave me no answer and did not give me the ability to talk to the President. And what has happen – they send me in your hospital. But you are very good doctor and you will help me to find out my sons. Now I forgot a very important fact of my life. When I was in orthopedic department during the operation Dr Ivanov putted in my leg a receiving set and now I have the ability to accept and to transfer the thoughts from the other persons. I have special mission. I listened various voices in my head that speak to me from my dirty, iron box". In that moment one of our young colleagues entered the room. She was very astonished and embraced him and cried: "O my son, I was looking for you and just now I found you. What about your moustaches?" Why did you shave them?" The doctor quickly went out of the room.

Psychoanalyze and schizophrenia

It is not possible to analyze the psychological aspects of Schizophrenia, without Freud. Even he is mainly treated neuroses and special the anxiety disorders, his three levels of consciousness are connected with Sch disorders. During the long conversations he analyzed their dreams. He determined 3 levels of consciousness: "id", "Ego" and "Super-ego", or "unconscious", pre-conscious" and "Conscious". Freud's idea for unconscious is arrived at by pressing model where all the psychological locales are spoken of as existing independently from their members at any given moment.

The embryo position in catatonic Sch-patients some psychoanalytic authors explained with regression – the patients have the feeling that are in danger and taking embryo pose they imagine that are in mother's uterus, where they feel themselves sure from the surrounding.

According **Melani Klein** persecutor delusions in elderly could be explained with persecutor anxiety that they had during the first months after their birth. Their fears occur of the feeling for hostility that could harm and damage them. The good breast is a part of child's Ego and is a predisposition to direct them for pleasant things towards the external objects. The good breast gave the person security and good relationships with the other persons. **The bad breast is when the child is neglected during the 1st months after their birth. So in the child is formed tendency for the development of paranoid features of the character.**

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XV. MOOD DISORDERS (MD)

Mood disorder is a group of diagnoses where a disturbance in a person's mood is one of the main feature. The classification is known as mood (affective) disorder in ICD-10.

The term affective disorder was replaced by mood disorder, as it underlying longitudinal emotional state.

History – MD are known to the humanity since antiquity.



Hippocrates, the “Father of Medicine”

The Old testament describes King Saul who was suffering from severe depressive episodes responding slightly to David's music. The fluctuations of emotions and vigor were observed since throughout history. For the 1st time in Ancient Greek the words “melancholia” and “mania” were used by Hippocrates. The word melancholia is derived from melas/μελας, meaning “black”, and chole/χολη, “bile” or “gall”, indicative of the original term from the original humoral theory by Hippocrates.



King Saul

Aretaeus is the 1st that described mania and depression occurring in the same individual. In the 11th Century Persian physician **Avicenna** described melancholia as a depressive type of mood disorder in which the person may become suspicious and can develop certain types of phobias. In the early 18th century French psychiatrist Esquirol's type mania, is one of his affective basic of the current conceptualization of manic-depressive illness can be traced back to the 1850. Baillarger in 1854 was causing the recurrent oscillations between mania and depression, which he termed **folie à double forme** (“**dual-form insanity**”). Jean-Pierre Falret presented a description to the same disorder and named it **folie circulaire** (“circular insanity”).

The German psychiatrist **Emil Kraepelin** was the 1st in 19th century that distinguished between manic-depressive illness and **dementia praecox** (not known as schizophrenia). Manic-depressive illness was looked at as “unipolar” and “bipolar” by the German psychiatrists Karl Kleist and Karl Leonhard in 1950. These concepts were developed by the German psychiatrist Emil Kraepelin (1856-1926), who using Kahlbaum's concept of cyclothymia, categorized and studied the natural cause of untreated bipolar patients. He coined the term *manic-depressive psychosis*, after noting that periods of acute illness, manic or depressive, were generally punctuated by relatively symptom-free intervals where the patient was able to function normally.



Emil Kraepelin

The term “manic-depressive reaction” appeared in the 1st APA (American Psychiatric Association) in 1952 by Adolf Mayer.

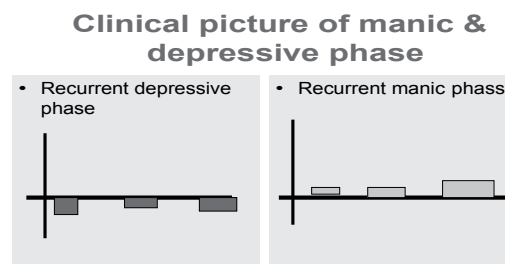
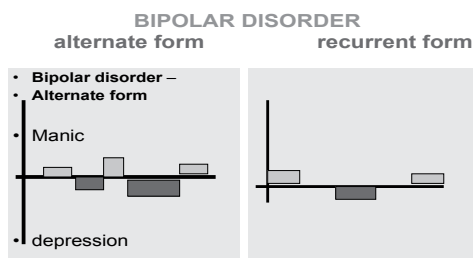
Epidemiology About 1% suffered by Bipolar I and Bipolar II, with genetic predisposition are 15-30% if one of your parents is with BAD. When the both parents are ill the risk is 50-75%, for identical twins is 70%, whereas for not identical twins is 15-20%.

The 2 groups of MD are determined – characterized with manic and depressive episodes. Their symptoms are quite contradictory in the various psychiatric spheres

Manic phase	symptoms	Depressive phase
Hyperthymia ↑ Hyperbulia ↑	mood vigor	↓ Hypothymia ↓ Hypobulia
Hypermnnesia ↑ Hyperoprocectia ↑	memory attention	↓ Hypomnesia ↓ Hypoprocectia
Quick, loud ↑ fuga idearum ↑	Speech	↓ slowly, quiet
Grandeur, ↑ megalomania ↑	Thoughts	↓ Depressive, ↓ guilty,
2 hours ↓	Sleep	↓ ↑
Increase ↑	Sexual activity libido	↓ decreased

Classification: according to ICD-10, the mood disorders are classified as follows:

1. Manic episode;
2. Depressive episode;
3. Bipolar mood (affective) disorder;
4. Recurrent depressive disorder;
5. Persistent mood disorder (including cyclothymia and dysthymia);
6. Other mood disorders (including mixed affective episode and recurrent brief depressive disorder).



Depressive episode – unipolar depression that is without periods of mania is referred unipolar depression. The patients have one or more depressions. Depression without periods of mania is referred as unipolar depression, because the mood remains at the bottom “pole” and does not climb to the higher, manic “pole” as in bipolar disorder. Individuals with depression have a **suicide risk**. Studies have showed that the individual suicide risk of depressive patients is 3 times more spread when some of their family members had committing suicide.

Major depressive disorder (MDD) – known as major depression, unipolar depression, or clinical depression, where in a person has one or more major depressive episodes.

After a single episode MDD (single episode) would be diagnosed. After more than one episode, the diagnosis becomes MDD (Recurrent). About 8.5% of the world population is suffering from a depressive disorder and studies have found that depression appears in infants as young as 6 months old who have been separated from their mothers.

CHRONOBIOLOGICAL FEATURES OF ENDOGENOUS DEPRESSION

1. **Circadian rhythm of mood – evening type**
2. **Stability of rhythm**
 - “spindle” type rhythm;
 - “pathologically stable rhythm”
3. **Desynchronization between vegetative parameters (temperature & pulse).**

Manic episodes – mania is a distinct period of at least 1 week of elevated or irritable mood, which can take the form of euphoria, and exhibit three or more of the following behaviors (four if irritable): speak in a rapid, uninterruptible manner, are easily distracted, have racing thoughts, display an increase in goal-oriented activities or feel agitated, or exhibit behaviors characterized as impulsive or high-risk such as hypersexuality or excessive money spending.

Depressive episode, DSM-5

Five or more of the following symptoms persist;

- Depressed mood – during the whole day;
- Markedly diminished interests or pleasure;
- Weight loss significant (<5%) without diet;
- Sleep – insomnia or hypersomnia;
- Psychomotor agitation;
- Fatigue or loss of energy almost all the day;
- Feelings of guilty, no perspective in future;
- Concentration – very poor;
- Recurrent thoughts of death and suicide.

PS – it is not connected with somatic illness, life event, substance abuse, medicaments.

Manic episode – DSM-5

During the period of mood disturbance an increased activity and energy (3 or more symptoms present)

1. Inflated self-esteem & grandiosity;
2. Sleep – decrease need, 2 hours a day;
3. More talking than usually;
4. Flight of ideas or subjective experience;
5. Attention – too easy drown to unimportant stimuli;
6. Activity – increased (at work or school; at sex);
7. Excessive involvement in activity – engaging, buying foolish things, or foolish business investments, sexual indiscretion

This state is not connected with serious life event, somatic illness, psycho-stimulant or medical condition.

Bipolar disorder (BD) is characterized by abnormal, persistent of high mood (mania) and low mood (depression). It was known as “manic-depression” (or rapid cycling, mixed states, and psychotic symptoms). Patients whose BAD begin with a depressive or mixed affective episode seem to have a poorer prognosis and an increased risk of suicide. During their lifetime 1-2 of the patients had at least 1 tentamen. The annual average suicide rate is 0.4%, which is 10-20 times that of the general population. The standard mortality from suicide in BAD is between 18-25, and the lifetime risk is 20% higher in BAD. Subtypes include:

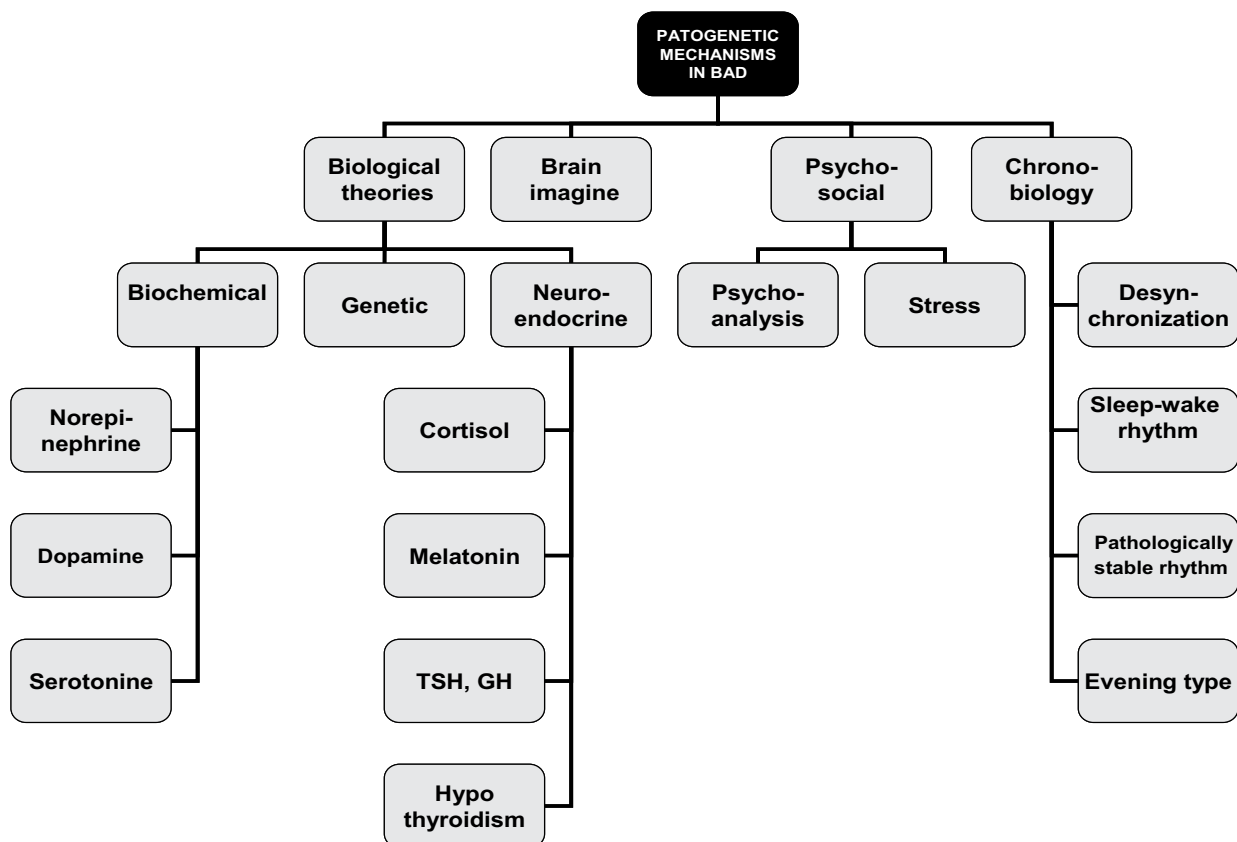
Bipolar I disorder (BD-I) – the presence of 1 or more manic episodes or mixed episodes with or without major depressive episode. A depressive episode is not obliged for BD-I), but depressive episodes are usually part of the cause of the illness;

Bipolar II disorder (BD-II) – consist of recurrent intermittent hypomanic and depressive episodes or mixed episodes;

Cyclothymia – is a form of bipolar disorder, consisting of recurrent hypomanic or dysthymic episodes, but no full manic or full major depressive episodes. The patients are with numerous hypomanic/hypodepressive episodes, but never fulfill the criteria for major depressive/manic episodes. The diagnostic features are chronic, fluctuating mood disturbances, involving numerous periods of hypomanic/hypodepressive symptoms that are distinct from each other. It begins usually in adolescence or early adult life and is sometimes considered to reflect a temperamental predisposition. There is a 15-50% risk that an individual with cyclothymic disorder will develop BAD-I in future. For children with cyclothymic disorder the mean-age at onset of symptoms is 6.5 years of age.

I. Biological theories – it is one of the oldest.

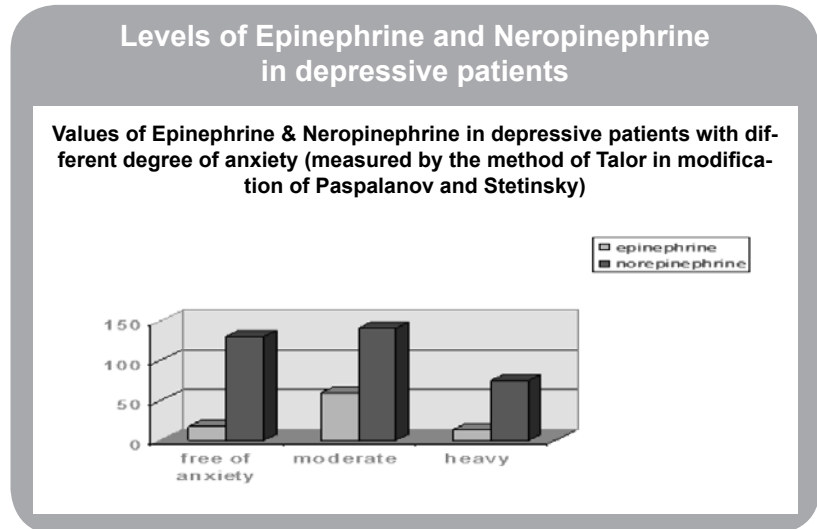
I.1. Genetic – 25% for the 1st degree relatives with BAD. The lifetime risk for children if one parent is with BAD is 20%, and when the both are ill – 74%. Distribution by sex is next: if the father is ill the risk for the girls is 75%, for boys – 25%, if the mother is ill – no differences by sex. The concordance in BAD for monozygotic twins is 65%, for disizygotic twins is 20%, whereas for unipolar depression are 46% and 20%. Realy genetic factors are very important, but epigenetic factors must not be neglected.



Genetic studies have suggested that many chromosomal regions and candidate genes are related to bipolar disorder susceptibly with each gene exerting a mild to moderate effect. Advanced paternal age has been linked to a somewhat increased chance of bipolar disorder in offspring, consistent with a hypothesis of increased new genetic mutations.

1.2. Biochemical theories: there are several biochemical hypotheses for the causation of mood disorders. The monoamine hypothesis is one of the oldest. It suggested abnormality in monoamine: **catecholamine** (norepinephrine and dopamine) and serotonin system in the central nervous system. According it amines could be increased (in mania) or decreased (in depression). **Dopamine**, a known neurotransmitter responsible for mood cycling, has been shown to have increased transmission during the manic phase. The dopamine hypothesis states that the increase in dopamine results in secondary homeostatic down regulation of key systems and receptors such as an increase in dopamine mediated G protein-coupled receptors. This results in decreased dopamine transmission characteristic of the depressive phase. The depressive phase ends with homeostatic up regulation potentially restarting the cycle over again.

We established that the values of catecholamines in depressed patients depend on the anxiety of the patients. The values of epinephrine & norepinephrine are higher for patients that are with moderately expressed anxiety and lower in these that are with heavy anxiety.



Two additional **neurotransmitters, gamma-Aminobutyric acid (GABA) and glutamate**, could cause elevated mood states. Glutamate is increased in the left dorsolateral prefrontal cortex during the manic phase, and returns to normal levels once the phase is over. GABA is found in higher concentrations in people with bipolar disorder, overall leading to a decrease in GABA B receptors. The increase in GABA is possibly caused by a disturbance in early development causing a disturbance of cell migration and the formation of normal lamination, the layering of brain structures commonly associated with the cerebral cortex.

1.3. Neuroendocrine theories: endocrine functions often are disturbed in depression. The neuroendocrine and biochemical mechanisms are closely inter-related.

1.3.1. Melatonin hypothesis – see p. 240.

1.3.2. TRH; GH (thyrotropic releasing hormone; growth hormone) – secreted during sleep.

1.3.3. Hypothyroidism – it is produced during sleep.

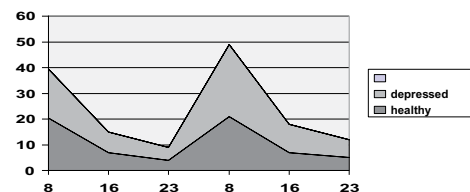
1.3.4. Cortisol theory – dysregulation of the hypothalamus-pituitary-adrenalin (HPA) axis is one of the most common findings present in individuals with major depression (Carroll et al. 1976). They established that in healthy persons cortisol plasma levels are with the highest values in 8.0 AM, they decreased and at 11.0 PM their values were the lowest. His examinations were repeated by many other scientist but the results were very different.

E. Young et al. (2001) established increased plasma cortisol in patients with major depression in 25-30%. They established that mean ACTH was not significantly different between controls and depressive patients. According them the increased cortisol secretion gave them the impression for the central CRH dysregulation.

The 1st day Carroll measured the values of Cortisol at 8 AM, 4 PM and 11 PM. At 11.0 PM he gave them 1 mg. Dexamethasone. On the next day he established that the levels in healthy persons were the same, whereas in depressive patients were significantly higher. He concluded that the exogenous cortisol could not suppress the endogenous and that is typical for endogenous depression.

This phenomenon was declared for biological marker in depression in 1981. We examined cortisol plasma levels in patients with good and disturbed sleep too. We established that there are different values of depressive patients with good and disturbed sleep (see p. 134).

Cortisol plasma levels in healthy persons and depressive patients before and on the next day after 1 mg. dexamethasone at 23 o'clock.

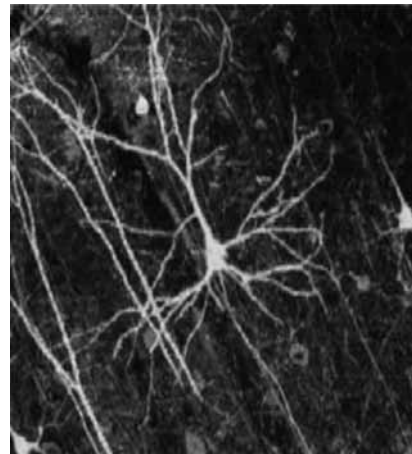


II. Brain imagine

In mood disorders, brain imagining studies (CT– scan, MRI – scan of brain, PET – scan, and SPECT) have yielded inconsistent, yet suggestive findings: **ventricular dilatation, changes in cerebral blood flow and metabolism** in several parts of the brain (prefrontal cortex, anterior cingulate cortex, and caudate).

Abnormalities in the structure and/or function of certain brain circuits could underlie bipolar. Meta-analyses of the brain structure in BAD shows an increase in the volume of the lateral ventricles, globus palida and increased hyperintensities of the deep white matter. Functional MRI findings suggest that abnormal modulation between ventral prefrontal and limbic regions, especially the amugdala, are likely contribute to poor emotional regulation and mood symptoms.

Brain imaging studies have revealed differences in the volume of various brain regions between BD patients and healthy control subjects (see right).



By the metod of rheoencepalography in 1985 we established that CBF (cerebral blood flow) values are higher in depressive patients with expressed anxiety, and are lower in or anxiety patients. The values are almost the same as these of the healthy controls, for the group that are in the middle (not so anxiety). It is very important for their therapy. Some antidepressants increased the cerebral blood fow, whereas others decreased it. So the 1st group are better to be given to the patients that are not anxiety, whereas the 2nd group are more suitable for the anxiety patients. This could normalized the values of their cerebral blood pressure.

III. Psychosocial theories

III.1 Stress is very important for the development of depressions and various psychiatric disorders (see p. 149-158). Depressive mood is a predictable response to certain types of life occurrences, such as loss of status, divorce, or death of a child or spouse. These are events that signal a loss of reproductive ability or potential, or did so in humans' ancestral environment. The depressive mood could be seen as an adaptive response, in absence that it causes an individual to turn away from the earlier (and reproductively unsuccessful) models of behavior.

III.1.1 "Kindling" hypothesis – according this hypothesis people are genetically predisposed towards BAD experience stressful events, the stress threshold at which mood changes becomes progressively lower, until the episodes eventually start (and recur) spontaneously. There is evidence supporting as association between early-life stress and dysfunction of the hypothalamic-pituitary-adrenal axis (HPA axis) leading to its over activation, which may play a role in the pathogenesis of BAD.

III.1.2 Mitochondria and melatonin – other brain components that play a role in BAD too. Alterations to these components caused cyclical periods of poor neurons firing (depression) and hypertensive neuron firing (mania). Circadian and melatonin activity also seem to be altered.

III.1.3 Environmental suggests that the environmental factors play a significant role in the development and cause of BAD, and that individual psychosocial variables may interact with genetic dispositions. About 30-50% of adults diagnosed as BAD reported traumatic or abusive experiences in childhood, which is associated on average with earlier onset, a higher rate of suicide attempt, and PTSD (post-traumatic-stress disorder).

III.1.4 Evolutionary theory – BAD affect an individual's ability to function in society. It suggest that the genes responsible would have been naturally selected against, effectively culling the disorder. It hypothesized that BAD could have come from an adaptation to extreme climates in the temperate zone during the Pleistocene. The evolutionary Origin of BAD hypothesis states that during the short summers of extreme climates, hypomania would be adaptive, allowing the completion of many tasks necessary for survival within a short period of time. During the long winters the lethargy, hypersomnia, lack of interest in social activities, and overeating of depression would be adaptive to group cohesion and survival. The absence of extreme climatic conditions that absence the success of bipolar disorder genes, many bipolar disorder behaviors are maladaptive and can often severely impair normal functioning.

III.1.5 The long-term use of benzodiazepines: such as Valium and Librium, may have a similar effect on the brain as alcohol, and are also implicated in depression. It was established that a great number of suicides were done under the alcohol' influenced.

III.1.6 Neurological damages – include such conditions and injuries include (but are not limited to) stroke, traumatic brain injury, HIV infection, multiple sclerosis, porphyria, and rarely temporal lobe epilepsy.

III. 2 Psychoanalysis: most famous psychoanalytics (Sigmund Freud, Melani Klein, Anna Freud, Beck, A. Adler, Bruno Bettelheim) tried to analyze the depressive state. Most of them stressed on the life problems connected with the early childhood, others on the feeling of guilty. We shall make a commentary of several of these theories, whereas Rollo May report that depression is the inability to construct a future.

III.2.1 Freud – he argued that depression or melancholia could be caused from loss and is more severe than mourning. In his paper *“Mourning and Melancholia”* he made a connection between mourning and melancholia. According to him objective loss, such as the loss of a valued relationship through death or romantic break-up, results in subjective loss as well, the depressed individual has identified with the object of attention through an unconscious, ***narcissistic process called the libidinal cathexis of the ego***. Such loss results in severe melancholic symptoms, more profound than mourning; not only is the outside world viewed negatively, but the ego itself is compromised. The patient’s decline of self-perception is revealed in his belief of his own blame, inferiority and unworthiness. He also suggest that early life experiences are as a predisposition for depression.

III.2.2 Aaron Beck’s Cognitive Theory of Depression

According to Beck negative thoughts, generated by dysfunctional beliefs are typically the primary cause of depressive symptoms. He established relationship between severity of depression and negative thoughts. In other words *“The more negative thoughts you have, the more depressed you will become”*.

Beck stressed on 3 main dysfunctions (or “Schemas”) that dominate in the thinking in depressive persons:

1. I am defective or inadequate;
2. All of my experiences result in defeats or failures;
3. The future is hopeless.

This Negative Cognitive Triad will help to illustrate how the process of depression worked.

A third aspect of Beck’s model concerns how depressed people are prone to distorting and misinterpreting information from the world. They are inclined to make overly negative and self-defeating interpretations that lead to low mood and passivity. On the basis of these decisions one will begin to feel depressed.

Dr. Beck began helping patients identify and evaluate these automatic thoughts. He found that by doing so, patients were able to think more realistic. As a result, they felt better emotionally and were able to behave more functionally. When patients changed their underlying beliefs about themselves, their world and other people, therapy resulted in long-lasting change. Dr. Beck called this approach “cognitive therapy.” It has also become known as “cognitive behavior therapy.”

IV. Chronobiological aspects in depression

Scientists today call man *“a system totally waver out of rhythms”*. In this system the main rhythm is the Circadian and the rhythm of body temperature is one of the most important and stable rhythm. The disturbance of the normal circadian rhythm in living organisms could provoke various disorders. The suprachiasmatic nucleus, which functions as the body’s master circadian clock, plays a major role in the regulation of the sleep wakefulness rhythm and interacts actively with the homeostatic processes that regulate sleep.

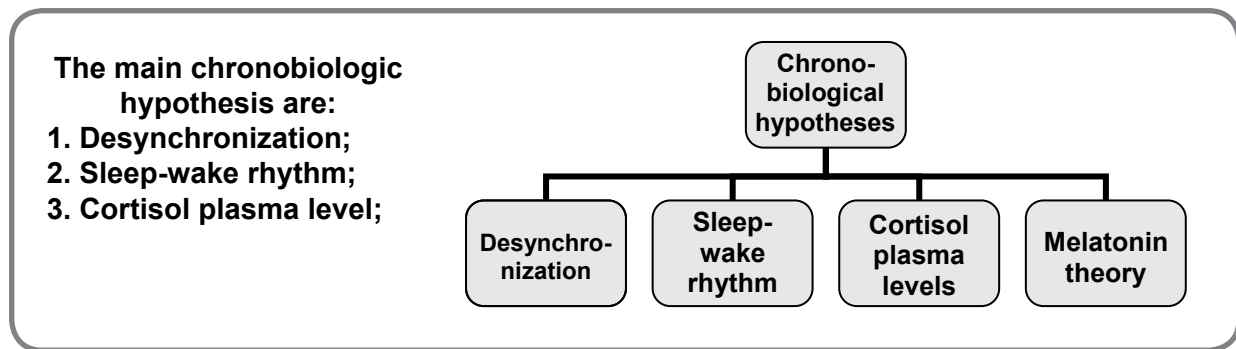
IV.1. Desynchronization – for the 1st time Franz Halberg in 1968 reported the hypothesis for desynchronization in patients with manic-depressive psychosis. This idea was supported later by many other psychiatrists. They speak that the circadian pacemaker in the depressed patients is characterized with:

- *Phase advance*, when the peaks of some physiological functions are with several hours earlier;

- *Phase delay* – some of the functions are with several hours later;

- *Phasen instabilitat* – described by B. Pflug et al. (1980). They found out a high correlation between the subjective selfvaluation and the instability of the phase. The autonomic periodicity in depressive patients is 24 hours, whereas normal is 25 hours.

In our studies we established desynchronization between the rhythm of temperature and pulse rate in endogenous depression (see p. 192).



IV.2 Sleep-wake rhythm – when it is disturbed it is predisposition for depression. The rhythm of sleep-waken cycle are controlled by two different systems – one is the system of the circadian rhythm, the other is connected with the recovery of the processes.

IV.3. Cortisol plasma levels – see p. 243-244.

IV.4. Melatonin hypothesis – was reported by Norman Rosenthal et al. in 1980. They were motivated by their own experience of depression during the dark days of northern US winter. He theorized that the reduction in available natural light during winter was cause. Rosenthal and his colleagues then documented the phenomenon of Seasonal affective disorder in a placebo-controlled study utilizing light therapy. The long nights suppressed the epinephrine and nor-epinephrine. The cortisol plasma levels are increased because of the lower values of epinephrine and norepinephrine. Blood levels of the pineal hormone melatonin are high at night and low during the day. Its secretion is regulated by a rhythm-generating system located in the suprachiasmatic nucleus of the hypothalamus, which is in turn regulated by light. Melatonin is regulated not only by that circadian oscillator but acts as a darkness signal, providing feedback to the oscillator. Melatonin has both a soporific effect and an ability to entrain the sleep-wake rhythm. It also has a major role in regulating the body temperature rhythm. Melatonin rhythms are altered in a variety of circadian rhythm disorders. Melatonin treatment has been reported to be effective in treatment of disorders such as jet lag and delayed sleep phase syndrome.

The story of the winter depression: N. Rosenthal and his collaborators reported in 1984 for 29 year-old woman that each year in autumn and winter suffered from depression and was treated with antidepressant drugs. In spring her depression disappears and she was in hypomania. Two times in winter, when she spend her holiday in Jamaica, where was spring, she had no depression. She shared this with her doctors. The authors explained her depression with the long nights and the short days. Having in mind her complains they created a special questionnaire that was published in everyday newspaper in Washington. About 2000 persons answered that had the same symptoms in winter. The authors selected the cases with the most expressed symptoms and for the 1st time used the method of "Bright therapy". They determined the s. c. "Winter depression", that is included in the new classifications as "Seasonal Affective Disorders".

Seasonal affective disorder (SAD)

Seasonal affective disorder (SAD), also known as **winter depression**, **winter blues**, **summer depression**, **summer blues**, or **seasonal depression**, was considered a mood disorder in which people who have normal mental health throughout most of the year experience depressive symptoms in the winter or summer. In the Diagnostic and Statistical Manual of Mental Disorders DSM-IV and DSM-5, its status was changed. It is no longer classified as a unique mood disorder but is now a specifier called **with seasonal pattern** for recurrent major depressive disorder that occurs at a specific time of the year and fully remits otherwise. Although experts were initially skeptical, this condition is now recognized as a common disorder. SAD's prevalence in the U.S. ranges from 1.4% in Florida to 9.9% in Alaska. Around 20% of Irish people and 10% of the population in the Netherlands are affected by SAD. Seasonal mood variations are believed to be related to light. An argument for this view is the effectiveness of bright-light therapy. SAD is measurably present at latitudes in the Arctic region, such as Northern Finland (64°00'N) where the rate of SAD is 9.5%. Cloud cover may contribute to the negative effects of SAD. There is evidence that many patients with SAD have a delay in their circadian rhythm, and that bright light treatment corrects these delays which may be responsible for the improvement in patients. The symptoms of it mimic those of dysthymia or even major depressive disorder. There is also potential risk of suicide in some patients experiencing SAD. One study reports 6-35% of sufferers required hospitalization during one period of illness. At times, patients may not feel depressed, but rather lack energy to perform everyday activities.

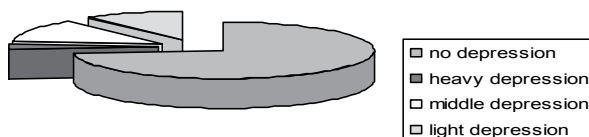
Signs and symptoms

Symptoms of SAD may consist of difficulty waking up in the morning, nausea, tendency to oversleep and over eat, especially a craving for carbohydrates, which leads to weight gain, a lack of energy and pleasure, difficulty concentrating on or completing tasks, withdrawal from friends, family, and social activities, and decreased sex drive. All of this leads to depression, pessimistic feelings of hopelessness. People who experience spring and summer depression show symptoms of classic depression including insomnia, anxiety, irritability, weight gain or loss, decreased appetitesocial withdrawal, and decreased sex drive.

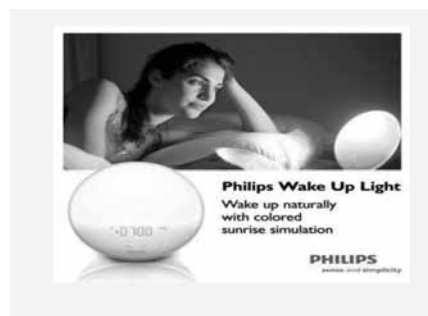
The “Seasonal Pattern Specifier” must meet four criteria:

- *depressive episodes at a particular time of the year;*
- *remissions or mania/hypomania at a characteristic time of year;*
- *these patterns must have lasted two years with no nonseasonal major depressive episodes during that same period; and these seasonal depressive episodes outnumber other depressive episodes throughout the patient's lifetime*

The % distribution of winter depression in Bulgaria



Our study in 2005 shows that 75% of our population does not suffer from SAD, 16% are with heavy and middle expressed symptoms of SAD, and 11% with light expressed SAD.



Various proximate causes have been proposed.

1st theory – one possibility is that SAD is related to a lack of **serotonin, and serotonin polymorphisms** could play a role in SAD, although this has been disputed. Mice incapable of turning serotonin into N-acetylserotonin (by serotonin N-acetyltransferase) appear to express “depression-like” behavior, and antidepressants such as fluoxetine increase the amount of the enzyme serotonin N-acetyltransferase, resulting in an antidepressant-like effect.

2nd theory – the cause may be related to melatonin which is produced in dim light and darkness by the pineal gland, since there are direct connections, via the retinohypothalamic tract and the suprachiasmatic nucleus, between the retina and the pineal gland. Melatonin secretion is controlled by the endogenous circadian clock, but can also be suppressed by bright light.

PSYCHOPHYSIOLOGY OF AFFECTIVE DISORDERS

The humoral theory of melancholia

*In Ancient Greece, disease was thought due to an imbalance in the 4 basic bodily fluids, or Humors. Personality types were similarly thought to be determined by the dominant humor in a particular person. Derived from Ancient Greek melas, “black” and kholé, “bile” melancholia was described as a distinct disease with particular mental and physical symptoms by **Hippocrates** in his Aphorisms, where he characterized all “fears and despondencies, if they a long time” as being symptoms of the illness. **Hippocrates** with the **humoral theory** puts the idea for physiological elements in mood. According to him mania was viewed as arising from an excess of yellow bile, or mixture of black and yellow bile. The linguistic origins of mania are not so clear. Some etymologies proposed by the Roman physician Caelius Aurelianus, including the Greek word **ania**, meaning “to produce great mental anguish”, and **manos**, meaning “relaxed” or “lose”, which would contextually approximate to an excessive relaxing of the mind or soul.*



The four temperaments clockwise from top left (sanguine; phlegmatic; melancholic; choleric) according to an ancient theory of mental states

*The humoral theory was revived in Rome by **Galen**. Melancholia was far broader concept than today’s depression; prominence was given to a clustering of the symptoms of sadness, dejection, and despondency, and often fear, anger, delusions and obsessions were included.*

Today the number of hypothesis are too much and all of them reflect one side of the hypothesis of the cause for BAD, but no one of them is the exact (see the fig.).

Case of patient with mania – GH is 26 years old. He had 2 depressive phases and one manic episode. During the present hospitalization he was directed for hospitalization by the Police just of Christmas. The day before Christmas he went to the centrum of the town. He broke down the glass of a big magazine for cloths, took the cardboard box with various cloths and went in front of the magazine crying: “I am Santa Claus and I give away presents for everybody.” When the police came the magazine was empty.

Case of a patient with recurrent depression: *Pier is 45 years old. His father made a suicide at the age of 33. He worked as an electrical engineer. He is not married. He lived alone. His 1st depressive episode was 20 years ago. He had 7 depressive episodes. The clinical picture is characterized with: disturbed sleep, he waked early in the morning at 4 o'clock, he has no wish to get up from the bed, to prepare hid breakfast or his coffee. He did not want to contact with his friends. He had no wish to go outside of the flat. He had no mood, no wish to do anything, or to go to the cinema or the theatre. His hobby was swimming, but he stopped this sport. He leaved his working place, because he thought that he was "incompetent", that he was nominated to this working place with "protections", that he took this high post in the firm dishonesty. All day he was staying at home. He wrote: "Dear Professor, in the morning I pleased my body to stand up from the bed, to go to the bath, to shave myself, to make a shower, but my body is lazy. I am very lazy. My body does not want to obey my mind. And so till the 5 o'clock in the afternoon I please my body to leave the bed, but it does not realize my wishes. I am very lazy. What can I do? I have a terrible headache, I could not sleep well, I had nightmares. I am guilty and must not live any more. Please doctor can you help me to command my body to stand and to go to work..."*

During the hospitalization he was treated with antidepressant drugs (amitriptylin, seropram and thymostabilizor of mood (carbamazepam). After the 1st month his sleep was improved, his depressive thoughts were not so expressed. After the 3rd month his depressive symptoms disappeared, his mood was better, he had ideas how to continue his life, and visited his colleagues. The doses of the medicaments were decreased.

Case with Bipolar depressive disorder (BAD)

Teodor is 72 years old. He was the 1st child in the family. He had a brother, who is 3 years younger than he is. He had no problems in early childhood. He finished secondary school and university. He worked as a teacher. He is married, he had two children. He is very kind, polite, heart, and enterprises with the persons. He had no family and financial problems, but his brother was with a strange character, and they had often quarreled. They were like enemies and had to divide into two equal parts the family courtyard with a tall wall.

Family anamnesis – his mother was with depression, and his father was an alcoholic, his aunt (the sister of his mother) was with obsessive compulsive disorder, the daughter of her son was with heavy anorexia neurosis and obsessive compulsive disorder.



His 1st depressive episode was in 1965 – he was a student. He was very sad and had no wish to study, to work and to have any contacts with his friends. He could not sleep well. He felt guilty and from time to time appeared suicide ideas. He was hospitalized in a psychiatric clinic. He was treated with antidepressant drugs and tranquilizers. After 2 months he recovered. For a period of 14 years he was very well, he finished his education, he married and had 2 children.

His 2nd depressive episode was in 1980 with the same clinical picture. He felt anxiously, and could not sleep. He did not care for his children and felt guilty. His father continued to drink alcohol and they often quarrelled. It was his 2nd hospitalization. After antidepressant therapy and ECT (electroconvulsive therapy) he recovered and returned to his working place.

Since 1985 to 1988 he worked as a driver in the embassy of Prague. He had not any problems with his health. After his return from Prague, he continued to work as an instructor and finish his 2nd storey of the house. His daughter married and lived in Prague.

Manic and depressive episodes: In 1999 in spring he became very active. Even he slept only 2 or 3 hours in night he was very cheerful, energetic, he had grandiose ideas, he said that he could save much money and gave strange ideas to the chef of the firm. He said that he could become a leader of a new political party and if he enters in the parliament he could help to the poor people. He took a big bank-credit to open a school for drivers. He mortgaged his house without the agreement of his wife. He was sure that he was correct, but when he could not pay the 1st payment he became very frightened, he had to borrow money from his relatives and in the autumn of the same year he became depressed. He felt guilty that his wife had to look for money, because creditor wanted to sell his house. So his wife had to sell the 2nd storey of the house. He was deeply depressed, his sleep was disturbed, he could not find any job, and he had exhausted and wanted to die. Just on Christmas he had drunk at once about 30 tablets seroxat and 15 tablets carbamazepine. He was hospitalized in the psychiatric department. After reanimation he shared his thoughts with the psychiatrist:

“Doctor, I am very guilty in front of my wife and my children. Why I had to take such a big bank-credit. My wife had to sell the 2nd storey. It was build with the money that we safe in Prague. I must not continue to live any more. I am guilty for the failure of my family. I must not live, I must die...”

After medication he recovered. He returned to work to his previous working place. Until now he had 2 manic and 4 depressive episodes and is on a supported therapy.

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XVI. ANXIETY DISORDERS(AD)

DEFINITION: anxiety is a pathological state characterized by feeling of dread accompanied by somatic signs that indicate a hyperactive autonomic nervous system. It is differentiated from fear, which is response to a known cause.

Anxiety is the most common psychiatric symptoms in the clinical practice and the AD are one of the most common psychiatric disorders. Anxiety is diffused unpleasant, vague sense of apprehension.

Anxiety Disorders

- The most prevalent psychiatric disorders 25% of the U.S. population experiences pathologic anxiety in their lifetime
- Presenting problem for 11% of patients visiting primary care physicians
- 90% of patients with anxiety present with somatic complaints

Anxiety is characterized with:

1. Fear is the most common human emotion.
2. Adaptive at lower levels is disabling at high levels.
3. Psychiatrists must recognize the differences between the pathological and normal anxiety.

AD include disorders that share features of excessive fear and anxiety and related behavioral disturbances. Fear is the emotional response to real or perceived imminent danger, whereas anxiety is anticipation of future danger. These two states overlap, but they also differ, with fear more often associated with motions of autonomic arousal necessary for fight or flight, thoughts of immediate danger, and escape behaviors. The anxiety more often is associated with muscle tension and vigilance for preparation for future danger and cautions or avoidant behaviors.

Anxiety is accompanied by autonomic symptoms as:	Signs and symptoms of Anxiety:	
1. Headache, 2. Perspiration, 3. Heart palpitations, 4. Pulse rate, 5. Chest tightness, 6. Strangulation, 7. Feel unwell, 8. Fear of collapse, 9. Fear to fall down, 10. Stomach discomfort, 11. Nausea, 12. Vomiting, 13. Restlessness.	1. Trembling, 2. Twitching, 3. Feeling shaky; 4. Headache; 5. Muscle tenses; 6. Shortness of breath; 7. Hyperventilation; 8. Fatigability; 9. Startle response; 10. Autonomic hyperactivity; 11. Feeling of dread;	12. Insomnia; 13. Hyper-vigilance; 14. Decreased libido 15. Lump in the throat; 16. Upset in the stomach 17. Tachycardia; 18. Cold hands 19. Diarrhea; 20. Dry months; 21. Urinary frequency; 22. Paresthesia; 23. Difficulty swallowing

Pathologic Anxiety

1. *Autonomy: no or minimal environmental trigger;*
2. *Intensity: exceeds patient's capacity to bear the discomfort;*
3. *Duration: symptoms are persistent;*
4. *Behaviour: anxiety impairs coping and results in disabling behaviours.*

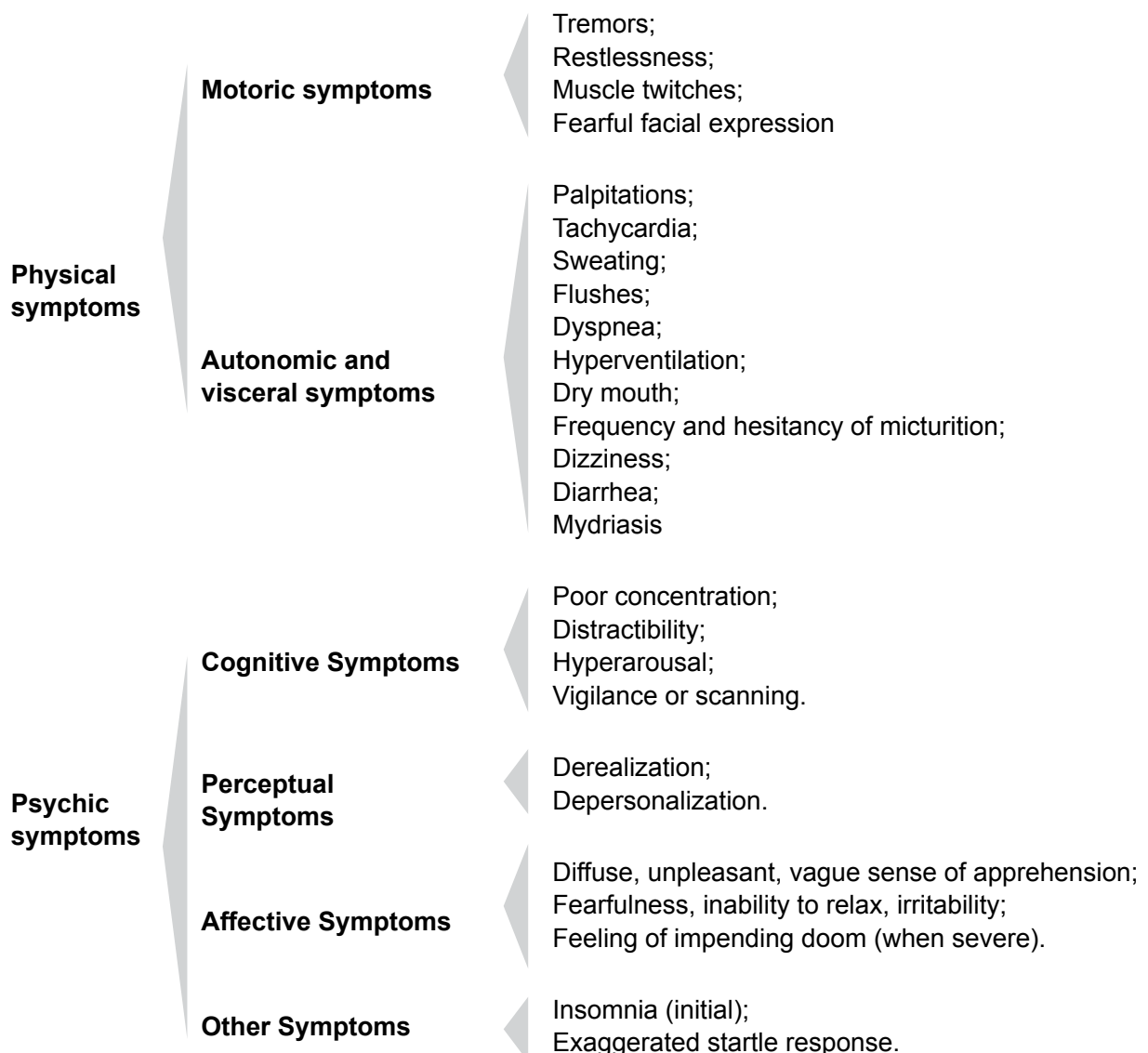
Normal anxiety could become pathological when it caused significant subjective distress and/or impairment in functioning of the individual.

Some authors separate anxiety into two types:

1. Trait anxiety: *This is a habitual tendency to be anxious in general and is exemplified by "I often feel anxious".*

2. State anxiety: *This is the anxiety felt at the present moment exemplified by "I feel anxious now". Persons with trait anxiety often have episodes of state anxiety.*

Symptoms of anxiety:



Psychophysiology and anxiety disorders

I. Pathophysiology – there were found out no serious pathognomic changes.

1. Obsessive compulsive disorder

- *decreased metabolism in orbital gyrus, nuclei caudate, girus cingulare* on PET (positron emission tomography);
- *non-suppression of DST*;

2. Anxiety disorders – increased cerebral blood flow in frontal lobe;

3. Panic disorders

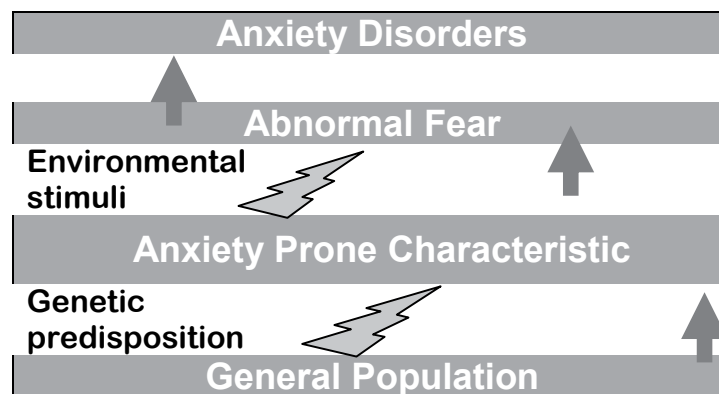
- The increased cerebral blood flow in right para-hipocampus;
- The mitral valve prolapse – in 50% of the patients with PD.
- Nonspecific EEG changes;

II. The psychophysiological Markers of Anxiety Disorders and Anxiety Symptoms – there are several psychophysiological studies:

1. The genetic factors influenced vulnerability to anxiety disorders. About 15-20% of the 1st degree relatives of patients with AD exhibit AD themselves

Development of Anxiety Disorder

The concordance rate of AD in monozygotic twins of patients with Panic disorders is 80%. It is about 4 times more than dizygotic twins. S-H Lee and Gewin-Hi Park (2011) are the 1st that investigate the relationship between these genetic variats and the AD. The authors allow different candidate genetic marker of AD. It is very important to identify genetic polimorphisms associated with AD.



1. Neurotransmitter' factor:

- *The serotonin-transporter-linked polimorphic region*;
- *Catechol-O-methyltransferase*;
- *The Brain-derive neurotrophic factor*;
- *Abnormal neural activity and cognitive bias favoring threat-relevant stimuli*;
- *Dysfunctional neural, serotonergic, cognitive and autonomic activities associated with AD*;

2. Neurophysiological and cognitive characteristics of AD – they are characterized by altered neurophysiological and cognitive functions. Various psychophysiological markers are used in anxiety research may reflect these altered neural and cognitive characteristics of AD. They find out dysfunction of threat-relevant information of people with AD.

3. Different psychophysiological markers: of clinical relevance is whether these psychophysiological markers may play a role in predicting clinical outcome of different treatment.

Our studies of anxiety in patients with an endogenous depression show that the levels of epinephrine and nor-epinephrine (see p. 243), cerebral brain flow and skin-electro-resistance are different for patients with heavy, middle and no anxiety.

Degree of anxiety Parameters	Heavy anxiety	Moderate anxiety	Free of anxiety
Epinephrine	The values are the lowest	The values are the highest.	The values are at the middle.
Norepinephrine	The values are the lowest	The values are the highest.	The values are at the middle.
Cerebral blood flow	The values are the highest	The values are near by that of healthy persons	The values are the lowest
Skin electro resistance	The values are the highest	The values are not different from that of healthy persons.	The values are the lowest.

4. Experimental psychology in Anxiety Disorders:

- **Hydrophobia in an experimental dog in Pavlov's lab:** there was an incident in his lab. One day there was a flood. In his lab there were two dogs. One of them was very big and aggressive. This big dog maltreated a little dog. After the flood Pavlov noticed that the maltreated dog recovered very quickly, whereas the big dog developed phobia – hydrophobia. When the big dog sees even a drop of water on the floor becomes very anxious, restless, nervous. According to Pavlov the dog developed hydrophobia after the incident in the laboratory. He made an association with the conditioned/unconditioned stimulus in his experiments. He stressed on the fact that the development of the phobia depends on the nervous system of the animal/person. The flood in the lab is more serious stressful event for the big, strong and aggressive dog, whereas the maltreated little dog prove to be with more stable nervous system and did not develop hydrophobia (for Pavlov's experiments see pages 11-14).

- **J. Watson's experiment with the little Albert** – his idea was to provoke phobia by a stressful event in a little Albert (8 months) from his lovely toys.



Little Albert was given a battery of baseline emotional test – the infant was exposed, briefly and for the 1st time, to a white rabbit, a rat, a dog, and a monkey, masks with and without hair, cotton, wool. At the beginning the little baby had no fear towards these toys. The next step of the experiment was when the child played with his lovely toys to be produced a strong and unpleasant noise just in the moment when the child touched the toys. When this noise was produced several times the child was afraid from his lovely toys, and began to cry and to avoid the toys. (For more information see pages 15-18).

Little Albert seemed to generalized his response to furry objects. When Watson showed the boy 17 days after the original experiment a non-white rabbit into the room the boy also became distressed. He had similar reactions when presented with the furry dog, a seal-skin coat, and even when Watson appeared in front of the boy wearing a Santa Claus mask with white cotton balls as his beard, although Albert did not fear everything with hair.

Chronobiological characteristic of anxiety

Patients with neurotic/anxiety disorders have some specific chronobiological features. More information one could find in the part “Chronobiology”, pp 192-197.

I. Circadian rhythm:

- morning type rhythm is a biological marker for neuroses:
- fluctuating type rhythm of mood and vigor – the appearing of fluctuating type rhythm is a predisposition for neurotic disorders.
 - Patients with neuroses show **synchronization between temperature and pulse** before medication, whereas after medication the synchronization is because of the absence of expressed peak-hours of these parameters.
 - The various psychopharmacological drugs provoked rhythmic changes in different way in patients with depression and neuroses that could be explained with different pathogenic mechanisms.
 - The various subgroups of neuroses have a specific chronobiological model.

II. Stability of the circadian rhythm:

- Unstable type rhythm stability;
- “moniliform spindle type rhythm”
- Type “plateau” – typical for Obsessive compulsive disorder – stability of the rhythm of obsession.

Panic Attack

Nor-epinephrine metabolites – ↑

- REM (rapid eye movement) ↓
- GABA (gaba-aminobutiric acid) ↓
- Serotonin - ↑
- Dopaminergic activity is associate with anxiety.
- Hyperactive centers in temporal cerebral cortex
- locus ceruleus, center of noradrenergic neurons, hyperactive in anxiety states.
- **Psychoanalytic – unconscious impulses as sex, aggression, threaten to burst into consciousness and produce anxiety.**

Common Medical Conditions Associated with Anxiety Disorders

<ul style="list-style-type: none"> • Endocrine: thyroid dysfunction, hyper-adrenalism • Drug Intoxication: caffeine, cocaine • Drug Withdrawal: alcohol, narcotics 	<ul style="list-style-type: none"> • Hypoxia: angina pectoris, anemia, COPD • Metabolic: acidosis, hyperthermia • Neurological: seizures, vestibular dysfunction
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Psychoanalysis

Anxiety is the core of the psychoanalytic theory of affects (feelings), and from the beginning of psychoanalytic thought has been recognized as central to an understanding of mental conflicts. In his early work he considered anxiety to be a “toxic transformation” of understanding libido. This failure of discharge could either be physiological (“realistic”), as in coitus interruptus or other incomplete or unsatisfactory sexual practices, resulting in “actual neuroses” or “anxiety neuroses”, or it could arise from repression, as a symptom of the continued pressure of unacceptable desires, which led to the anxiety.

In 1926 Freud revised his hypothesis about anxiety. He rejected the distinction between neurotic and realistic anxiety and the idea that repression caused anxiety.

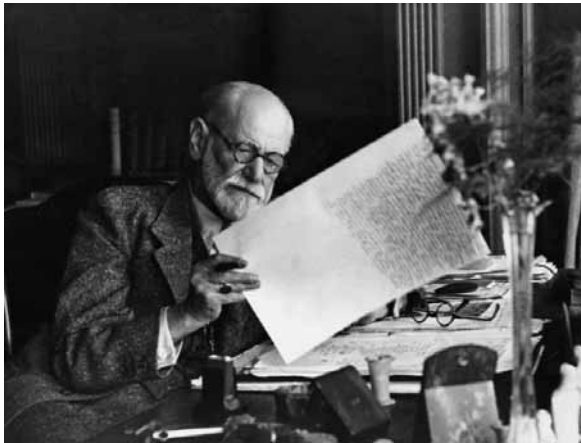
In Freud's new theory were distinguished two types of anxiety:

1. A traumatic, reality-oriented "autonomic" anxiety in which the system was overwhelmed;
2. "neurotic" anxiety in which reprisals of these situations were anticipated, thus setting in motion defensive processes.

"Automatic anxiety" was an affective reaction to the helplessness experienced during a traumatic experience. *The prototype for this experience lay in the helplessness of the infant during and after birth, in which the danger proceeded from outside, and flooded a psychic system essentially unmediated by the Ego.*

The second form of anxiety originated within the physical system and was mediated by the Ego. This "signal anxiety" presaged the emergence of a new "danger situation" that would be a repetition of one of several earlier, "traumatic states".

The prototype of these states lay in birth, corresponded to the central preoccupations of different developmental levels, as the infant's needs progressively abstracted from the original situation of immediate sensory overload to more complicated forms of need regulation capable of synthesizing the many elements facing it (from the reality and pleasure principles and the object word).



These moments – loss of the object's love, the thread of castration, and the fear of the punishment by the internalized objects of the Superego – which were experienced serially during the developmental process, could appear at any time in a person's adult life, typically by some reality and intrapsychic conflict, as a new edition of anxiety.

According to Melanie Klein Freud and Abraham's theory of anxiety and guilt was that they arise from the death instinct, whose destructive impulses are directed against the object of the libido and the interaction between aggression and libido – their polarity as well as fusion – ultimately causes anxiety and guilt. Freud and M. Klein did a comparative study of the theories on anxiety in order to explain its origin.

The main purpose is to offer an instrument which helps frame the theoretical discussions in psychoanalysis in an epistemological context. For Freud anxiety is considered as one more among the various manifestations of mental life, which tries to explain by his general theories.

For Melanie Klein anxiety and its destinies occupies a central place in her theories on mental functioning. According to many psychoanalysts early childhood development is very important for the development of neurotic disorders.



People can become neurotic at any stage of their life. Most neuroses begin in childhood. When the little child receives love from his parents will established feelings of safety and satisfaction. But what will happen when these needs are not met? The child develops **basic hostility** towards his parents. The repressed hostility leads to **basic anxiety**: a feeling of helplessness and isolation in a hostile world. Basic hostility and basic anxiety are combined in an endless circle. Basic anxiety can lead to neurosis, but not necessarily. One difference between a neurotic individual and a healthy person is that the neurotics do not consciously choose their method of dealing with people.

- **Moving toward people** – friendly and loving, polite, submissive;
- **Moving against people** – surviving in competitive society Aggressive personality;
- **Moving away from people** – autonomous, calm, quiet, social isolation

Healthy people changed their attitudes with the situation. Neurotic individuals exhibit only one neurotic trend across all relationships. Behavior is compulsion, rather than choice.

Neurotic trends developed from basic anxiety and feelings of isolation

- **Moving towards people** – these neurotics see themselves as loving, generous, unselfish, and sensitive. They often take a subordinate role, see others as more intelligent and capable, and their own self imagine is only a reflection of how other people see them.
- **Moving against people** – these neurotic persons want to be ruthless, they think that they are always correct, and feel themselves ruthless, and superior. They seek to dominate others.
- **Moving away from people** – these neurotics need to be alone, independence and self-sufficiently. They prefer to be alone, and feel discomfort in most social situations.

Intrapsychic conflict

Healthy neurotic	Characteristic	Neurotic trends	The idealized self
Friendly and loving, polite,	Moving toward people	These neurotics see themselves as loving, generous, unselfish, and sensitive.	See themselves as good and saintly
Surviving in competitive society Aggressive personality	Moving against people	They think that they are always correct, and feel themselves powerful, and superior. They seek to dominate others.	See themselves as strong and heroic
Autonomous, calm, quiet, socially isolated.	Moving away from people	They prefer to be alone, and feel discomfort in most social situations. Intrapsychic conflict.	See themselves as self-reliant and wise.

The idealized self-image: the difference between who you are and who you think you are. To protect ourselves from feelings of isolation and inferiority, we generate a favorable mental concept of who we are.

This idealized self-image is dependent on the neurotic trend adapted by the individual.

- **Compliant People** (toward) – see themselves as good and saintly;
- **Aggressive People** (against): see themselves as strong and heroic;
- **Detached People** (away) – see themselves as self-reliant and wise.

Clinical picture

Major Anxiety Disorders

- Panic Disorder
- Generalized Anxiety Disorder
- Social Phobia
- Specific Phobia
- Obsessive Compulsive Disorder (OCD)
- Substance Induced Anxiety Disorder

Generalized Anxiety Disorder

It is characterized by an insidious onset in the 3rd decade and a stable, unusually chronic course which may or may not be punctuated by repeated panic attacks (episodes of acute anxiety). The symptoms of anxiety should persist at least 6th months for this diagnosis to be putted. Patients with GAD suffer from severe worry or anxiety that is out of proportion to situational factors and could be described as “worriers” or “nervous”.

5% prevalence in community samples; ratio is 2:1 females/males; age onset is frequently in childhood or adolescence, chronic, but fluctuating course of illness (worsened during stressful periods).

Symptoms of General Anxiety Disorder include:

Symptoms of GAD include:

- Muscle tension;
- Restlessness;
- Insomnia;
- Difficulty concentrating;
- Easy fatigability;
- Irritability;
- Persistent anxiety (rather than discrete panic attacks).

GAD and diagnostic criteria

- **Excessive anxiety and worry that occurs more days than not for 6 months;**
- **Difficult to control the worry;**
- **3 out of 6 symptoms must persist;**
- **Anxiety caused significant distress or impairment in function;**
- **Not attribute to another organic cause.**

Panic disorders (PD)

PD is characterized by discrete episodes of acute anxiety. The onset is usually in early third decade with often a chronic course. The panic attacks occur recurrently every few days. Their peak is no more than 10 minutes. It could be associated with 4 of the 13 other somatic or psychological symptoms:

Panic Attack Symptoms

- **Cardiac:** palpitations, tachycardia, chest pain or discomfort
- **Pulmonary:** shortness of breath, a feeling of choking.
- **Gastro-Intestinal:** nausea, vomiting, or abdominal distress.
- **Neurological:** trembling and shaking, dizziness, light-headedness or faintness, paresthesias
- **Autonomic Arousal:** sweating, chills or hot flashes
- **Psychological**
- **Derealization** (feeling of unreality)
- **Depersonalization** (feeling detached from oneself)
- **Fear of losing control or going crazy**
- **Fear of dying, fear of death.**

The syndromes are characterized by recurrent unexpected panic attacks (at least 4 in one month).

Attacks are followed for at least 1 month with:

- Concern about having another attack;
- Worry about implications of attack;
- Behavior changes because of the attacks.

200,000 normal coronary angiograms/yr in the US at a cost of 600 million dollars: about 33.3% of these patients have panic disorders. Almost half of patients referred for non-invasive testing for atypical chest pain and who have normal tests have panic disorder. 33,3% of patients undergoing work-up for vestibular disorder with dizziness have panic disorder.

Differential Diagnosis of Panic Disorder

- *Not due to another anxiety disorder*
- *Not due to effects of a general medical condition*
- *Cardiovascular disease*
- *Pulmonary disease*
- *Neurological disease*
- *Endocrine disease*
- *Drug intoxication or withdrawal*
- *Other (lupus, infections, heavy metal poisoning)*
- *Restricts daily activities*

Post traumatic Stress Disorder (PTSD)

The main features of PTSD is the development of characteristic symptoms following exposure to one or more traumatic event. Symptoms present for at least one month. Prevalence is 1% in the general population, and can be as high as 25% in those who have experienced trauma; In combat veterans, prevalence is 20%; Very high prevalence in women who are victims of sexual trauma. Typical are the emotional reactions to the traumatic event (e. g., fear, helplessness, horror).

The clinical presentation of PTSD varies. In some individuals, fear-based re-experiencing, emotional, and behavioral symptoms may predominate. In others, anhedonic or dysphoric mood states and negative cognitions may be most distressing. Individuals with PTSD may be quick tempered and may even engage in aggressive verbal and/or physical behavior with little or no provocation (e. g., yelling at people, getting into fights, destroying objects). They also may engage in reckless or self-destructive behavior such as dangerous driving, excessive alcohol or drug use, or self-injurious or suicidal behavior.

PTSD are characterized by the re-experiencing of an extremely traumatic event accompanied by symptoms of increased arousal and by avoidance of stimuli associated with the trauma. If event just occurred and/or symptoms present for less than one month, a diagnosis of Acute Stress Disorder is given.

1. *Patients with PTSD have experienced a trauma and develop disabling symptoms in response to the event.*
2. *Syndrome can occur at any age.*

Definition of trauma – the person experienced, witness of an event that involved actual or threatened death, serious injury, or threat of harm to self or others. The person’s response involved intense fear, helplessness or horror.

<p style="text-align: center;">Types of Trauma</p> <ol style="list-style-type: none"> 1. Sexual and physical abuse; 2. Rape; 3. Sever motor vehicle accidents; 4. Robbery/mugging; 5. Terrorist attack; 6. Combat veteran; 7. Natural disasters; 8. Sudden unexpected death of family/friend; 9. Witness violence (including domestic violence); 10. Learning one’s child has life threatening illness. 	<p style="text-align: center;">PTSD Cost</p> <ul style="list-style-type: none"> • Patients with PTSD are frequent users of the health care system • Patients usually present to primary care physicians with somatic complaints • After panic disorder, PTSD is the most costly anxiety disorder
<p style="text-align: center;">PTSD Treatment</p>	<ol style="list-style-type: none"> 1. Psychotherapies 2. Exposure-based cognitive behavioral therapy 3. Psychotherapy aimed at survivor anger, guilt and helplessness (victimization) 4. Pharmacological treatment targets the reduction of prominent symptoms 5. SSRI’s are first line therapy; typical antipsychotics are being increasingly used.

Phobic disorders

Phobia is defined as an irrational fear of a specific object, situation or activity, often leading to persistent avoidance of the feared object, situation or activity.

The English suffixes **-phobia**, **-phobic**, **-phobe** (from Greek φόβος phobos, “fear”) occur in technical usage in psychiatry to construct words that describe irrational, disabling fear as a mental disorder (e.g. agoraphobia), in chemistry to describe chemical aversions (e.g. hydrophobic), in biology to describe organisms that dislike certain conditions (e.g. acidophobia), and in medicine to describe hypersensitivity to a stimulus, usually sensory (e.g. photophobia). In common usage they also form words that describe dislike or hatred of a particular thing.

The Characteristic features of phobia are:

1. Presence of the fear of an object, situation or activity;
2. The fear is out of proportion to the dangerousness perceived;
3. Patients recognized the fear as irrational and unjustified (insight in present);
4. Patients are not able to control the fear and are very distress by it;
5. This leads to persistent avoidance of the particular object, situation or activity;
6. Gradually, the phobia and the phobic object become a preoccupation with the patients, resulting in marked distress and restriction of the freedom of mobility (afraid to encounter the phobic object; phobic avoidance).

Agoraphobia

This is an example of irrational fear of situation. It is one of the most common type of phobia in clinical practice. Agoraphobia is a complication of panic disorder. It means “fear of the market place”. Anxiety or avoidance of places or situations from which escape might be difficult, embarrassing, or help may be unavailable.

Agoraphobia – the patients may avoid crowds, restaurants, highways, bridges, movie, theaters, ets. It is most sever forms, the patient may become dependent on companions to face situations outside the home. Some individuals become homebound.

Phobia subtype:

- Animals or insects;
- Natural environment – storms, water, heights;
- Blood, injury, injection, medical procedure;
- Situational – flying, driving, enclosed places;

Animal phobias = Zoophobia

- | | |
|---|---|
| • Ailurophobia – fear of cats | • Murophobia – fear/dislike of mice or rats |
| • Agrizoophobia – fear of wild animals | • Ophidiophobia – fear/dislike of snakes |
| • Chiroptophobia – fear of bats | • Ornithophobia – fear/dislike of birds |
| • Cynophobia – fear/dislike of dogs | • Ranidaphobia – fear/dislike of frogs |
| • Entomophobia – fear/dislike of insects | • Scoleciphobia – fear of worms |
| • Hppophobia –horses | • Selachophobia – fear of sharks |
| • Ichthyophobia – fear of fish | • Melissophobia – fear of bees |
| • Mottephobia – fear/dislike of butterflies | |

Zoophobia

Zoophobia, known also as animal phobia is one of the most spread phobia among not only among children, but and among adult persons. The most spread phobias are fear from mice, rat, frogs, insects, snakes, spiders, bees, even from horses, birds, cats, fishes.

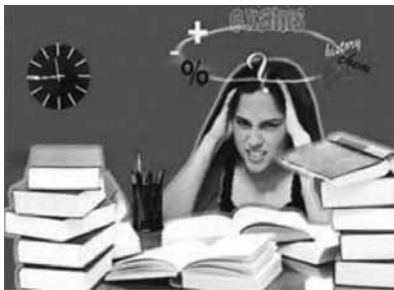
Mottephobia – fear of butterfly

Irine is 24 years old young girl. When she was 5 year old she saw a butterfly in front of the door and she began to cry. She did not prefer to play with the charming butterflies like the other little children. When she went to school a class-mate put a butterfly in her back, she run away and several days did not go to school. One day a butterfly was flying in the classroom and she run away from the room, went in the water closet and stayed there 3 hours. When her father bought her the text-book for 6th class she took the botany-book and when she turned over the pages she saw on one of them photos of different butterflies. She throw the textbook, she was very frightened, cried and leaved the room. Her father had to tear out this page and to burn them. She had never been reading letters, when they were putted in an envelope on which the postage stamp was a picture with a butterfly. Two months before her hospitalization when she entered the car and begin to drive she saw a butterfly. She was very anxiety, leaved the wheel and cried. Her friend took the wheel and stopped the car. So she decided to be treated for mottephobia. We began with antidepressant and tranquiliser to become quiet.



One day I pleased her to come with me in the consulting room and together begin to draw a butterfly. First I drew the body of the butterfly. But when I began to draw the wing of the butterfly she became very anxiety, he fingers began to flutter, her pulse rate increased, her eyes were full with tears and she run away from the room. After several exercises she could draw the butterfly alone. Than she hanged all drawn butterflies on the curtain over her bed. The next step was to show her a real butterfly. We found out a night ugly butterfly and gave it to her. She was so frightened that wanted to stop the therapy. After a conversation she agreed to continue the therapy. She putted the butterfly in a bottle that was under her pillow. After 3 month by the use of behaviour psychotherapy she was stabilized. Just on the 1st of March she came in the clinic and she was with butterfly-martenitsa.

Examination-phobia



Neli was always an above-average student level, and she had no problem till her exam in biochemistry in the 2nd course. In January her mother was ill and she had to care for her. She decided to take her exam in May. When the professor asked her why she missed the exam in January, she explained him the truth. He pulled at her ear and said to the other students: "Dear students, see her, she became a sick-nurse instead of learning medicine". You will come again in September. In September even she was prepared very well, she again failed her on the exam. For 2 years she could not continue university.

She developed anxiety disorder and explain the problem to her psychiatrists. They gave her medical certificate to be examined by another examining commission. She took the exam and finished medicine. 10 years later she had an exam for specialization in ophthalmology. She again was afraid from the exam. She went in Sofia, she stayed in front of the door and in a moment she escaped. She said to her husband that she fail in the exam. Her husband understood the truth. The 2nd time her doctor went with her and she took the exam successful.

List of the Various Phobias

- Ablutophobia – fear of bathing, washing
- Acousticophobia – fear of noise
- Acrophobia – fear of heights
- Agoraphobia – fear of leaving safe places
- Agraphobia – fear of sexual abuse
- Agoraphobia – fear of crossing the street
- Aichmophobia – of sharp objects (needle, knife)
- Algophobia – fear of pain
- Amaxophobia – fear of riding in a car
- Anthophobia – fear of flowers
- Antlophobia – fear of floods
- Aquaphobia – fear of water
- Astraphobia – fear of thunder and lightning
- Autophobia – fear of isolation
- Aviophobia – fear of flying
- Chaetophobia – fear of hair
- Chemophobia – fear of chemicals
- Cherophobia – fear of happiness
- Chromophobia – fear of colors (green, red...)
- Chronophobia – fear of time moving forward
- Claustrophobia – fear of being closed
- Coulrophobia – fear of clowns
- Cyberphobia – computers and new technologies
- Decidophobia – fear of making decisions
- Demonophobia – fear of demons
- Dentophobia – dentists and dental procedures
- Ecclesiophobia – fear of churches
- Emetophobia – fear of vomiting
- Enochlophobia – fear of crowds
- Ergophobia – fear of surgeon's operating
- Erotophobia – sexual love or sexual abuse
- Frigophobia – fear of becoming too cold
- Gelotophobia – fear of being laughed at
- Gephyrophobia – fear of bridges
- Cibophobia, sitophobia – aversion to food, synonymous to anorexia nervosa
- Erythrophobia – fear red color, or of blushing
- Genophobia, coitophobia – sexual intercourse
- Gerascophobia – fear of growing old or aging
- Gerontophobia – fear of growing old
- Glossophobia – fear of speaking in public
- Gynophobia – fear of women
- Haphephobia – fear of being touched
- Harpaxophobia – fear of being robbed
- Heliophobia – fear of the sun or sunlight
- Hemophobia – fear of blood
- Hexakosioihexekontahexaphobia – of № 666
- Hylophobia – fear of trees, forests or wood
- Hypnophobia, somniphobia – fear of sleep
- Ichthyophobia – of fish, and of eating fish
- Kleptophobia – of stealing or being stolen
- Lilapsophobia – fear of tornadoes
- Mechanophobia – fear of machines
- Methyphobia – fear of alcohol
- Bibliophobia – fear of books, as a cultural phenomenon
- Hoplophobia – a political term for fear of weapons, specifically firearms
- Musophobia – fear of mice and/or rats
- Mysophobia – fear of contamination or dirt
- Necrophobia – fear of death and/or the dead
- Nomophobia – of being out of mobile phone
- Nosocomephobia – fear of hospitals
- Nosophobia – fear of contracting a disease
- Nostophobia, ecophobia – of returning home
- Nyctophobia – fear of darkness
- Obesophobia – fear of obesity
- Oikophobia – fear of home surroundings and household appliances
- Omphalophobia – fear of navels
- Oneirophobia – fear of dreams
- Ophthalmophobia – fear of being stared at
- Osmophobia, olfactophobia – fear of odors
- Panphobia – fear of everything
- Pediophobia – fear of dolls (a branch of automatonophobia: fear of humanoid figures)
- Phagophobia – fear of swallowing
- Pharmacophobia – fear of medications
- Phasmophobia – fear of ghosts or phantoms
- Philophobia – fear of love
- Phobophobia – fear of fear itself or of having a phobia
- Phonophobia – fear of loud sounds or voices
- Pogonophobia – fear of beards
- Pornophobia – fear of pornography
- Pyrophobia – fear of fire
- Radiophobia – fear of radioactivity or X-rays
- Sanguivoriphobia – fear of vampires
- Scriptophobia – fear of writing in public or of trying to write
- Scopophobia – fear of being looked at or stared at
- Siderodromophobia – fear of trains or railroads
- Sociophobia – fear of people or social situations
- Spectrophobia – fear of mirrors
- Taphophobia, taphephobia – fear of the grave
- Technophobia – fear of technology (see also Luddite)
- Tetrachophobia – fear of the number 4
- Thalassophobia – fear of the sea, ocean
- Thanatophobia – fear of dying
- Theophobia – fear of religion or gods
- Thermophobia – fear of heat
- Tokophobia – fear of childbirth or pregnancy
- Toxiphobia – fear of being poisoned
- Traumatophobia – fear of having an injury
- Triskaidekaphobia – of №13, Friday 13th
- Trypanophobia – fear of needles or injections
- Turophobia – fear of cheese
- Workplace phobia – fear of the workplace
- Xylophobia – fear of trees, forests or wood
- Phonophobia – hypersensitivity to sound
- Photophobia – hypersensitivity to light Biology, chemistry
- Lipophobia – of fats in food (see Lipophobicity)

Social phobia (SPh)

SPh is characterized with marked fear or anxiety about one or more social situations in which the individual is exposed to possible scrutiny by others. The individuals fear that will act in a way or show anxiety symptoms that will be negatively evaluated. Each social situation always provoked anxiety or fear. The social situations are avoided or endured with intense fear or anxiety. The fear, anxiety, or avoidance is persistent at least 6 months.

This is an example of irrational fear of activities or social interaction, characterized by an irrational fear of performing activities in the presence of other people or interacting with others. The patient is afraid of his own actions being viewed by others. There is marked distress and disturbance blushing (erythrophobia), eating, public speaking, public performance (e. e. on stage), participating in group, singing, speaking to strangers, to authority figures.

Case – Tatiana is 40 years old, she is assistant in the department of Biology. She had problems when she had to report her lectures in front of an auditory. She prepared her lecture perfectly well, she putted the report in a nice leather folder. When her order came she went to the stage, read her report and when she finished she run away from the door. Many times she goes to the scientific session, but when her order came, she disappeared. She wrote her dissertation for master degree. She had to present it of a very big auditory in front of 120 persons. She went to the stage, turned her back towards the auditory and 50 minutes during her presentation she did not turn her face in front of the auditory. When she finished she did not wait for the additional questions and again disappeared.

Obsessive compulsive disorders (OCD)

Epidemiology of OCD

- Lifetime prevalence is 2-3% in the general population
- Mean age of onset is mid-twenties, although men may develop symptoms earlier
- Less than 5% of patients develop disease after age of 35 years
- Chronic course, stress can exacerbate symptoms

Obsessions: recurrent, intrusive, unwanted thoughts (i.e. fear of contamination)

Compulsions: behaviors or rituals aimed at reducing distress or preventing a dreaded event (i.e. compulsive hand-washing)

OCD Symptoms – recurrent obsessions and/or compulsions are severe enough to consume more than one hour/day. Person recognizes the obsession as a “product of his/her own mind”, rather than imposed from the outside, and that they are unreasonable or excessive.

The obsessions are “ego-dystonic” (not enjoyable for the ego), as opposed to “ego-syntonic” (the ego likes it).

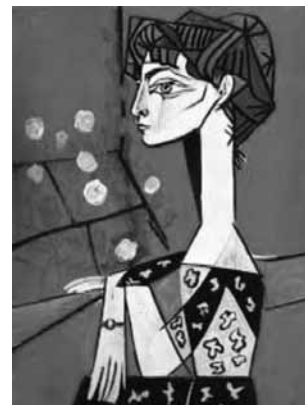
Common Obsessions

- Contamination;
- Repeated doubts;
- Order;
- Aggressive or horrific images;
- Sexual/pornographic imagery;
- Scrupulosity

Obsessions and Common Compulsive Responses Contamination: cleaning, hand washing, showering; repeated doubts: checking, requesting or demanding reassurances from others, counting; order: checking, rituals, counting; aggressive or horrific images, checking, prayers, rituals, sexual/pornographic imagery: prayer/rituals.

Case report: Veneta is in pubertal age. She is 14 years old. She had no somatic and psychiatric and psychological problems in early childhood. She had no problems with her adaptation and communication in children garden and in school. She was very disciplined, an excellent schoolgirl, very ambitious, emotional and sensitive, she studies in English language school and is perfect not only in English but in literature and mathematics. She had a bigger sister. Nobody from the family and their relatives suffered from some psychiatric illness. Her 1st menstruation was before 1 year and it is regular. Her 1st symptoms appeared a year ago. She began to arrange her clothes in a special way and in that time she count from 1 to 10. If s.o. entered in the room she began again. When she went to the bathroom she washed her hands 10 times, after that she counted 20 times, 40 times, till 70 times. Her washing continued some time 2 hours. She was very angry if s. b. came into contact with her text-books. She became angry, began to cry that they destroyed their order and she began to arrange them again in a special way. At last she did not permit her parents and her sister to enter in her room, because the order of her clothes and books could be changed and she had to arrange them again and again. She became very nervous, she was crying, she could not prepare to go to school on time. When she had to bath herself she stayed in the bathroom more than 2 hours, a spoon almost was finished, and even there was no hot water in the boiler she continued to wash with cold water even in winter.

She said: when I was in the 6th class I began to arrange my text-books and notebooks in a special way. In that time I had to think for some nice things to be sure that everything is well. If I do not do it, I have a very strong tension, I could not sleep well, I become very nervous and can not bear if s. o. touches some of my things in the room. When I wash my hand I must count to 77 and after that I can stop. I know that it is foolishly, that it is necessary to wash your hand 2 times and they will be clean, but I can not stop this. If I do not do it I have a very strong tension, I became very nervous, I can not do anything. It is terrible... Some time I prefer to be death. I can not continue to live in this way.it is very painfully, it is terrible, awfully. I have problems with my learning abilities. Please help me. ”



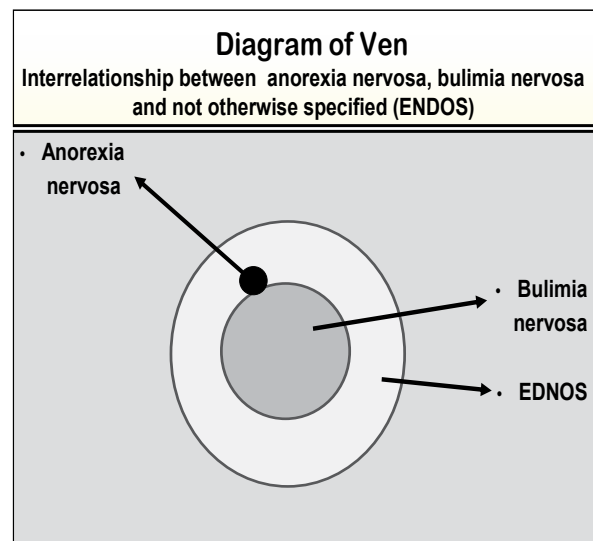
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XVII. EATING DISORDERS (ED)

ED are psychological illnesses defined by abnormal eating habits that may involve either insufficient or excessive food intake to the detriment of an individual's physical and mental health. Bulimia nervosa and anorexia nervosa are the most common specific forms of eating disorders. Although eating disorders are increasing all over the world among both men and women, there is evidence to suggest that it is women in the Western world who are at the highest risk of developing them. It is not entirely understood the precise cause of ED but there is evidence that it may be linked to other medical conditions and situations. About 7000 deaths were registered in 2010 as a result of ED.

One study showed that girls with ADHD have a greater chance of getting an ED. Another study suggested that women with PTSD, especially due to sexually related trauma, are more likely to develop anorexia nervosa. One study showed that adopted girls are more likely to develop bulimia nervosa. Some think that peer pressure and idealized body-types seen in the media are also a significant factor. Cultural idealization of thinness figures have contributed to ED affecting diverse populations. Some of the researchers show that for certain people there are genetic reasons why they may be inclined to develop an eating disorder. Recent studies have found a correlation between patients suffering from bulimia nervosa and substance use disorders. In addition, anxiety disorders and personality disorders are common occurrences with clients of eating disorders. People with ED may have a dysfunctional hunger cognitive module which causes various feelings of distress to make them feel hungry.



Anorexia nervosa (AN): William Gull for the 1st time in 1868 described aepsia neu-rosa. In 1874 he gave the name anorexia nervosa. The term anorexia nervosa was introduced in Bulgaria by V. Jonchev. AN is characterized by lack of maintenance of a healthy body weight, an obsessive fear of gaining weight or refusal to do so, and an unrealistic perception, or non-recognition of the seriousness, of current low body weight. Anorexia can cause *menstruation to stop, and often leads to bone loss, loss of skin integrity, etc.* It greatly stresses the heart, increasing the risk of heart attacks and related heart problems. The risk of death is greatly increased in individuals with this disease. The most underlining factor researchers are starting to take notice of is that it may not just be a vanity, social, or media issue, but it could also be related to biological and or genetic components.

Bulimia nervosa (BN): the term *bulimia* comes from Greek βουλιμία *boultmia*, “ravenous hunger”, a compound of βούς *bous*, “ox” and λιμός, **limos**, “hunger”; literally, BN means disease of hunger affecting the nervous system. BN was named and first described by **Piere Bruke** in 1895 and later by the British psychiatrist Gerald Russell (1979). BN is characterized by recurrent binge eating followed by compensatory behaviors such as purging (self-induced vomiting, excessive use of laxatives/diuretics, or excessive exercise). Fasting and over-exercising may also be used as a method of purging following a binge.

EPIDEMIOLOGY of AN

- Prevalence – 0.5-1% of adolescent girls;
- Onset – usually 13-20 years of age;
- Associated – with stressful life events;
- Male to female – 1:10-20;
- Most common in professions that require thinness, e.g. modeling, ballet, and in developed countries

EPIDEMIOLOGY of BN

- Prevalence – 1-3% of young woman
- Onset usually 16.5 – 18 years;
- Male to female – ratio is 1 : 10;

AN – is a serious and potentially fatal (5-18% of patients in studies) condition characterized by a disturbed body image and self-imposed severe dietary-limitation usually resulting in serious malnutrition.

BN is episodic uncontrolled, compulsive and rapid ingestion of large amounts of food over a short period of time (binge eating) followed by self-induced vomiting, use of laxatives or diuretics, fasting, or vigorous exercise in order to prevent weight gain (bingle and purgatives).

DIAGNOSTIC CRITERIA of AN (DSM-IV)

- Refusal of maintain body weight (normal weight for age and height), the body weight is less than 85%;
- Fear of gaining weight;
- Amenorrhea at least in 3 consecutive days;

Diagnostic criteria for BN (DSM-IV)

- Recurrent episodes of binge eating
- - eating in a discrete period of time (with in any 2-ours period)
- - sense of lack of control over eating during the episode (one can not stop eating or control it);
- Recurrent inappropriate compensatory behavior in order to prevent weight gain;
- The binge eating vomiting is at least 3 times a week for 3 month;
- Self-evaluation is unduly influenced by body shape and weight.

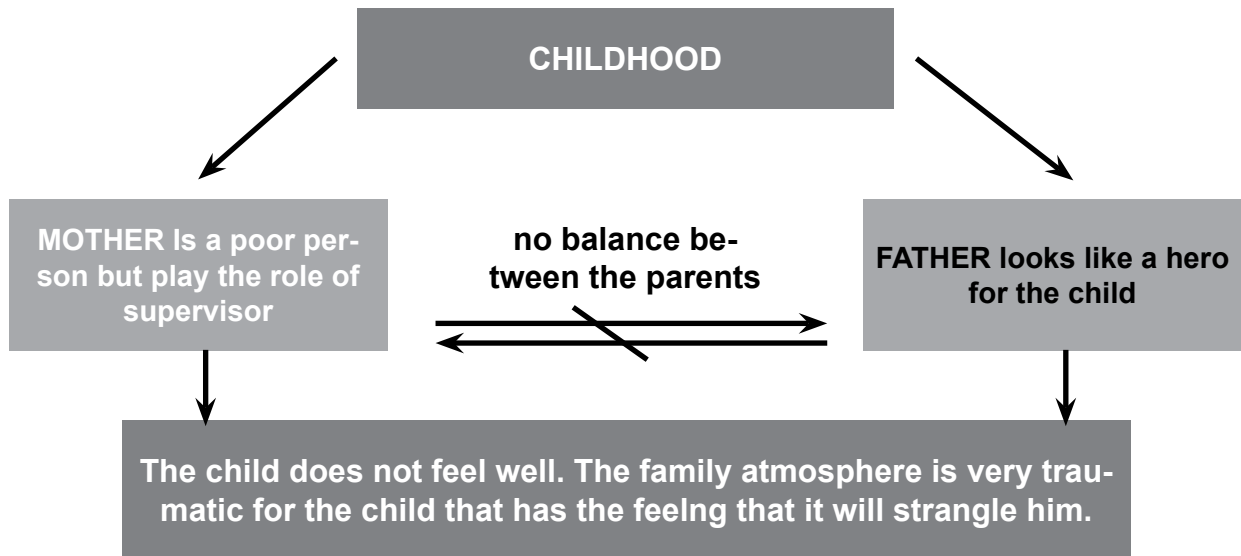
ETIOLOGY OF AN

- **Biological** – higher concordance rate in monozygotic twins, increased familial depression, alcohol dependence or eating disorders. Endogenous opioid activity; reduction of 3-methoxy-4-hydroxyphenyl glycol in urine and cerebrospinal fluid.
- **Social** – society’s emphasis on thinness and exercise. Disturbed relationship with parents.
- **Psychological** – reaction for independence and social and sexual functioning in adolescence.
- **Psychodynamics:**
 - patients are unable to separate from their mother;
 - pregnancy fear;
 - represent sexual or aggressive drives

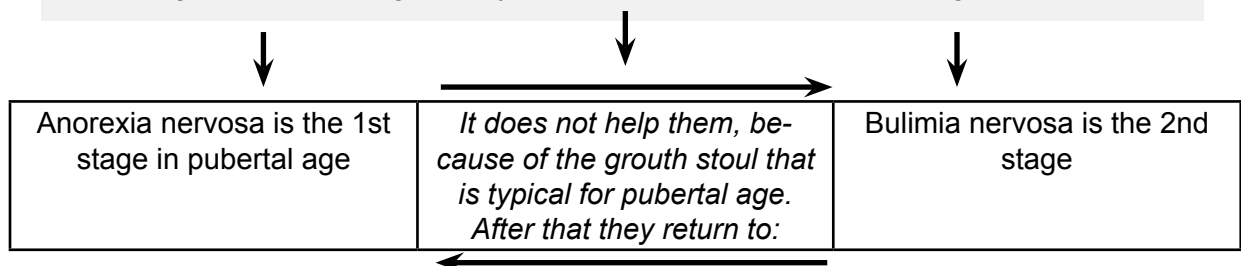
ETIOLOGY OF BN

- **Biological** – less epinephrine and serotonin activity and turn over. Plasma levels are raised in some of them;
- **Social** – they prefer to look perfectly well as the models are liked in society – mannequin, ballerina, dancers, singers and s. o.
- **Psychodynamics:**
 - struggle for separation from the maternal figure;
 - sexual and aggressive fantasy are unacceptable and disgorged symbolically.

Other Specified Feeding or Eating Disorder (OSFED) is an eating or feeding disorder that does not meet full DSM-5 criteria for AN and BN. Examples of otherwise-specified eating disorders include individuals with atypical anorexia nervosa, who meet all criteria for AN except being underweight, despite substantial weight loss; atypical bulimia nervosa, who meet all criteria for BN except that bulimic behaviors are less frequent or have not been ongoing for long enough; purging disorder; and night eating syndrome.



The self-confidence of the children are defined by the opinion of the surrounding. The children have the feeling that are outcast of society. In their imagine appear the idea that the only way to be accepted by the society is to care on their appearance. They pay more attention on their figures and wanted to look like some fashion models. As their figures in puberta age are not so elegant they returned to the varioud diets and good look.



By the idea of Boskind-Lodahls (1976, p. 439) in Urike Karine, p. 73

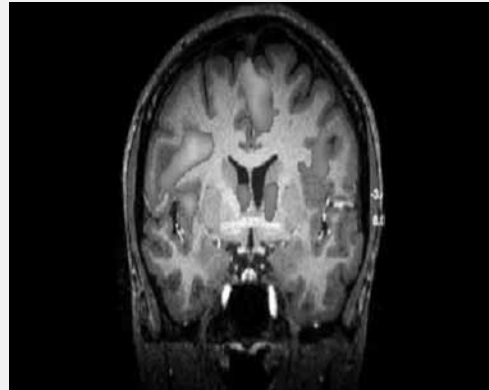
The difference between dieting and anorexia

Healthy Dieting	Anorexia Nervosa
An attempt to control weight	An attempt to control your life and emotions.
Your self-esteem is based on more than just weight and body image.	Your self-esteem is based entirely on how much you weigh and how thin you are.
You view weight loss as a way to improve your health and appearance.	You view weight loss as a way to achieve happiness.
Your goal is to lose weight in a healthy way.	Becoming thin is all that matters; health is not a concern.
You can have a good quality of life.	Your quality of life is disturbed.
Your career is good.	Your profesional career is ruined.
Your physical and psychic states are good.	Your physical and psychic state is damaged.

Psychophysiology and anorexia Nervosa

Hildebrandt et al. focuses on using a range of neuropsychological, psychophysiological, imaging, and hormonal tools to characterize key aspects of eating pathology and apply them to novel treatments for patients with eating, weight, and body image disorders. The effects of chronic and periodic starvation have profound **effects on the hypothalamic regulatory systems** that affect reproductive health, stress, and growth, particularly in adolescence.

W. Goodman, R. Grief, T. Hildebrandt et al. studied the role of neuroendocrine system in food and body image signals. Many of persons with ED are known to experience difficulties identifying, experiencing, and regulating emotions particularly in the context of food. The authors used fMRI, electromyography to characterize the connection of emotions and brain activity (insula-amygdala connectivity). Positron emission tomography (PET) is used to characterize and test the predictive value of the endocannabinoid and opiate-stress system in relapse among recently weight-restored individuals with AN.



Brain activation in anticipation of food in an individual with anorexia nervosa. Image from Tom Hildebrandt

The idea of the authors was to develop novel pharmacological, behavioral methods in order for prevention from AN. They established that their improvement could be realized by the use of anabolic-androgenic steroids.

Biological causes of anorexia

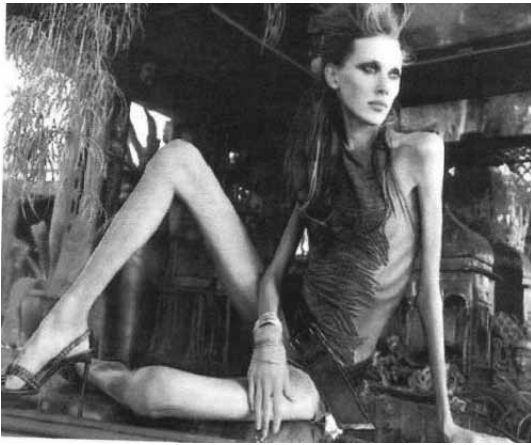
Researchers suggested that a genetic predisposition to anorexia may run in families. If a girl has a sibling with anorexia, she is 10 to 20 times more likely than the general population to develop anorexia herself. Brain chemistry also plays a significant role. People with anorexia tend to have high levels of cortisol, the brain hormone most related to stress, and decreased levels of serotonin and norepinephrine, which are associated with feelings of well-being.

Genetic and Epigenetic in AN:

AN is believed to be highly heritable (56-84%). Twin studies have shown a heritability rate of 56%. The examination of **128 different polymorphisms related to 43 genes** including genes regulating eating behavior, motivation and reward mechanics, personality traits and emotions. **Consistent associations have been identified for polymorphisms associated with some peptides, brain derived neurotrophic factor, catechol-o-methyl transferase, and opioid receptor delta-1**, variations in the **norepinephrine transporter gene promoter** were associated with restrictive AN, but not binge-purge AN.

Epigenetic mechanisms: are means by which genetic mutations are caused by environmental effects that alter gene expression via methods such as DNA methylation, these are independent of and do not alter the underlying DNA sequence.

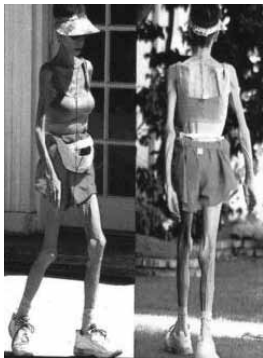
Medical complications of Anorexia Nervosa – constipation, diarrhea, tooth loss, hypokalemia, electrolyte imbalance, cavities cardiac arrest, amenorrhea, brain atrophy, edema, osteoporosis, osteopenia, hyponatremia, optic neuropathy, leucopenia, anaemia.



COURSE & PROGNOSIS

- 40% - recovered (mainly children in pubertal age)
- 30% - improved;
- 30% - chronic state and 20% of them died
- **Some are in the frame of:**
- Neuroses;
- Affective disorders (anorexia in depression & bulimia in manic episodes);
- Schizophrenic disorders – the 1st episode is after 20 years of age.

When you have anorexia, the desire to lose weight becomes more important than anything else. You may even lose the ability to see yourself as you truly are.



Types of Anorexia Nervosa

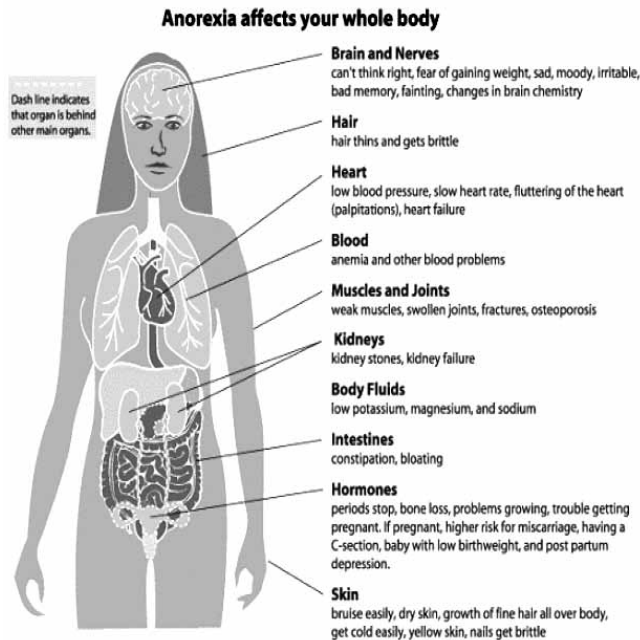
Restricting type of anorexia, weight loss is achieved by restricting calories (following drastic diets, fasting, and exercising to excess). The patient uses restricting food intake, fasting, diet pills, and or exercise as a means for losing weight.

Binge-eating/purging type-purging type of anorexia, weight loss is achieved by vomiting or using laxatives and diuretics. Individual utilizes binge eating or displays purging behavior as a means for losing weight.

What do you think about males? Do they suffer from eating disorders?

Stefan is 20 years old charming, very handsome and intelligent boy. He finished English Language School and went to study Economics in USA. All his relatives were proud with him. When he returned in Bulgaria for Christmas all of them invited him and regaled him with various delicious. Before returning back to USA he made tentamen suicide. Everybody was astonished from this incident. Nobody could understand the reason. After reanimation he was consulted with a psychiatrist. Stefan explained: "Can you imagine doctor. All my relatives were very polite with me and prepared for me various tasty things. When I measured my weight I was astonished that I was grown fat with 1 kg. That is why I had to kill myself." My next question was: "How tall are you?" He answered me: "187". Than I cried out: "Dear me, nobody could notice this 1 kg, as you are so tall. Don't you think that it is very foolish, stupid, silly and mindless to die, because your weight increased with 1, only 1 kg?" Stefan became angry with me: "Doctor, you can not imagine, what does it means for me?" "Please explain it to me!" "Doctor it means that the whole my body is covered with 1 kg lard and I have the feeling that I am very very fat and my body is very lardy. This feeling is terrible for me. I can not live in this way."

Dermatological signs: pellagra, edema; seborrhoeic dermatitis; xerosis cutis; interdigital intertrigo; prurigo pigmentosa; acrocyanosis; hyperpigmentation; carotene-derma; generalized pruritus; acne vulgaris; linear erythema craquele; petechiae; livedo reticularis, stomatitis.



Some of the physical effects of anorexia include:

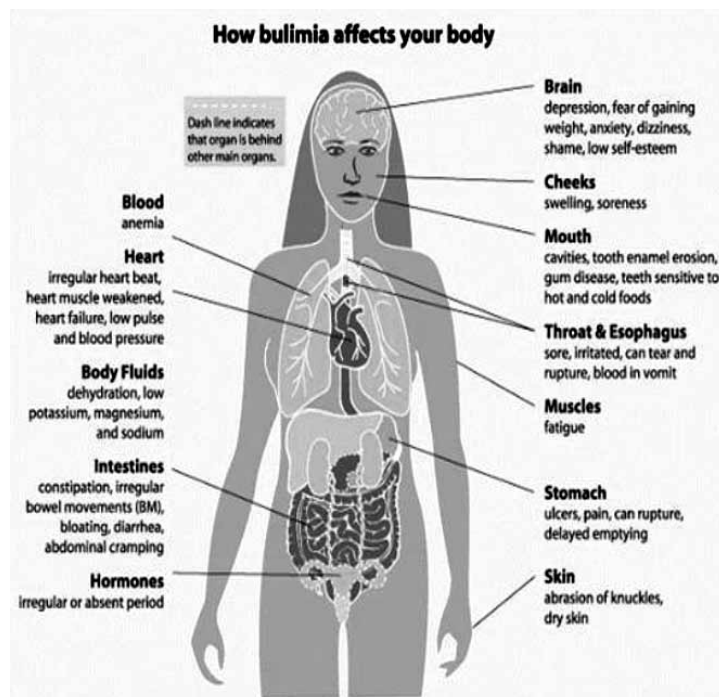
- Severe mood swings; depression;
- Lack of energy and weakness;
- Slowed thinking; poor memory;
- Dry, yellowish skin and brittle nails;
- Constipation and bloating;
- Tooth decay and gum damage;
- Dizziness, fainting, and headaches;
- Growth of fine hair all over the body and face; epileptic seizures.

Body mass index

- Mild: BMI of 17-17.99
- Moderate: BMI of 16-16.99
- Severe: BMI of 15-15.99
- Extreme: BMI of less than 15

Signs and symptoms of bulimia:

If you've been living with bulimia for a while, you've probably "done it all" to conceal your bingeing and purging habits. It's only human to feel ashamed about having a hard time controlling yourself with food, so you most likely binge alone. If you eat a box of doughnuts, then you'll replace them so your friends or family won't notice. When buying food for a binge, you might shop at four separate markets so the checker won't guess. But despite your secret life, those closest to you probably have a sense that something is not right.



Some professions and public persons that required a good appearance are with predisposition to eating disorders.

The statistics from the book of Susan Nolen-Hoeksema "Abnormal psychology," shows the percentage of athletes that struggled with ED based on the category of sport.

- Aesthetic sports: dancing, figure skating, gymnastic – 35%
- Weight dependent sport: judo, wrestling – 29%
- Endurance sports: cycling, swimming, running – 20%
- Technical sports: golf, high jumping – 14%
- Ball game sports: volley ball, football – 12%

Case with Anna – she is 14 years old charming girl. She lived in a little town. Her great wish was to become a great ballerina and to play the main role of "The swan lake". She was a very good dancer and among the candidate she was on the 1st place on the list of the candidates. She was very happy. She never cared for her figure before.

On the 1st day the train measured to all participations their height and weight and calculate their body mass index. She said to Ann: "Dear me, you must decrease your weight with 2 kilograms." Ann did not trouble, because the main for her was to play well. The 2nd day the train repeated again: "Ann if you do not reduce your weight with 2 kg., you must leave the course." She did not know how to do it. She leaved the group, went outside and begin to weep. Some of the girls gave her various advices how to reduce her weight by different diets. And on the next time after an week she reduced her body weight with 1 kg. The train congratulated her. On the 4th week she losed 2 kg and the train always congratulated her. She was very happy and the train was very satisfied of her. In May the group had a dress-rehearse. She had to play the main role of "The swan lake". At last her child's dream was realized. But just at the middle of the show she received epileptic seizure and fall on the floor. She was hospitalized and the doctors putted her the diagnose "Anorexia nervosa".



Ann went in a shop for modern cloths.

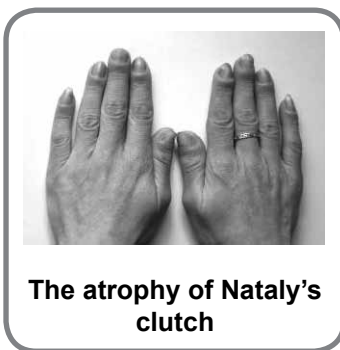
The shop-assistant said to her: "Dear lady, You can not be a model, but you can be a modern young girl".

Some practical advices to persons with AN and BN

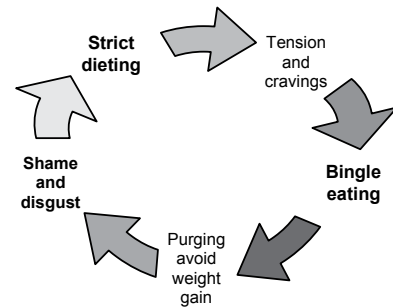
1. Do not think that you are outsider;
2. Do not pay attention on the negative comments about your own body!
3. Seek advices from a health professional.
4. Do not try to look like some famous models. It is better to dress with nice clothes that are suitable for you figure.
5. You must avoid persons that suppressed your self-confidence.
6. Hobby is the best way to avoid your anorexia and bulimia.

The main idea is to learn the patients with AN and BN to perceive their own figure and not to trouble about it. They must understand that it is not the most important in their life. We must direct them to change their value in another direction.

Case: Natali is 36 years old woman. She lived in a family with good and harmonic relations. She played piano. She finished economy, and work as a economist in her native town. She married when she was at the age of 19. She had one daughter. At the age of 17 for the first time she began to vomit. When she looked herself at the mirror she had the feeling that she is very fat. She continued to vomit 20 years. Her crises were more sever in winter. She was treated with various antidepressants, and behavior psychotherapy, but she did not improve. At the age of 30 all her teeth were damaged and she is with denture prothesis. She vomited 7 times daily. In sommer she was better and she vomitted no more than 3 times. Almost each 2 or 3 years she was hospitalized as her weight was too much reduced. Her last hospitalization was in 2012. During the conversation the psychiatrist tried to explain her that this state is very dangerous not only for herself, but for her daughter.



“You must overcome bulimia. You must stop vomiting, because you have a daughter and she is 16 years old. Can you imagine what will happen if she begins to vomit just like you? She can repeat your behavior and if you can not overcome bulimia it will be terrible for your daughter”. Her answer was:



The binge and purge cycle

“Doctor, I have explained her everything for bulimia. She knows that it is very serious and dangerous illness. So I am sure that she will never begin to vomit like me”. Than I added: “And what shall you do if she will begin to vomit? Will you feel guilty for her illness”. But she did not believe, or did not want to agree with me. This was the reason why I decided to use hypnosis. During the 1st séance she fall in the deepest stagy by Forel. She listened only my voice and answered all my questions. After the séance she could not remember anything. This leads me to the idea to make a regression – she was returned at the age of 16 when she liked her body and had no eating problems. During the séance her face changed, she was very happy. She said that her friends gathered in the park. She and her lovely boy were playing on guitar and accordion. All girls and boys were singing and were very happy. During the séance I gave her instructions to look at a mirror and asked her if she liked her figure. She ansured: “Of course I like my figure. Even I was not thin as a manequin model I liked myself and had no eating problems”. My next stage was to remember this figure and after the séance always when she looks at the mirror to see the figure when she was 16 years. After the séance she did not remember anything, but was very quiet. We had only 3 hypnotic seances. Her husband said to me that she was better, but she did not want to continue this therapy because “Something forgotted me to vomit, and this prohibition come from my insight Ego. I do not want to stop vomiting”.

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XVIII. AUTISM

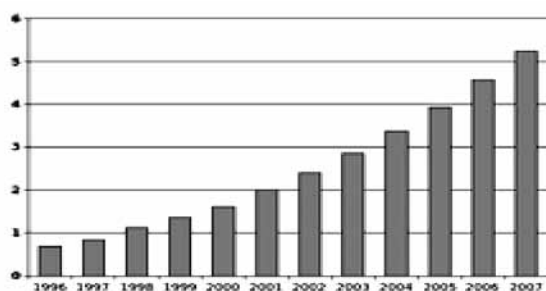
Autism is a neurodevelopmental disorder characterized by decreased social interaction, verbal and non-verbal communication, and restricted and repetitive behavior. Parents usually noticed signs in the 1st two years of the child's life. The signs are developed gradually. Most scientists stressed that autism is highly heritable, but the causes include both the environmental factors and the genetic predisposition.



*My mother groan'd, my father wept,
Into the dangerous world I leapt;
Helpless, naked, piping loud;
Like a friend hid in a cloud.
Struggling in my father's hands,
Striving against my swaddling bands.
Bound and weary I thought best,
To sulk upon my mother's breast.*

(William Blake, "Infant sorrow")

The rate of autism is about 1-2 to 1000 people worldwide, and it is about 5 times more among boys (data are for 2010). In United Kingdom is 1.1. Since 1980 their percentage is increased. The 1st symptoms appeared in early childhood, but they are more expressed after the 6th month. About the 2nd and the 3rd year the diagnosis is notable. Typical for them is the unusual social development appeared in early childhood. They showed less attention to social stimuli, smile, and look at others less often and response less to their own name. They do not have the ability to use simple movements to express themselves, such as deficiency to point at things. Several theories about the higher prevalence in males have been investigated, but the cause of the difference is unknown. The ration in male/female is 4.3/1.



Reports of autism cases per 1,000 children grew dramatically in US from 1996 to 2007. This tendency is noticed in many others countries, and in Bulgaria too. One of the reasons is connected with registration and poor diagnosis. In Bulgaria about 3 decades ago some of these patients were included in the group of "Early child Schizophrenia". There were not formed special centurms for children with autism. About 1 in 68 in USA were with the diagnose Autism as of 2014, 30% increased from 1 in 88 in 2012.

Autistic children suffer from more intense and frequent loneliness compared to non-autistic peers, despite the common belief that they prefer to be alone. About 30-50% of autistic children do not develop enough natural speech to meet their daily communication needs.

Typical for autism are early behavioral, cognitive, or speech interventions can help the autistics gain self-care, social, and communication skills. They have problems with imaginative play and with developing symbols into language.

In literature could be found few examples of autistic symptoms about 1-2 centuries before autism was named. The Table Talk of Martin Luther contains the story of 12-year-old boy with such symptoms. But the earlier well documented case of autism is in 1747. Several signs of autism could be found in “The wild boy of Aveyron, a feral child” described by a medical student, who treated him with behavioral psychotherapy. Leo Kanner introduced the label early infantile autism in 1943.

Leo Kanner (29.02.1896-03.04.1981)

He was born in Klekotiv, a small village in Austria-Hungary, now in Ukraine. He studied at the University of Berlin. In 1921 he received his M.D. He emigrated to the United States in 1924 to take a position as an Assistant Physician at the State Hospital in South Dakota. In 1930 he was selected by Adolf Meyer and Edward Park to develop the first child service in a Johns Hopkins Hospital, Baltimore. In 1933 he became Associate Professor of Psychiatry.



IN 1943 APPEARED HIS PUBLICATION WITH THE FULL DESCRIPTION OF 11 CHILDREN AND THEIR DIAGNOSE WAS AUTISM.

Symptoms and behavior of Autism

Repetitive behavior:	Other symptoms:
<ol style="list-style-type: none"> 1. Stereotype – repetitive movement, such as hand flapping, head or body rolling; 2. Compulsive behavior – is intended and appears to follow rules, such as arranging objects in stacks or lines; 3. Sameness – is resistance to change; 4. Ritualistic behavior – involves an unvarying pattern of daily activities, such as an unchanging menu or a dressing ritual. It is closely associated with sameness and an independent validation has suggested combining the two factors. 5. Restricted behavior – preoccupation with a single television program, toy or game; 6. Self-injury – included movements that injure or can injure the person, such as eye-poking, skin-picking, hand-biting and head-banging. 	<ol style="list-style-type: none"> 1. Unusual abilities – memorization of trivia to the extraordinary rare talent of prodigious autistic scientist, special skill in perception and attention; 2. Sensory abnormalities – 90% of them, distress from loud noises (vacuum-cleaner, washing machine); 3. Motor signs – poor muscle tone, poor motor planning, toe walking, deficits in motor coordination; 4. Unusual eating behavior – 75% of these children; 5. Gastrointestinal symptoms; 6. High levels of stress; 7. Walk on their feet; 8. Special speech intonation; 9. Echolalia, echopraxia.

The characteristic triad of symptoms are:

1. restricted interests;
2. repetitive behavior;
3. atypical eating.

Diagnostic criteria according to DSM-5

A. Persistent deficits in social communication and social interaction across multiple contexts as manifested by the following, currently or by the history (examples are illustrative, not exhaustive; see text):

1. Deficits in social-emotional reciprocity, ranging, for example, from abnormal social approach and failure of normal back-and-forth conversation; to reduced sharing of interests, emotions, or affect; to failure to initiate or, respond to social interactions.
2. Deficits in non-verbal communicative behaviors used for social interaction, ranging for example, from poorly integrated verbal and non-verbal communication; to abnormalities in eye-contact and body language or deficits in understanding and use of gestures; to a total lack of facial expressions and nonverbal communication.
3. Deficits in developing, maintaining, and understanding relationships, ranging, for example, from difficulties adjusting behavior to suit various social contexts; to difficulties in sharing imaginative play or in making friends; to absence of interest in peers.

B. Restrictive, repetitive patterns of behavior, interests, or activities, as manifested by at least two of the following, currently or by history (examples are illustrative, not exhaustive: see text).

1. Stereotyped or repetitive motor movements, use of objects, or speech (e.g. simple motor stereotypes, lining up toys or flipping objects, echolalia, idiosyncratic phrases).
2. Insistence on sameness, inflexible, adherence to routines, or ritualized patterns of verbal or non-verbal behavior (e. g. extreme distress as small changes, difficulties with transition, rigid thinking pattern, greeting rituals, need to make same route or eat same food every day).
3. Highly restricted, fixated interests that are abnormal in intensity or locus (e. g., strong attachment to or preoccupation with unusual objects, excessively circumscribed or perseverative interests).
4. Hyper- or hyporeactivity to sensory input or unusual interest in sensory aspects of the environment (e.g., apparent indifference to pain, temperature, adverse response to specific sounds or textures, excessive smelling or touching of objects, visual fascination with lights or movement).

C. Symptoms must be present in the early developmental period (but not become fully manifest until social demands exceed limited capacities, or may be masked by learned strategies in later life).

D. Symptoms cause clinically significant impairment in social, occupational, or other important areas of current functioning.

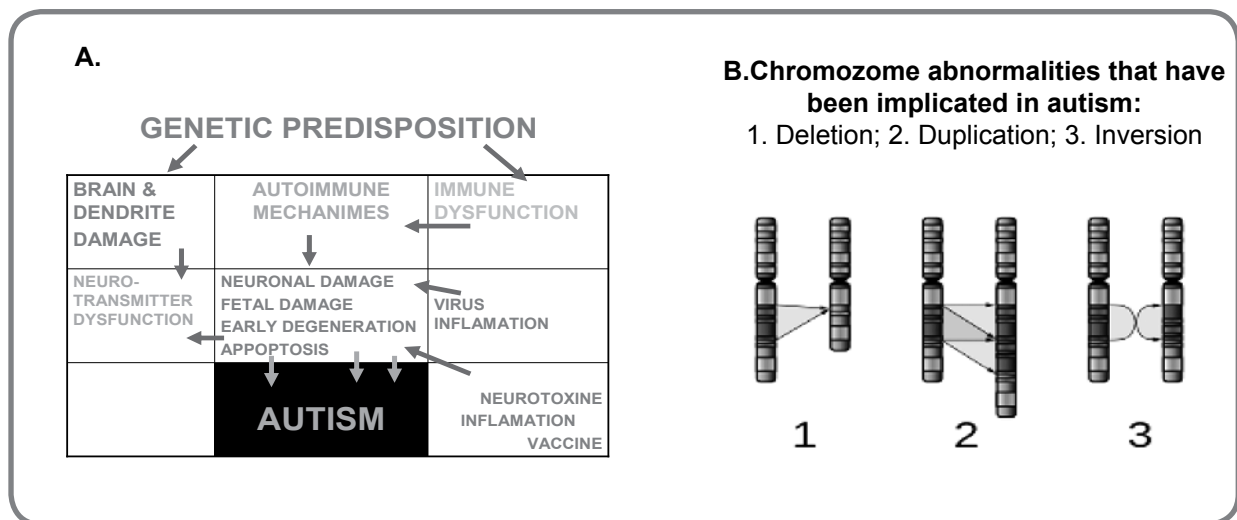
E. These disturbances are not better explained by intellectual disability (intellectual developmental disorder) or global developmental delay. Intellectual disability and autism spectrum disorder frequently co-occur; to make co-morbid diagnoses of autism spectrum disorder for general developmental level.

The screening manifestations for autism in little child are:

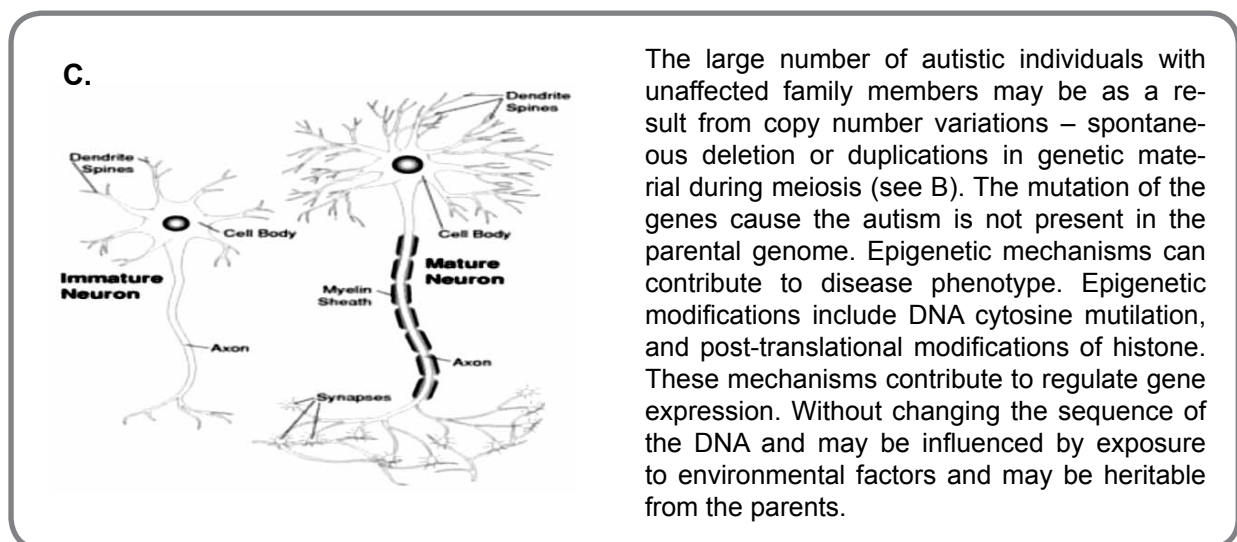
2. No babbling by 12 months.
3. No gesturing (pointing, waving, etc.) by 12 months.
4. No single words by 16 months.
5. No two-word (spontaneous, not just echolalic) phrases by 24 months.
6. Any loss of any language or social skills, at any age.

Psychophysiology

1. Genetic predisposition – it has strong genetic basis even the genetics of autism are complex and it is unclear whether autism is explained more by rare mutations with major effects, or by rare multigene interactions of common genetic variants.



2. Epigenetic factors – typically autism can not be traced to a Mendelian (single-gene) mutation or to a single chromosome abnormality, and none of the genetic syndromes associated with ASD have been shown to selectively cause ASD. Numerous candidate genes have been located, with only small effects attributable to any particular gene.



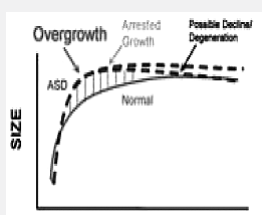
Micro RNA hsa-486-3p gene expression profiling in the whole blood of patients with autism was studied in Bulgaria by N. Popov, N. Madjirova et al., and N. Popov (2011, 2012, 2013).

3. Synapsis dysfunction – they could be caused by rare mutations like these that involved with cell adhesion. Gene replacement studies in mice suggest that autistic symptoms are closely related to later developmental step that depend on activity in synapses.

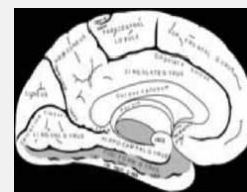
4. Some teratogens agents that cause birth defects. Very important are the first eight weeks from conception (infectious diseases, solvents, diesel exhaust, phenols, used in plastic products, heavy metals, alcohol, pesticides, illicit drugs, vaccines, prenatal stress).

5. Brain damage – the autism affects amygdale, cerebellum, and many other parts of the brain. One of the theories is connected with the “overgrown of brain” and another with the “fisiform face girus theory”. Some authors noticed overgrowth of the brain between and the peek is between 2-4 years of age. It was established that the brain of autistic’s child is bigger about 5-10% that of the normal child. The number of neurons is bigger too. The wite and grew matter of the brain is different too. The adult autistic persons show quite different values – the quality of grew and white substance is smaller. The reduced volume of brain explains their intellectual retardation (Alexander, 2007). Some scientists reported that the brain cortex is thicker in the whole brain, but in adult age becomes significantly thinner. During birth there are about 100 billion neurons, and each of them has about 10 millions dendrites. It gives the abilities of quadrillion connections, but the newborn children have only 17% of them. The dendrite’s connections developed very quickly during the first years of the child, but till the age of 20 half of them fall away.

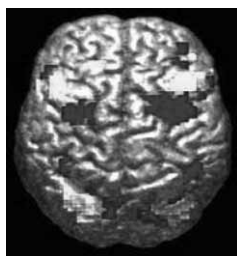
A. OVERGROWTH OF BRAIN



B. FISIFORM FACE GIRUS THEORY



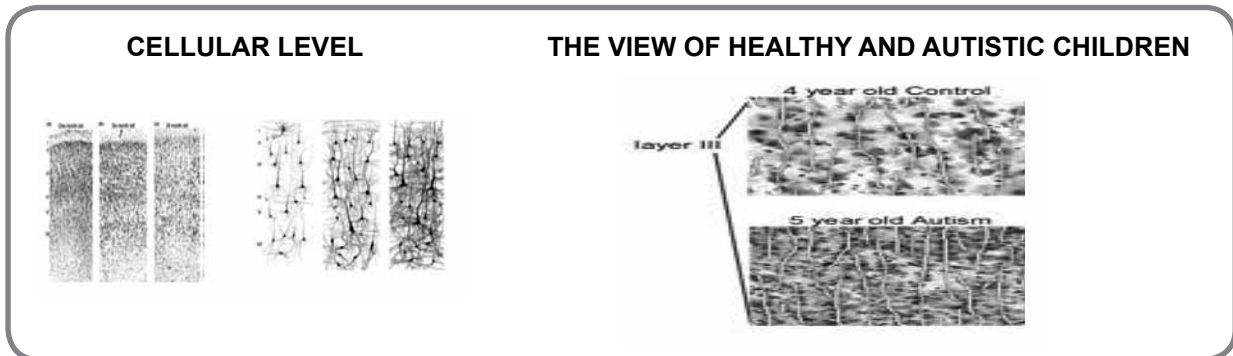
6. Under-connectivity theory: Reduced functional connectivity of the **default network**, a large-scale brain network involved in social and emotional processing, with intact connectivity of the **task-positive network**, used in sustained attention and goal-directed thinking.



The 2 networks are in imbalanced, possibly reflecting a **disturbance of self-referential thoughts**. Autism is marked by underfunctioning high-level neural connections and synchronization, along with excess of low-level processes. It is supported by the founded **functional neuroimaging** changes – local overconnectivity in the cortex and weak functional connections between the frontal lobe and the rest of the cortex. Others suggested the underconnectivity is mainly within each hemisphere of the cortex. So the autism is a **disorder of the association cortex**. *Magnetoencephalography’ studies established delay responses in the brain’s processing of auditory signals.*

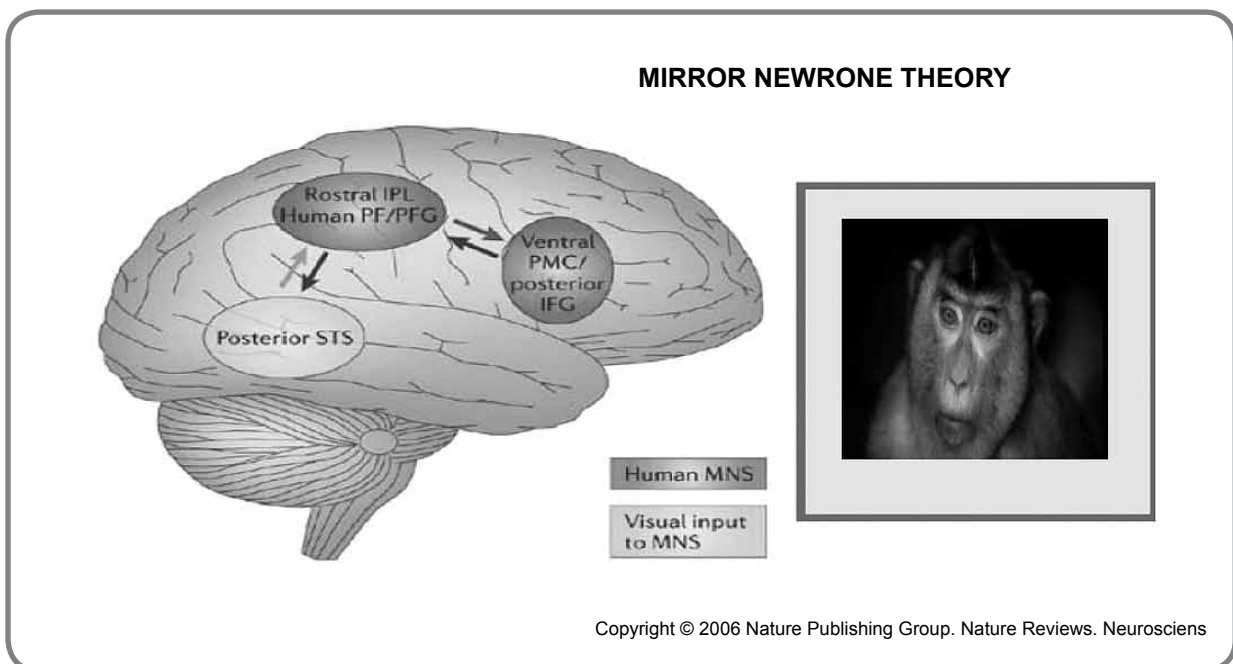
7. Mechanisms – hypotheses for the cellular and molecular bases of pathological early overgrowth include:

- neurons, that caused local over connectivity in key brain region;
- neuronal migration during early pregnancy;
- unbalance between the processes of excitement and inhibition;
- abnormal formation of synapses and dendritic spines;



8. Immune system – it plays an important role in autism. These children have inflammation of the peripheral and central immune system.

9. The mirror neuron system (MNS) – the misinterpreted shows the impossibility of imitation, communication and decreased social skills, impossibility to model the behavior included the simulation of their actions. The studies showed structural abnormalities in MNS activity for imitation, delay activity. There is a correlation between MNS-activity and the severity of the syndrome in children with Asperger syndrome.



The theory stressed on the abnormal brain activity in these persons, but it could not explain the normal operations in some children with autism on imitation tasks.

10. Apoptosis (Programmed Cell Death) – the cells of multicellular organism are members of highly organized community. The number of cells in this community is strictly regulated – not only the rate of cell' division, but also by controlling the rate of cell' death. If cells are no longer needed they commit suicide by activating an intracellular death program. This process is named “**programmed cell death**”. It is called apoptosis (from Greece word meaning “falling off”, as leaved from a tree). Normally about half or more of the nerve cells die soon after they are formed. In healthy adult persons billions of cells die in the bone marrow and intestine every hour. It is strange and remarkable that so many cells die.

What is the purpose for so massive cell death? For example the “mouse paws” are typical for cell death during embryonic development. They start out as a spadelike structure and the individual digits separate only when the cells between them die. So apoptosis is necessary for them. Apoptosis is noticed during metamorphosis of a tadpole into a frog. As a tadpole changes into a frog the cells in the tadpole are fated to die too. So the tail is lost. In adult tissues, the cell death is something as a balance for cell division. In the living organism the liver is a constant size through the regulation of both the cell death and the cell birth rate. The neuropathologic evidences suggest that an apoptotic mechanism was involved in the pathophysiology of autism.

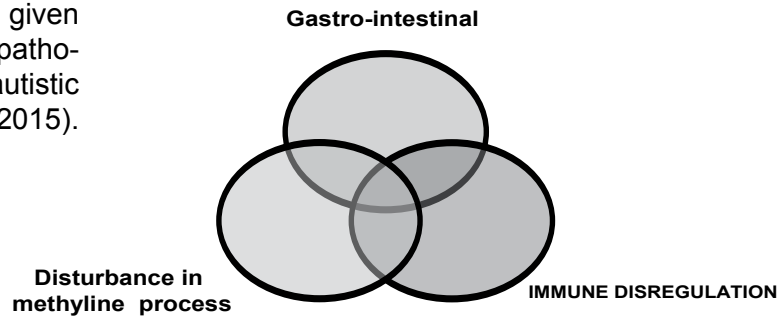
Hongen W., et al. (2014) report that the normal brain development during fetal brain development and the first year of life is critical to the behaviors and cognitions in adulthood. ***Programmed cell death (apoptosis) is an important mechanism that determined the size and shape of the brain and regulated the proper wiring of developing neuronal networks.*** Pathological activation of apoptotic death pathways under pathological conditions may lead to neuroanatomic abnormalities and possibly to developmental disabilities. It speaks for a possible association between neural cell death and autism. Here, the abnormal apoptosis found in autism from postmortem and animal studies was reviewed and the possible mechanism was discussed. **V. Sarafian (2015)** works in this problem in Bulgaria. She suggests that a possible working mechanism of apoptosis involved in the pathogenesis of autism is proposed.

11. Neurotransmitter dysfunction of autism. (by I. Patcheva, 2015)

Neurotransmitters	Symptoms	Evidence
Serotonin	Social orientation, adaptation, cognition	Serotonin in blood is increased, trombocytes are increased too. Serotonin is decreased in child's brain. Antibodies against serotonin' receptors.
Dopamine in pre-frontal cortex in basal ganglia	Disturbed attention, hyper-activity, motor stereotypes. Repetitive behavior	The levels of homo-vanilic acid in prefrontal cortex is increased.
Norepinephrine	Super-excitabile, disturbed attention, anxiety	Its level in plasma is increased.
Cholinergic dysfunction	Cognitive disturbances; pain anesthesia	The number of nicotine receptors is decreased.
Melatonin	Sleep disturbances	Melatonin level is decreased
Opioides	Pain anesthesia; self-hurt Poor socialization	Increased number of opioides receptors in limbic system.
Glutamate, GABA	Co-morbid with Epileptic disorder, EEG-changes.	Increased Glutamate index with excitor/inhibitor factors, decreased glutamate decarboxilases in parietal cortex & cerebellum, the number of GABA receptors is decreased.

AUTISM- ETIOPATHOGENETIC MECHANISMS

On the next figure are given the most important etiopathogenetic mechanisms of autistic persons (by I. Pacheva, 2015).



Psychological aspects in Autism

The psychological aspect of autism is connected with the names of some child psychiatrist as Melani Klein, Utta Frith, Franses Tustin. They tried to make any connection between their clinical experience and their strange and unusual psychic state.

• Melani Klein

She made the 1st description of an autistic child - Dick



Dick is a 14 years old boy. His QI is equal to a boy of an 1 year and half. He has no adaptation and no connection with the reality and no emotional connection with the person around him. His only effects were connected with high anxiety. He does not care if his mother is in the room, or if she is absent. He does not prefer to play with the children on his age, he preferred to play with inanimate nature instead of real children. He could lead a conversation with the flowers, the toys. Some time he pronounced strange sounds and voices. In his speech are used only little number of words – poor speech and not all of the words are used suitably.

Utta Frith – she is the author of TOM “Theory of Mind”. This theory gives us the ability to realize our behavior. Our actions, and to understand the different mentally states as emotions. If it is not possible we call this state “Mind blindness”. She thinks that just “mind blindness” is connected with autism and with Asperger syndrome and give us the impression for social deficit. “Mind blindness” could be noticed in patients with Schizophrenia, Affective disorders, dementia, and antisocial personality. Autistic children can not make systematization of the facts even some of them have a very good memory. They can not understand the emotions of the other persons.

Bruno Bettelheim

He was in concentration camp for 10 months. He worked as a Director in Chicago in a School for Disturbed Child in 1956. and he had a very big annual salary of \$342.000. He was widely known in American developmental psychologist with his studies with autistic and emotionally disturbed children. His theory for autism for “**refrigerator mother**” was widely spread. He compared the family relations with the keepers (guards) in the concentration camp. He enjoyed considerable attention and influenced the psychologists and psychiatrists till he was alive. The mothers of autistic children were accused that their wrong education and behavior toward their children is the main reason for autism of their child.

According to Bettelheim autistic children were as if they were in concentration camp and their mothers were the guards. They were afraid from everything. Their movements and actions were reduced. They were capsulated. They putted a barrier between them and the world, as if they were in a castle. The world is out of the castle. His theory for autism for “refrigerator mother” was widely spread. He enjoyed considerable attention and influenced the psychologists and psychiatrists till he was alive. The connection mother – child were disturbed. The relationship between the mother and the child were not normal, not emotional.

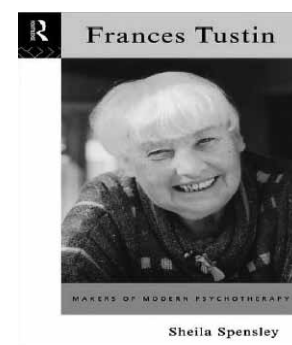
The mothers of autistic children were accused that their wrong education and behavior toward their children is the main reason for autism of their child. Some of them were given in institution and other in adoptive parents. After his death was understood that most of the children were not with autism, he had some sexual abuse with unprotected children. After the death of his wife he made suicide.

Frances Tustin (1913)

Stephan, 6 years boy “He comes with a car-toy, his moth is opened, he lame on one lag, strain every nerve, even his body is spiritless. He stays in front of me, he looks at me, but he does not notice me, his look pass through me, as if I am transparent as a glass. I take down the zip of his jacket, but he did not look at me. No eye contact. He was not in the room, his look was outside of the room, he did not notice anything in the room, even me, that I stood in front of him. He had all symptoms of autism.

This gave her the idea for “psychogenic damage”. His development is not like the development of the normal children. The child is far away from the world, that seems to him “very dangerous”

- Most of this children are helpless and demobilized that is compared with death.



Example with the little John - one day he noticed his mother’s friend to breast-feeding her baby. He mentioned for this to J. Tustin. His explanation was: “The nipple-grain growth on the breast.” He puts his hand across his mouth.



Justine asked him: “Do You think that it growth on your mouth?”

- He took 2 pencils from the table and crossed them. Than he showed the place where the pencils were crossed and tolled “breast”. After that he throw them and said: “broken breast” and “broken nipple-grain”

- Than he putted his hand in the mouth and said: “black hole and the terrible thistle”.

- So Tustin understood that he described the period of parting with his mother’s breast”

- Mother’s breast give everything that the little baby wants, and could it be very cruel when the child must be parted with it.

- According Tustin, little Jon with very elementary way describes the feeling that he had when the mother’s breast were taken away. And after that he has the feeling that something was taken away from him, he compares the “good breast” with the “terrible thistle” later.

Makaton programme for autistic persons

Makaton is a language programme which main purpose is to activate speech communications in autistic persons. This programme is successful used in individuals with cognitive impairments, autism, Down syndrome, specific language problems, some neurological disorders including patients after stroke. Margaret Walker, speech therapist, and two psychiatrists (Katharine Joston and Tony Cornforth) gave the name "Makaton". It was registered in 2007. The original trade mark application for Makaton was filed in UK in 1979. In 2004 it was included as a common method for a language programme integrating speech, manual signs, and graphic symbols, developed to help people with communicative problems and learning disabilities. For example stage 1 is for immediate needs, like eat and drink. The next stages contain more basic communications. The programme is organized and modified in learning to some individual's needs. In the Core Vocabulary, there is a Makaton Vocabulary of over 7,000 concepts which are illustrated with signs and graphic symbols.

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XIX. CHILD PSYCHOPATOLOGY

Child psychopathology is one of the branches in psychology that focused on the children's behaviour from prenatal development through adolescence. This branch deals not only with the physical development of children, as more attention is paid to their psychiatric development as their perception, attention, emotions, volition, speech, behaviour and s. o. The great mistake of the psychologist in the past was that the children were viewed as a smaller version of adults. We must not neglect the fact that child's psychic and behaviour is quite different. For the first time Jean Piaget suggested that children think differently than adults.

History – the term “Child Psychiatry” was used for the 1st time in 1899 in the Mahheimer's monograph “Les Troubles Mentaux de l'Enfance”. The Swiss psychiatrist Moritz Tramer was the 1st that defined the parameters of child psychiatry in terms of diagnosis, treatment, and prognosis in 1933. The 1st academic child psychiatric department in the world was founded in 1930 by Leo Kanner in University of Berlin, under the direction of A. Meyer at John Hopkins Hospital, Baltimore. Kanner was the 1st physician that was identified as a child psychiatrist in US and his textbook “Child psychiatry” was introducing the speciality and the terms, the clinical description of early infantile autism, later known as “Kanner's syndrome”. The 1st questionnaire for intelligence was done in Paris by Simon and Binet in 1905. Some of the first Bulgarian child psychiatrists were Ch. Chistosov, M. Achkova, V. Jonchev, T. Tashev. R. Stamatov is one of the well known Bulgarian child psychologist.

The future behaviour of the child depends on its conceived. It is very important how the future child will be conceived: with love or with hatred, aggression and violence, with sensible or in a drunken state, or under the influence of some medicaments, or intoxication.

Very important moment of the development of the child is the child's birth. According to some psychoanalytics the most stressful child event is when the navel string is being cutting. The newborn child leaving the comfortable and suitable place in mother's womb must go outside and live in a new quite different world. This moment could be compared in this way: imagine that you are on a big ship, and when the ship reached the middle of a big ocean the captain of the ship threw you in the water and said to you: “Now you must continue to live alone”. In the past the newborn babies were given to the mother and for them were prepared a special little child cradle, that was covered with a canopy. In the maternity hospital after washing and cleaning the newborn child the maternity nurse showed to the mother with the words: “Happy, you have a girl!” and after that it is putted in a special perambulator and carried it a big room. The baby is in an absolutely new atmosphere and far from the mother. It was established that when the contacts with the mother during the first days are absent or rare the cognition and emotions are retarded. Later on these children could develop cognitive, intellectual and emotional problems and psychosomatic disturbances.

The 1st years of life are very important and vulnerable for the little child. The infants are learning a great deal about themselves, their world and the people in this world. One of the main things that the infant is concentrating on is forming secure attachment to the main caregivers, that gave them love and sureness. The early stages of childhood are discussed by some psychoanalytics as R. Spitz, S. Freud, A. Freud, M. Klein, A. Adler, and s.o. Their common idea is that infant's affection towards their mothers is not due only to the milk, the mother supplied to them. They think that the infants need not only of milk, but they have to receive human love and more attention. In this period there were marked several viewpoints.

The first viewpoint (the eugenics) – the genetic constructions, and believed that the perfect human race could be created through not allowing society's outcasts to reproduce.

The second viewpoint (the behaviorists) – *J. Watson believed that: “children are born blank slates” and that environment could completely shape them into the people they would become*. They warned that motherly affection towards children are dangerous and that children should be treated as adult.

The third viewpoint (the psychoanalysts) – they stress on the importance of loving relationships in the development of healthy social-emotional child’s behaviors.

Spitz’s observation: 91 infants were placed in the Founding Home located just outside in US. The 1st three months the infants were breastfed by their mothers in the Founding home. The infants enjoyed the affection given by their mothers during the initial three month period. After that all of them were separated from their mothers. The infants were cared for by the nurses and received high quality physical and medical cares. Each nurse had to care for 8 or 12 infants. So the infants had physical and medical needs, but they got approximately 1/10 of the normal affective supplies provided in the usual mother-child relationship: so no love or social support was given to these infants. The author established that just after 3 months after the separation of the children from their mothers was noticed a rapid decline. The infants’ motor activity was decreased, and they become totally passive and they had totally stopped crying. They lied on their backs and had no motivation to roll over or to sit up. The face became vacuous, eye coordination defective, and the expression was look-like that of an imbecile, sadly, the movements of their fingers were strange. Their development was stopped (Spitz, 1945; 1965). After the 2nd year, those who were survived the percentage of their development was “45% of that of the normal”. But it was for the children that were placed back in their loving homes. These children were disabled both physically and mentally. Even the children who were survived and were checked on again at age 4, the majority of them could not seat unassisted, walk, or talk. 34 of these infants did not survive and the death-rate among them was 37.62% and it was higher in comparison with the normal. Only two died of disease. *It was a horrific example of low social-emotional development.*

Rene Spitz – the wrong mother’s behavior could be a poison for the child.



The wrong mother’s behavior is:

Vomiting	←	1. Active refusal from mother’s role, sexuality and pregnancy.
Neuro-vegetative instability.	←	2. Passive refusal from pregnancy.
Intestinal colic	←	3. Super-worries and fear for the child’s health. If she has conflicts with her husband, mother-child’s symbiosis appears.
Dermatitis	←	4. Hidden hostility of the mother. It appears with fear and worries about the child. She avoided the contacts with her baby the 1st 6 months.
Poor child-mother’s connection	←	5. Fluctuated mother’s behavior – she could be very heartily of very strict with her child.

1. Memories of her parents’ behavior in early childhood;
2. Dissatisfaction from her husband;
3. Lack of selfconfidence.

Rene Spitz tries to explain the various forms of wrong mother’s behavior. He gives various child physical, psychosomatics manifestation in children that could be due to the wrong mother behavior as: active/passive refusal of sexuality and pregnancy, the appearance of pathological symbiosis with her child, hidden hostility, or fluctuation of her emotional state.

Spitz introduced the term “**anaclitic depression**” that includes emotional deprivation (the loss of loved object). If after 3-5 months the child received the love by the love object, recovery is undoubted, but when it is after more than 5 months the child will develop symptoms of changed for the worse. He called this fact “**hospitalism**”. He studied the hospitalism in children in a founding home. He recorded his research on film “Psychogenic Disease in Infancy” (1952) shows the effects of emotional and maternal deprivation on child development.

The attachment theory: Bowlby was born in London. Normally he saw his mother only one hour a day after teatime. Like many mothers of her social class, she considered that parental attention and affection would lead to dangerous spoiling of the children. Bowlby was lucky in that the nanny in his family was present throughout his childhood. When he was at the age of 4 his nanny left the family and he described it as a tragic moment, like a loss of his mother. His early loss of “mother-figure” later directed him to this theory. At the age of 7 he was sent in boarding school. He studied pre-clinical sciences. He had special interests in child’s development. So appeared his earlier work on delinquent and affectionless children and the effects of hospitalized and institutionalized care. He turned his view towards **maternal deprivation**.

When we discussed the child’s development we must stress on several moments as:

The social context – the child’s relationship with the family (parents, brothers, sisters and some other relatives) play an important role for their future development. The little children can not live outside of their nature society, as their speech and human habits will not develop. Typical for this is the historical experiment of the monarch Frederick II (Holy Roman Emperor, 1194-1250 AD). For more information see pp 25-26. Because of the language deprivation these children did not develop their speech.

CASE REPORT FOR SPEECH DEPRIVATION

Case of a child: Ivana is a teacher in a children garden. She wanted a consultation for her little boy, that is 3 years old. I asked her about the problem and the early child’s development. Every thing was in normal, the only problem was that the child did not want to speak. “Doctor all children in my group, where I am a teacher could speak, but my boy does not speak. His hearing is normal.” My first impression was that the mother was very sensitive, reticence, that she had communicative problems. She was divorced, and she cared for the child alone. My next question was: “And did you speak to your child”. Ivana was astonished: “Doctor, what can I speak to a little child that could not understand anything?” I spoke to myself: “Yes the child could not understand anything, but I understood the problem why the child does not speak”. Then I turned to her: “Dear me, if you do not speak to your child it is not possible to begin to speak.”

• I gave her an example with young female, that is my neighbor and is with mental retardation. She had 3 little boys. All days she speaks to them thoughtless and foolish things and sings false songs. They had no communicative and speech problems in the children garden and in school.

• **The conclusion is: it is better to speak foolish things than to be a witty silent sphinx.**

QUESTIONS FOR HOMEWORK

Green group:

- **What do you think about the mother?**
- **What advise will you give to her?**
- **Who needs a therapy – the mother, the child, or both of them?**

Yellow group:

- **What do you think about the mother with mental retardation?**
- **Must we advise her to go to solfeggio not to sing false?**
- **Did her boys need any therapy?**

• **The Cultural Context:** Culture may play a role in how children relate to their parents, the type of education they receive and the type of child care that is provided.

• **The Socioeconomic Context:** Social class can also play a major role in child development. Socioeconomic status (often abbreviated as SES), is based upon a number of different factors including how much education people have, how much money they earn, the job they hold and where they live. Children raised in households with a high socio-economic status tend to have greater access to opportunities, while those from households with lower socioeconomic status may have less access to such things as health care, quality nutrition and education. Such factors can have a major impact on child psychology.

Mothers are more likely to assume caregiving responsibilities from the time the child is born even when the father is at home and has the ability to help. Fathers are more likely to engage the infant in active and stimulating play. As the child grows older, the father's role as a playmate generally continues. The newborn lives in the smallest society, and it is the society of the family. The presence of the mother and father in the family gives an impression of the children for female or male behaviour in the society. For many years in the various cultures mothers looked after their little children. The father was the working member of the family. By the middle of the 20th century, the percentage of working mothers in the most European countries and in USA had increased

Mothers who worked outside the home were considered neglectful of their children if they did not have to work, or unfortunate (if they did). So many of the children of working mothers were found to be superior. Now more than 50 % of the mothers in USA are employed. We must stress on the fact that the percentage has increased from 19 % in 1960 to 55 % in 1986 (in: J. Dworetzky. Psychology. 3th edition, 1998). As a result, millions of children do not have a parent to care for them all day long. Working mothers tend to compensate for their absence by interacting more with their children, when they are at home.

Psychologists pay more attention to physical and motor development.

PHYSICAL and MOTOR DEVELOPMENT	<ul style="list-style-type: none"> • from 2.3 to 4.7th month, • from 4.8 to 7.8th month, • from 5.0 to 10th month, • from 6 to 10th month, • from 9.8 to 13.9th month, • from 11.3 to 14.3rd month 	the child rolls over, sits without support, stands holding on a wall, chair and s. o. tries to stand up, stands alone well, walks well.
	Physical growth of adolescence	The beginning of adolescence is characterized by various physical changes. These changes are controlled by genetics and hormones. One of these changes is the development of sexual maturity, which occurs during the period of puberty. Researchers have found that the hormone melatonin is responsible for puberty.
	Adolescence is a period of storm and stress	G. Stanly Hall published the first scientific study of adolescence. This period is full of many changes in direction and fluctuations in mood. Adolescents must deal for the first time with sexual relationships, the choice of career, political decisions, economic and s. o.
COGNITIVE DEVELOPMENT	Concrete operation stage by J. Piaget (1896-1980) - Swiss researcher	About the time children enter school, they develop the ability to give to replies on logical conclusions. In Piaget s view cognitive development is the combined of result of the development of the brain and the nervous system.
THE DEVELOPMENT OF MEMORY	metamemory (between 5 and 10 years)	Mature strategy efforts appear when children are about 10 years old.
PERSONALITY DEVELOPMENT	During the 2nd year	The ability of young children to begin to regulate their behaviour is one of the major achievements. This regulation becomes necessary during the 2nd year

I. ABOUT PHYSICAL AND MOTOR DEVELOPMENT OF THE INFANT

Nothing is more natural than a species reproducing itself. About human reproduction: new life is created when egg and sperm unite. The sex of the newborn child is determined by the 23rd pair of chromosomes. In 1956 Tjio & Levan showed that the number of chromosomes is 46, and not 48 (In Psychiatric Dictionary, 5th edition, by R. Campbell, 1981, p. 107). In the usual type of Cell division, one cell divides to form two new cells; in sexual reproduction, on the other hand, two cells (the germ cells - one from the paternal side and one from the maternal side) join together to form a single new cell. During the first three months the human growth is as a linear progression. That is why it is very difficult to study the psychic state of the earliest childhood. So child psychology is one of the youngest psychology, and the reason for this is the speech barrier between the psychologists and the newborn.

The mostly discussed aspects of infant development among parents is about the child's physical growth and motor development, because they are so readily observed.

Child psychologists make a commentary about 3 main crises in childhood

FIRST CRISIS	The age between 2 & 4 years, s. c. negative phase	<p>Verbal skills and motor activity are increasing. It is the most difficult period for the parents, because their child opposes everything. The parents must be patient and calm.</p> <p>Margaret Machier – a child can begin to feel better with the mother's absence by knowing she will return. A child can tolerate, delay and endure separations.</p> <p>S. Freud (phalic – oedipal phase) – a genital focus of interest, stimulation and excitement. The penis is an organ of interest for both sexes.</p> <p>E. Erikson – initiative and guilt (locomotor genital). Initiative crises in relation to tasks for the sake of activity, both motor and intellectual. Guilt may bring about a crisis over goals (especially aggressive). A preschooler learns to initiate tasks and grapple with self-control.</p> <p>J. Piaget – preoperational stage (a child presents things with words & images)</p>
PRE-SCHOOL CRISIS	The age between 6 & 7 years	<p>This is the period when the child goes to school and must sit at the desk about 30 min, must listen to the teacher carefully and must be able to learn the lessons. Some parents have problems with their pupils.</p> <p>S. Freud – the formation of superego. Another two psychic structures are the ego, which is a group of functions mediating between the drives and the external environment, and id, repositories of sexual and aggressive drives.</p> <p>E. Erikson – a child is busy, building, creating, a child learns either to feel efficient or inadequate.</p> <p>J. Piaget – concrete operational phase.</p>
PUBERTY CRISIS	The age between 12 & 15 years	<p>Puberty is the stage of growth extending from the termination of the puerile to the beginning of the adolescent period. It begins with the acquisition of secondary sexual characteristics and continues for approximately 2 or 3 years thereafter. In Bulgaria, puberty age is from 10 to 15 years (for girls is from 10 to 14. whereas for boys it is from 11 to 15).</p> <p>S. Freud – genital phase, final stage of psychosexual development.</p> <p>E. Erikson – struggle to develop ego-identity, group identity.</p> <p>J. Peajet – formal abstract phase.</p>

According to the different authors there were various stages in childhood. The most spread are the stages of Margaret Mahler, Jean Peaget, S. Freud and Erik Erikson.

- **Freud's psychosexual stages** are: oral, anal, phallic, latency, genital. They are described on p. 125.

- **Erik Erikson** – like Freud and many others, Erik Erikson maintained that personality develops in a predetermined order, and builds upon each previous stage. This is called the epigenic principle. He doesn't talk about psychosexual Stages. He discussed psychosocial stages. His ideas were greatly influenced by Freud. However, whereas Freud was an id psychologist, Erikson was an ego psychologist. He emphasized the role of culture and society and the conflicts that can take place within the ego itself, whereas Freud emphasized the conflict between the id and the superego. According to Erikson, the ego develops as it successfully resolves crises that are distinctly social in nature. These involve establishing a sense of trust in others, developing a sense of identity in society, and helping the next generation prepare for the future (by Saul: McLeon, 2008). Erikson extends on Freudian thoughts by focusing on the adaptive and creative characteristic of the ego, and expanding the notion of the stages of personality development to include the entire lifespan. He stressed mainly on the adolescent period, and his 8 stages 5 of them include the age from newborn period till 18 years of age. However, instead of focusing on sexual development (like Freud), he was interested in how children socialize and how this affects their sense of self.

Stage	Psychosocial Crisis	Basic Virtue	Age
1	Trust vs. mistrust	Hope	Infancy (0 to 1.5)
2	Autonomy vs. shame	Will	Early Childhood (1.5 to3)
3	Initiative vs. guilt	Purpose	Play Age (3 to 5)
4	Industry vs. inferiority	Competency	School Age (5 to 12)
5	Ego identity vs. Role Confusion	Fidelity	Adolescence (12 to 18)
6	Intimacy vs. isolation	Love	Young Adult (18 to 40)
7	Generativity vs. stagnation	Care	Adult hood (40 to 65)
8	Ego integrity vs. despair	Wisdom	Maturity (65+)

(by Saul McLeod published 2008, updated 2013)

His theory stressed from one side on the normal development of the person and on the psychological deformation that could be developed under the surrounded.

The various psychological stages could be attacked by positive or negative life events. When everything is good the child could enter in the next stage without any problems, but when there is a serious problem at a given stage it reflects on the following stage and it could be a predisposition for them in future to develop depression or s.o. psychological problems. So according him is very important for the child to receive love in the early stages of his life in order to overcome the future problems.

On the next table are given the various Erikson's stages and their psychosocial crises. **Erikson's psychoanalytic theory** identified 8 stages. He shows the gradual development of the human from infancy to late adulthood. In each stage, the person confronts, and hopefully masters, new challenges. Each stage builds upon the successful completion of earlier stages.

Approximate Age	Virtues	Psychosocial crisis	Significant relationship	Existential question	Examples
0-2 years	Hope	Basic trust vs. mistrust	Mother	Can I trust the world?	Feeding, abandonment
2-4 years	Will	Autonomy vs. shame and doubt	Parents	Is it okay to be me?	Toilet training, clothing themselves
4-5 years	Purpose	Initiative vs. guilt	Family	Is it okay for me to do, move, and act?	Exploring, using tools or making art
5-12 years	Competence	Industry vs. inferiority	Neighbors, school	Can I make it in the world of people and things?	School, sports
13-19 years	Fidelity	Identity vs. role confusion	Peers, role model	Who am I? Who can I be?	Social relationships
20-39 years	Love	Intimacy vs. isolation	Friends, partners	Can I love?	Romantic relationships
40-64 years	Care	Generativity vs. stagnation	Household, workmates	Can I make my life count?	Work, parenthood
65-death	Wisdom	Ego integrity vs. despair	Mankind, my kind	Is it okay to have been me?	Reflection on life

The challenges of stages not successfully completed may be expected to reappear as problems in the future. Erikson's stage theory characterizes an individual advancing through the eight life stages as a function of negotiating his or her biological forces and socio-cultural forces. Each stage is characterized by two opposite conflict. When the individual does not overcome the conflict he is not prepared for the next stage and there is a predisposition for serious psychological problem. This affect his future behavior and could provoke serious psychiatric disorders as depression, schizophrenic disorder, or various complexes that could not allowed him to live normal. His complexes could control totally his future behavior.

ERIKSON'S EIGHT STAGES OF MAN

1ST STAGE; 1st year	Can I trust the world?		Freud's oral stage
During this stage the world the degree to which the child learns to trust the world, other people & himself, depends upon the quality of care he receives.	TRUST	MISTRUST	If that care is inadequate or inconsistent, basic mistrust develops, an attitude of fear and suspicion of the world.
2ND STAGE; 2nd & 3rd year	Is It OK to Be Me?		Freud's oral stage
The care in this stage is adequate. It consists of allowing the child to do what he is capable of, at his own place, so that he can develop autonomy, i.e. the ability to control his muscles, his impulses, himself and ultimately his environment.	AUTONOMY	DOUBT	Inconsistent, overcritical or over-protective care on the other hand feels the child with doubt about his own abilities to control his world and himself.
3RD STAGE; 4 & 5 year	Is it OK for Me to Do, Move, and Act?		Freud genital stage
Adequate care in this stage provides freedom, and opportunity for the child to initiate motor play, fantasies, and intellectual questioning of those around him so that he is no longer only imitator of others.	INITIATIVE	GUILT	If the child is inhibited or derided for his play activity or his inquisitiveness, he will develop guilt, about self-initiated activities.
4TH STAGE; 6-11 years	Can I Make it in the World of People and Things?		Freud latency period
This is a Robinson Crusoe age. The child learns to reason deductively and to obey the rules of the game. It is concentrates with the details of how things are made, how they work, and what they do. Parents must encourage the child to make and do practical things.	INDUSTRY	INFERIORITY	If the child is not supported in this period on the negative side a sense of inferiority will be installed in the child.
5TH STAGE, 12-19	Who Am I and What Can I Be?		Adolescence
During this period the person can wonder about what other people think of him. He can compare his own family or society and he develops a sense of who he is, where he has been, and where he is going. But both the family milieu may interfere with the development of a sense of ego identity.	IDENTITY	ROLE CONFUSION	When rapid social and technological change breaks down traditional values, the adolescent may develop a sense of role confusion in that he finds no continuity between what he has learned and what he is experiencing as an adolescent.
6th STAGE; 24-24; 20-39;	Can I Love?		From adolescence to middle age.
It is the period from adolescence to early middle age; roughly, the period of courtship and early family life. During this phase, the person must learn to share with and care about another being without the fear of losing his identity.	INTIMACY	ISOLATION	If he does not receive this he develops a sense of isolation, a feeling of being lonely, without anyone to share with or care for.
7th STAGE, 26-64; 40-64;	Can I Make My Life Count?		Middle age
Persons concerned about others beyond their immediate family, and about the nature of society and the world in which future generations will live.	GENERATIVITY	SELFABSORPTION	On the negative side of the person without a sense of generativity becomes self-absorbed in his personal needs & comforts.
8th STAGE; later adulthood, 65-death;	Is it OK to Have Been Me?		Old age
The person who can look back on his life with satisfaction who can pause to reflect on the past and take time to enjoy his grandchildren, manifests a sense of integrity.	INTEGRITY	DESPAIR	His past life is a series of mistakes & missed opportunities that can not be undone; he is filled with despair at the thought of what he might be.

Let us follow his stages:

- **The 1st stage (trust-mistrust)** is connected with the basic needs of the infant that are met by the parents. The newborn child could receive by the parents love and satisfactory of his needs. The infant totally depends on the parents. It could not live without their help. If his needs are satisfied the infant is quiet and calm. But if the infant is a neglected child and his needs are not always satisfied in the next stages of his life the child will receive some problems. His expectations are not satisfied and the infant is disappointed. It could provoke not only attacks of fear and suspicion of the world, but it could be the reason for the infant's motor and intellectual development, or s. c. social retardation. This is equal to Freud's oral stage. The little child puts everything in his mouth, and it is normal for this stage.

Case: Dr Stoyanova visited her colleagues in the department with her little baby, that was about 8th months. The baby took the stethoscope of her colleague, and putted it in his month. He was surprised and made a remark to her: "Your daughter is a foolish girl. You must educate her not to put everything in her month." It is normal, the problem is that some parents could punish the little baby for such a behavior, but they do not know that in this case the punishment will not help the child and the child will be mistrust.

- **The 2nd stage (autonomy and doubt)** – this period of child's life is connected with the ability to control his motor abilities and to study the surroundings. The parents are still necessary to provide some of their basic need, but the child could stabilize his locomotive, he tries to pronounce some sounds, words and to make elementary sentences. The end of this period is characterized with ability to control his sphincters or his cleanness' habits will build. The baby can recognize his face in the mirror. Its Ego is formed and the child tried to support the others. Negativism is expressed in this period. If the parents can not understand it and punish the child's negativism will persist during the later stages of his life. Parent's behavior is very important. They must use the most suitable way to make the child to fulfill their wish.

Case: Dima is about 4 years old. She does not want to eat meat ball. One day they had guest and her mother said to her: "Dima we shell have many guests this evening, and my meat balls are not enough. You will not eat meat-balls." When the guests came the mother putted to all of them meat balls in their plate. When her daughter's order came she said: "Dima you do not like meat balls, so I shall miss you". The daughter cried angrily: "But now I like meat balls." And for the 1st time she was eating 3 meat balls.

The parents' patience and encouragement helps foster autonomy in the child. Children at this age like to explore the world around them and they are constantly learning about their environment. Caution must be taken at this age while children may explore things that are dangerous to their health and safety. At this age children develop their first interests. For example, a child who enjoys music may like to play with the radio. Children who enjoy the outdoors may be interested in animals and plants. Highly restrictive parents, however, are more likely to instill in the child a sense of doubt, and reluctance to attempt new challenges.

The 3rd stage: Purpose: initiative vs. guilt (locomotor-genital, preschool, 4-5 years): At this stage, the child wants to begin and complete its own actions for a purpose. Guilt is a confusing new emotion. They may feel guilty over things that logically should not cause guilt. They may feel guilt when this initiative does not produce the wished results. Young children in this category take the invitation for guilt. The judgment is important for the children. They could take the role for leadership and to have a goal for some achievements. Could be noticed elements of aggressive behavior (to through objects), even to plan engagement. Preschoolers are able to fulfill some tasks, even can begin new things. With the increasing of their independence they begin to persecute many ideas, and some of them are beyond their capabilities. If they are encouraged by their parents and preschool teachers, the children's initiative will develop in future.

How could we stimulate their initiation.

Case: Mira is 24 years young female. She had a daughter in children garden. When her working day finished at 5 o'clock, PM, she buys some products from the market, take her little child from the children garden and returns at home. She had to prepare the supper. The little daughter comes to her and said to her mother: "Mammy, I want to cook too".

The 1st version: (Green Group)	The 2nd version: (Orange group)
<p><i>The mother has no time, she must hurry with the supper, because her husband will come after an hour and she must prepare the table. She cries angrily to the little child: "Please do not interrupt me! I have no free time. Go to your room and play with your toys, or see video, or take your tablet and play your lovely game." The child continues to cry: "Please mother I want to help you". The mother becomes very angry and again pleased her to play in her room. The child begins to cry, after that she pushes the large baking with the products on the floor. The mother becomes very angry, cries loudly to the child and hits her on the face. The child begins to sweep and runs out of the room crying loudly. The mother runs after her, but just at that moment suddenly she pull-away the tablecloth and everything falls on the floor. She is very angry and helplessness. When her daughter appears on the door she cruelly beats her and accuses her for this incident: "You are guilty for everything. I shall explain it to your father. I shall punish you". You must stay at the wall 30 minutes and when father comes you must tell him for your poor behavior. I do not want to listen from you any explanations. You must promise me that this will never repeated in future" The child is very frightened and weeping repeats many times: "I am guilty. I am very terrible child. I will never do it any more".</i></p>	<p><i>The mother has no time to prepare the supper. She putted the products on the table and began to cook. The little daughter came to her mother and said: "Please I want to help you. It was not possible for the mother to make her to go in her room and to play with the toys. As she had no time she gave her another plate and told her: "You will do everything as I do, and you will put your products in your little baking. I shall put them in the oven to bake together. Than we shall see who is a better cooker. The little child repeated everything that the mother did. When they were ready mother putted them in the oven. The mother through the daughter's meat. When the father came she putted meat in the child's plate from her meat. When the supper began the mother said to the father: "Today our daughter cooked with me. This is her meat, and that is our meat." Than the parents asked the daughter: "Can we taste you meat?" The daughter answered: "Yes but only one spoon". The parents taste her meat and cried out: "O, it is wonderful meat. Mother I am surprised that our little daughter is a very nice cooker. You must learn her reception and the next time you must prepare the meat like her". The little child was very satisfied and began to eat her meat with a great pleasure.</i></p>
<ol style="list-style-type: none"> 1. What can You say about the mother's behavior? 2. Do you think that this child will be with a predisposition to develop thoughts for guilty in the next stages? 3. Who needs behavior therapy? 4. What advice could you give to the mother? 5. Do you think that it is necessary to have a meeting with the child in order to decrease the thoughts for guilty? 6. How could you help in this situation? 7. Is it important the father's behavior? 8. What will be her reaction if her father said to the daughter: "Do not be angry with your mother. When she is on duty in the school, we shall prepare together a meat for supper". 	<ol style="list-style-type: none"> 1. What do You think about this version? 2. Do You think that it is good to lie the little child? 3. Does s. b. from the family needs some kind of psychotherapy? 4. Will this child develop thoughts for guilty in the future? 5. Can you think out another version of this case? 6. What will be the child's reaction if the father said: "I do not believe that you had prepared this meat. Your mother through out your terrible meat and putted in your plate from her meat. When I was a little boy my mother did the same trick."

It is very important that it is uselessness to be angry with the little child. In this case we must choice the best way to satisfy the child's wish and initiate, because it will help the child to be more sure and enterprising.

The 4th stage: (Competence: industry vs. inferiority; latency, 5-12 years) – “Children at this age are becoming more aware of themselves as individuals.” They work hard at “being responsible, being good and doing it right.” They are now more reasonable to share and cooperate. This is the Robison Crusoe’s age. The child thinks deductively and they obey the rules of the game. The parents must encourage the child in doing practical things. When the child is not supported in this period a sense of inferiority will be instilled in the child. At this age, children start recognizing their special talents and continue to discover interests as their education improves. They may begin to choose to do more activities to pursue that interest, such as joining a sport if they know they have athletic ability, or joining the band if they are good at music. If not allowed to discover their own talents in their own time, they will develop a sense of lack of motivation, low self-esteem, and lethargy. They may become “couch potatoes” if they are not allowed to develop interests.

Case – Ivan is 23 years old young male. He is very handsome and unhappy boy. He could not take alone any decision. He could not have a girl-friend as he has no self-confidence. He often visited various psychiatrists, psychologist and psychotherapeutics, but nobody could help him. He wanted to understand the reason for his problems and begin to study psychology in university. For a period of 10 years he used various psychopharmacological drugs – antidepressants, tranquilizers, neuroleptics and thymostabilizers. He had 3 suicide attempts. He wanted very much to have a family, but could not find the best girl for him. When he was 30 years old he had a friendship with a girl that worked as a teacher in a big town. He very much liked her. He told her for his problems and recognized her with his psychiatrist. They had sexual contacts and he wanted very much to marry her, but her father was against this connection, because he was from a village and did not finish university. Their love was very strange – some time they were very happy, some time they quarreled and for a period of 6 months he visited me almost each 2-3 days. He recorded their telephone conversations and pleased me to listen all of them and to make an interpretation of her thoughts and feelings. He could not sleep and almost 80% of his wage was to pay for the telephone conversations. He used various antidepressants in big doses and tegretol 600-800 mg. He wanted to understand the truth. One day during our séance he said to me: “Doctor, I think that the roots of my problems come from my early childhood. I was the long-awaited boy in the family. I have a sister that is 12 years bigger than I am. As I had problems with lungs, I often was absent from the school. When we went to school she had to wear my school-back and her school-back. She had to look after me. Everybody from the family cared for me and did not permit me to work with them in the field, or to do any heavy physical activities. They treated me as a sickly child. What happens later in the life? My sister was very ambitious, initiate, she could begin to do many things and she is surer that she will success, she had no communicative problems with the persons, she is a president of a firm, she is married and has 3 children. Nobody helps her. What about me? I have nothing till now. All of my classmates have 2 or 3 children, but I could not even marry.” It was a little progress, as after 10 years he could analyze his childhood. Two months later his friend was pregnant. She did not know what to do. She did not tell him her decision. It was very traumatic moment for him. He wanted this child. After the 3rd month she decided not to make abortion. They had a boy, but she did not allow him to see his child. Her parents did not permit him to make a contact with their daughter and her child. The psychotherapeutic séances were almost each 3-4 days. First they tried to live in the village with his parents, but she was not satisfied. He was weeping, he had serious depression and the doses of antidepressants had to be increased. He pleased her to give him another chance and he engaged an apartment. They were there for 3 months and tried to live alone, but after that she returned to her parents. After that he did not come for consultations any more. Five years later I saw him with a little boy in a big magazine. He was grow fat, but satisfied. I was astonished from this meeting. He answered to my question: “At last we are together. I am very happy. We live together with my parents. She is a very good wife and very polite with me and with my parents. I did not tell you, that I had visited Vanga in Petrich. She said to me that I shall marry for the most charming girl in the world. And she recognized everything for my future...”

The elementary school years are critical for the development of self-confidence. If children are encouraged to make and do things and are then praised for their accomplishments, they begin to demonstrate industry and hard learning to receive some success in school. If children are not tolerated or punished for their efforts or if they find they are incapable of meeting their teachers’ and parents’ expectations, they develop feelings of inferiority about their capabilities.

The 5th stage – Fidelity: identity vs. role confusion (adolescence, 13-19 years). Existential Question: **Who Am I and What Can I Be?** In later stages of Adolescence, the child develops a sense of sexual identity. As they make the transition from childhood to adulthood, adolescents think over their role in the adult world. This is the stage of identity – the child makes a comparison of family roles from the previous stages and the build frame from the society. If they do not pass each other it is not a problem for the child to enter in the next stage. This stage is the bridge between childhood and the adulthood. So the most suitable explanation is the term **“Identical Crises”**, because the persons form various identifications.

Pubertal age is a time of radical physical changes of the body and mental changes. According to Erikson, when an adolescent has balanced both perspectives of “What have I got?” and “What am I going to do with it?” he or she has established their identity:

Case – Milen/Milena: *He/She is a boy/girl at 16 years old. The child was the 3rd child in a poor family that lives near the Greece border in a very small village, no more than 15-20 houses. The family had 2 daughters and wanted very much to have a boy. When the 3rd child was born it was a problem to be identified the sex, as there was a strange deformation of the genitals and it was difficult to understand if it was a deformation of an abnormal big clitoris or an abnormal penis. As the parents wanted very much to have a boy, they decided that the 3rd child was a boy and named him Milen. Everybody from the village knew that they had a boy. The father was very happy. He was an wood-worker and his great wish was his son to continue his trade and to become a good carpenter. He always took him in his workshop and wanted he to learn to work with some of the instruments. Milen did not like to do this, but his father noted that if he does not have a male trade the girls will joke with him and will compare him with a female. It was strange that Milen did not prefer to work with his father. He was happy when he played with the dolls and the toys of his sisters. His father was very angry with him and often punished him and offended him that the real males never play with dolls and never cook with their mothers. When he was alone, he weared his sister’s dress and to look at the mirror. When he was 11 years he had to go in the next village to continue his education. He had to live with 2 other boys in one room. In this age appeared the typical signs for girls, and the menstrual cycle. He had to hide his breast. Milen had the consciousness that is a girl, but 14 years he was treated as a boy. He decided to make a consultation in the Medical University, Plovdiv. His hormonal, genetic and consciousness status were typical for females, only deformation of his clitoris was established. After a surgery operation this deformation was eliminated. So Milen became Milena. For the 1st time she could wear female’s cloths and to have a long hair.*

The 6th stage – (Intimacy) – Love: intimacy vs. isolation (young adulthood, 20-24, or 20-39 years). Existential Question: **Can I Love?** It is often characterized by marriage, many are tempted to cap off the fifth stage at 20 years of age. However, these age ranges are actually quite fluid, especially for the achievement of identity, since it may take many years to become grounded, to identify the object of one’s fidelity, to feel that one has “come of age.” In the biographies *Young Man Luther* and *Gandhi’s Truth*, Erikson determined that their crises ended at ages 25 and 30, respectively: The Intimacy vs. Isolation conflict is emphasized around the age of 30. Once people have established their identities, they are ready to make long-term commitments to others. They become capable of forming intimate, reciprocal relationships (e.g. through close friendships or marriage) and willingly make the sacrifices and compromises that such relationships require. If people cannot form these intimate relationships – perhaps because of their own needs – a sense of isolation may result; arousing feelings of darkness and angst.

Case – Nora *is 30 years old female, and she is the 2nd child of the family. She had a bigger sister. Their father worked in military services. He was with very despotic, strict and severe character. He applied his rules in the family and nobody, even his wife, could not against his opinion. The main task of his daughters was to study, and they were punished physically (they were cruelly beaten with his belt) and psychologically (did not permitted them to go to theater, or did not give them money for everyday needs). If their mother tried to defend them he became angry with her and several time she was beaten from him in front of the children. He did not permitted them to have a meeting with a boy.*

His rule was: You must finish university, to begin to work and after that you can think for friends and for family. Her bigger sister played on piano. She went in Western Europe and lived together with her aunt, the sister of her father. She is not married and lived alone in Berlin, she played on violin and her philosophy was that to have a family is the most foolishness. The big daughter of the family was 36 years and even she had great professional success in music, she had no intimate friend, even she was not kissed by a male. What about Nora. She wanted consultation because she had never had a boy-friend and she was troubled by this. She finished musical school, and she decided to continue her education. During the séance she explained what she had to do, but in her near future the problem with the boy-friend was too far. She said: First I must candidate for musician teacher, after that to find an working place, than to buy a flat to live apart from my parents, than to furnish my house. I said to her: "Dear Nora, you are 30 years old. All these tasks will take you more than 10 years. When will you find your lovely boy, and do not you thing that it is almost impossible to have a child after 40 years?" She interrupted me: "But if I do not do all this things my father will not permit me to have a friend". Than I asked her: "How old was your father when he married?" She added: "He was 24 years, and my mother was 21" Till this age she, just like her sister and her aunt, had no friendship with boy, she had never had any meeting with a boy, even she was a charming young female. This is connected with the father's despotism. Her mother decided to help her, and she went to live together with her grandmother in another flat, but she could not change her thinking. After this despotic father's education in the early childhood, she could not enter in the next stages, or she is afraid to share something with anybody. For the 1st time after 30 years the mother tried to help her daughter and to support her. She was afraid that her daughters will have the fate of their aunt that was 58 years, and is not married. The father did not want to have a conversation with the doctor, as he was sure that his behavior is correct.

As she had serious problems in her previous stages in this stage isolation will be expressed. These persons have a predisposition for depression or psychosis.

Questions: Make a commentary on this case. What advice would you give to this mother, to the daughter?

The 7th stage – Care: generativity vs. stagnation (middle adulthood, 25-64, or 40-64 years): *Existential Question: Can I Make My Life Count?* Generativity is the concern of guiding the next generation. Socially-valued work and disciplines are expressions of generativity.

The adult stage of generativity has broad application to family, relationships, work, and society. "Generativity, then is primarily the concern in establishing and guiding the next generation... the concept is meant to include... productivity and creativity. The case that was described in the previous stage is actual and for this stage. During middle age the primary developmental task is one of contributing to society and helping to guide future generations. In contrast, a person who is self-centered and unable or unwilling to help society move forward develops a feeling of stagnation – dissatisfaction with the relative lack of productivity.

The main tasks of middle adulthood are: Express love through more than sexual contacts; support healthy life patterns; develop a sense of unity with mate; relinquish central role in lives of grown children; accept children's mates and friends; adjust to physical changes of middle age; use leisure time creatively; reverse roles with aging parents; help growing and grown children to be responsible adults; create a comfortable home; be proud of accomplishments of self and mate/spouse; achieve mature, civic and social responsibility.

The 8th stage - Wisdom: ego integrity vs. despair (late adulthood, 65 – death): *Existential Question: Is it OK to Have Been Me?*

As we grow older and become senior citizens we tend to slow down our productivity and explore life as a retired person. During this time we are able to develop integrity, if we see ourselves as leading a successful life.

If we see our life as unproductive, or feel that we did not accomplish our life goals, we become dissatisfied with life and develop **despair**, often leading to depression and hopelessness.

The final developmental task is retrospection: people look back on their lives and accomplishments. They develop feelings of contentment and integrity if they believe that they have led a happy, productive life. They may instead develop a sense of despair if they look back on a life of disappointments and unachieved goals. When their previous stages were successful they are satisfied as they had good realization in their profession, they are happy with their children, and are not afraid from the coming end of their life.

What will happen if the person had problems during the previous stages:

Case: *I had a classmate, from a little town. Her name was **Rina**. She was ashamed from her family, because she was a poor girl and her father worked as a driver. But the most serious problem was that he was an alcoholic, and almost everyday when he returned home he was drunk. We lived in a boardinghouse and some of the girls had luxury underclothes. When her mother came to visit her she always wanted from her to find some nice clothes as that of the rich girls. Her mother always tried to satisfy her wishes and desires, even she had not enough money. Rina fall in love in Peter, who was the most handsome boy in the school. His father was a professor in the university. He did not even notice Rina, as she was not a beautiful girl, her figure was not very nice, as she was fat. He fall in love in another girl and when they were students they married. Rina had great ambitions, she finished medicine and she married for a boy from her group. They had two children, her husband was very intelligent, and he defenses his thesis for medical doctor. He was associate professor in rheumatology, and was a very good specialist. One of their children finishes university in China, Pekin, the other in Berlin. After the reforms in Bulgaria, when many persons could not buy the most necessary thing they had two good flats in a big town, her sons were married and worked and lived in USA and England. She had 4 grandchildren. Our class had a meeting 40 years after finishing secondary school. All of us were very happy and we remembered various stories from school period. One of our classmates was a widow, 3 of them were divorced, 5 worked as teachers and were not married and had to care for their ill parents. She was one of the classmates that had the most successful life after secondary school. Everybody was happy. An hour later Rina said to me: "If my father did not work as a driver and was not an alcoholic Peter should marry to me". I was astonishes by her declaration. She did not understood that he loved another girl and that he never liked her. It was strange that after 40 years she could not forget him and even the fate gave her everything that one could received from the life, she was not happy. And it is because the first 3-4 stages of her live did not gave her positive emotions.*

The classmates that were not married did not deplore from their fate. One of them said to us: "I am a teacher in Russian language. I had a charming student love. We divorced, but I do not thing that I have a terrible fate. I have not a child, but all my pupils are my children. They love me, they are often my guests, they share with me their problems and I can give them a good advice. I am some thing as a treasurer of their secrets. I am satisfied from my life.

How can we explain the fact that s.o. who received everything at the end of his worldly life is not satisfy and others that could not receive the most important thing from their life were happy. May be the reason is in their early childhood, if they had received positive/negative emotions from their family. Rina was in a secondary school, where most of the pupils were from famous families. She had many complexes from one side from her family, her drunken father, and from the other side from the rich children in the school that had very modern cloths and their fathers had prestige profession.

About the sleep-wakefulness rhythm – In the past, about 4 decades ago the instructions of the doctors were the newborn infants to be feed each 3 hours. According Emde (1975) each newborn child has its own sleep-wakefulness rhythm. He established that some infants need to sleep 3 hours and to wake 4 hours, for other this proportion is 3:3; 4:5; 5:6. So the best for the child is that the child must follow its own circadian rhythm. If we feed the child each 3 hours we shall disturb the biological child's rhythm and it will reflect on child's psychic and somatic state (see part "Sleep", p. 130).

ENURESIS NOCTURNA/DIURNA – DIADNOSTIC CRITERIA

1. Repeated voiding of urine into bed or clothes (involuntary or intentional);
2. The behavior is clinically significant as manifested by either a frequency a 2 of week, at least for 3 consecutive months.
3. Chronological age is at least 5 years.
4. The behavior is not due exclusively to the direct physiological effect of a substance (diuretic), or general medical condition as diabetes, spina bifida, a seizer disorder).
5. Complex after the appearance of the 2nd child.

ENURESIS NOCTURNA/DIURNA

1. Family concordance – is greater in MZ than in DZ twins;
2. Gender – males more often;
3. Age – 5 years – 7% of boys; 3% of girls;
10 years – 3% of boys; 1% of girls;
18 years - 1% of boys; rare in girls

Treatment:

1. Pharmacological – never before the age of 5 years; after 5th year – Imipramine, Amitriptyline, Anafranil (EEG is obliged). Before the age of 5th year – Nootropil, when the drugs must be stopped – 3-6 month after the effect is stabilized (calendar). Depression improves too. Combination enuresis nocturna, Mental retardation & Epileptic seizures – nootropil;
2. Diet and regime – without salt, no water after 16 o'clock, the bed must be rise - the pelvis, calendar,
3. Psychotherapy – family, to the child & to the parents.

Selective mutism – it is rare, more common in girls. Diagnostically, child who speaks and comprehends refuses to talk for at least 1 month. It could begins between age 4 and 8, usually resolves in weeks to months. It could be associated with parental overprotection, parental ambivalence, communication disorders, shyness, and oppositional behavior. Treatment can be individual psychotherapy and medicaments.

Case – *Ann is 11 years old girl, with her little dog she took the elevator, that blockade and for 2 hours she was alone in the elevator. She was crying, weeping, but nobody was there. Two hours later when the persons from the other flats returned they announced the services, that eliminated the damage. When they opened the door the girl was very pale, she did not speak. She was consulted in psychiatry. She had psychogenic mutism. We made 1 amp. Diazepam, but she did not speak. After that we took a sterile probe and begin to irritate her throat. In that moment she coughed and began to speak.*

DIAGNOSTIC CRITERIA FOR STUTTERING (DSM-IV)

1. Disturbance in the normal speech
 - Sound and syllable repetition;
 - Sound prolongation;
 - Interjection;
 - Broken words (pauses within a word);
 - Silent blocking |(filled or unfilled pauses in speech);
 - Circumlocutions (word substitution to avoid problematic words)
 - Words produced with an excess or physical tension;
 - The disturbance in fluency interferes with academic or occupational achievements or with social communication;
2. Reasons – Genetic predisposition; frightened by a dog, cock, male or some incidents; Imitation;

STUTTERING - THERAPY

- Remediation – speech therapy (exercise with a special teacher)
- Silence therapy – when the problem is no longer than 10 days;
- Frankel's therapy;
- Hypnotherapy;
- Psychotherapy could be:
 - individually on one person;
 - group therapy –
 - family therapy –

Some other child disorders

- **Attention deficit/hyperactivity disorder (ADHD)** – see the part “Disturbances of attention”, pp 111-115.
- **Somnambulism (Sleep-walking)** – see part “Sleep”, p.128.
- **Encopresis** – prevalence is about 1% of 5 year-old children, and it is more common in boys. Treatment – the child may require individual psychotherapy to address the meaning of the encopresis as well as any embarrassment or ostracism. Behavioral techniques often are helpful. Parental guidance and family therapy is needed.

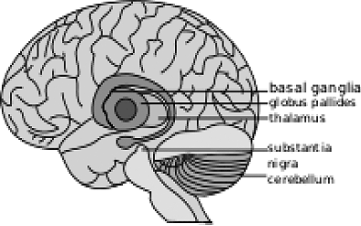
E N K O P R E S I S - Diagnostic criteria

- I. Repeated passage of feces into in an appropriate peaces (clothing or floor or intentional).
- II. At least one such event a month for at least 3 months.
- III. Chronological age is at least 4 years.
- IV. The behavior is not due exclusively to the direct physiological effects of a substance (the use of laxatives, or a general medical condition except through a mechanism involving constipation).
- PS – this disturbance could appear after some psychogenic trauma as: the appearance of the second child, disturbed interrelations between the parents.

Tic Disorders (Gilles de la Tourette’s syndrome)

It is an inherited neurological disorder characterized by repeated involuntary movements and uncontrollable vocal sounds called tics. In a few cases, such tics can include inappropriate words and phrases.

Basal Ganglia and Related Structures of the Brain



The Tourette’s Syndrome. : in

The syndrome occurs worldwide in all races and is usually inherited. It is named after Georges Gilles de LaTourette, who for the 1st time in 1885 described this disorder. It has been suggested that the English author Samuel Johnson have suffered from a form of the disease, based on contemporary description of his facial tics and of the vocalizations interrupting his normal speech. The majority of people with Tourette’s Syndrom required no medication, but medication is available to help when symptoms interfere with functioning.

The Tourette’s Syndrom medications are only able to help reduce specific symptoms. Its rate is about 4-5 per 10000, mean age of onset is 7 years of age. The male to female ratio is 3:1. Neuroleptics and antihypertensive drugs can have long- and short-term side effects, and use of stimulants is controversial.

The British composer James McConnel, who suffered from Tourette's disorder, for the 1st time through the idea that Mozart suffered with Tourette's Syndrome. Ashoori A., Jankovic J. (2007) in their review explored the often asked question: "Did Mozart have Tourette's Syndrome?" His behavior gave the idea for various disorders as: Tourette's syndrome; autistic disorder; Asperger's syndrome; ADHD; obsessive compulsive disorders; paediatric autoimmune neuropsychiatric disorders, some virus infections in early childhood. Whether Mozart's behavior was nothing more than a reflection of his unique personality or a more complex neurological disorder, aggravated later in his life by his father and society, his behavior, has been the subject of many biographies.



A documentary to be screened in October by Britain's **Channel 4** television network, suggests that Wolfgang Amadeus Mozart may have suffered from Tourette's Syndrome. His contemporary stressed on some moments as: coprophilia, pornography and vulgarity words are a special habit to use lewdness words; in his letters he used at least 12.9% vulgar words, his stupid, foolish behavior, self-irony. The scientists established that the use of vulgarity words were found in his mother's and his sister's letters. It could be explained with the fact that his mother was from Saxon. She used the rough Saxon dialect, but in her letters such words were no more than 8%...

Thomas Sydenham remarked that Mozart in his early childhood (1763-1766) had various virus infections as tonsillitis, bronchitis and rheumatoid arthritis and special attention he paid on Sydenham's chorea. This disturbance

DIAGNOSTIC CRITERIA FOR TOURETTE'S DISORDER

1. Both multiple motor and one or more vocal tics have been present at some time during the illness, although not necessarily concurrently (a tic is a sudden, rapid recurrent, nonrhythmic, stereotyped motor movement or vocalization).
2. The tics occur many times a day (usually in bouts) nearly every day or intermittently throughout a period of more than 1 year, and during this period there was never a tic-free period of more than 3 consecutive months.
3. The disturbance causes marked distress or significant impairment in social occupational, or other important areas of functioning.
4. The onset is before age 18 years.
5. The disturbance is not due to the direct physiological effects of a substance (e.g. stimulants) or a general medical condition (e.g. Huntington's disease or post-viral encephalitis).

• Tourette's Syndrome?" His behavior gave the idea for various disorders as: Tourette's syndrome; autistic disorder (**Autism** – see part "Autism", pp 268-278).

• **Restless legs syndrome** – uncomfortable sensations in legs at rest; not limited to sleep but can interfere with falling asleep; relieved by movement; patients may have associated sleep-related myoclonus; they could be improved by Benzodiazepines, e.g. clonazepam are the treatment of choice.

• **Klein-Levin syndrome** – "The syndrome of Sleeping Beauty" – periodic episodes of hypersomnolence, usually accepted young males, who sleep excessively for several weeks. They awakens only to eat, amnesia follows attacks, may spontaneously resolve after several years. Patients are normal between episodes.

- **Nightmare disorders.**
- **Sleeptalking** – sometimes it accompanies night terrors and sleepwalking, requires no treatment.
- **Sleep terror disorder.**

<i>Nightmare disorder</i>	<i>Sleep terror disorder</i>
1. Nightmare almost always occur during REM sleep; 2. Can occur at any time of night; 3. Good recall (quite detailed); 4. Long, frightening dream in which one awakens frightened; 5. Less anxiety, vocalization, motility, and autonomic discharge than in sleep terror; 6. No specific treatment may be benzodiazepine will be of help.	Especially common in children; Sudden awaking with intense anxiety; Autonomic overstimulation; Movement; Crying out; Patients does not remember the event; Occurs during the deep non-REM sleep; Often occurs with in the 1-2 hours of sleep; Treatment rarely is needed in childhood.

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XX. CHILD COMPLEXES

The roots of the word complex come from Latin “complexio” – include Complexes are super-valuable ideas that are with very strong affective contents. In psychopathology complexes could be discussed as a group of ideas that could be incorporated around any kind of experiences that is covered very strongly emotional.

Freud and Jung discussed complexes as a result of psychological trauma. They are taboo and very strong affective rumination, that could be pushed out in our unconscious where escalated complexes, that appeared again as symbols, and some of them (as castration complex) later could be expressed as various neurotic symptoms. Complexes are believed by Jung and Freud to influence the individual's attitude and behavior.

Complexes exist since the humanity existed

Do you think that there are persons without any complexes?

If s. b. tells you that he has no complexes be sure that deeply in his heart are hidden very cruel complexes that often disturbed even his dreams, cruel complexes that he does not want s. b. to learn for them.

A **complex** is a core pattern of emotions, memories, perceptions, and wishes in the personal unconscious organized around a common theme, such as power or status. Primarily a psychoanalytic term, it is found extensively in the works of Carl Jung and Sigmund Freud.



The term “complexes” was accepted by Carl Gustav Jung.

“A complex is a collection of thoughts, feelings, attitudes and memories that focus on a single concept. The more elements attached to the complex, the greater its influence on the individual.”

Complexes are aggregation of various feelings, ideas, or that could be particularly or totally consciousness or unconsciousness loaded with an affective strength, that could organize the individuality of each person, and puts imprint on his affects and controlled his behavior.

- Complexes were so central to Jung's ideas that he originally called his body of theories “Complex psychology”. He described “complex” as a ‘node’ in the unconscious; it may be imagined as a knot of unconscious feelings and beliefs, detectable indirectly, through behavior that is puzzling or hard to account for.

Jung believed the personal unconscious was dominated by complexes. The term “complex”, “emotionally charged complexes” or “feeling-toned complex of ideas” was adopted by Carl Jung. Complexes were so central to Jung's ideas that he originally called his body of theories “Complex psychology”. He described a “complex” as a ‘node’ in the unconscious; it may be imagined as a knot of unconscious feelings and beliefs, detectable indirectly, through behavior that is puzzling or hard to account for. In Jung's theory, complexes may be conscious, partly conscious or unconscious.

Complex existence is widely agreed upon in the area of depth psychology. It assumes the most important factors that were influencing deep in the unconscious your personality. Complexes can be positive or negative, resulting in good or bad consequences (Mattoon, 1999). There are many kinds of complexes, but at the core of any complex is an universal pattern of an experience, or archetype. Other major complexes include the mother, father, hero, and more recently, the brother and sister. Jung believed it was perfectly normal to have complexes because everyone has emotional experiences that affect the psyche. Although they are normal, negative complexes can cause us pain and suffering (Mattoon, 1999).

An example of a complex would be as follows: if you had a leg amputated when you were a child, this would influence your life in profound ways, even if you were wonderfully successful in overcoming the handicap. You might have many thoughts, emotions, memories, feelings of inferiority, triumphs, bitterness and determinations centering on that one aspect of your life. If these thoughts troubled you, Jung would say you had a complex about the leg.

One of the key to find out the differences between Jungian and Freudian theory is that Jung's thought posits several different kinds of complexes. Freud focused on the Oedipus complex which reflected developmental challenges that face every young boy. He did not take other complexes into account except for the Electra complex, which he briefly spoke of.

After years of working together, Jung broke from Freud, due to disagreements in their ideas, and they each developed their own theories. Jung wanted to distinguish between his and Freud's findings, so he named his theory "analytical psychology".



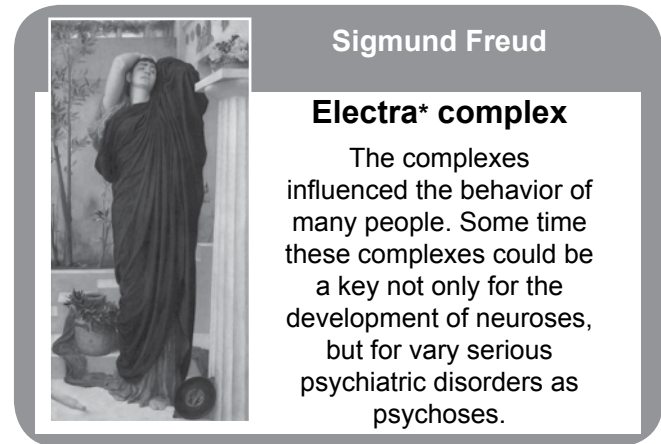
The term "**Oedipus complex**"* denotes the emotions and ideas that the mind keeps in the unconscious, via dynamic repression, that concentrates upon a child's desire to have sexual relations with the parent of the opposite sex (i.e. males attracted to their mothers, and females attracted to their fathers). Freud, coined the term "Oedipus complex" believed that the Oedipus complex is a desire for the parent in both males and females; Freud deprecated the term "Electra complex", which was introduced by Carl Gustav Jung in regard to the Oedipus complex manifested in young girls. The Oedipus complex occurs in the third – phallic stage (ages 3-6) – of the five psychosexual development stages: the oral, the anal, the phallic, the latent, and the genital – in which the source of libidinal pleasure is in a different erogenous zone of the infant's body.

Oedipus refers to a 5th-century BC Greek mythological character Oedipus, who unwittingly kills his father, Laius, and marries his mother, Jocasta. A play based on the myth, *Oedipus Rex*, was written by Sophocles, ca. 429 BC. In classical Freudian psychoanalytic theory, a child's identification with the same-sex parent is the successful resolution of the Oedipus complex and of the Electra complex.

***Oedipus' legend** (Ancient Greek: Οἰδῖνου Oidipous meaning "swollen foot") was a mythical Greek king of Thebes, the son and killer of Laius, son and consort of Jocasta, and father and sibling of Polynices, Eteocles, Antigone, and Ismene. A tragic hero in Greek mythology, Oedipus accidentally fulfilled the prophecy, despite his efforts not to, that he would kill his father and marry his mother, and thereby bring disaster on his city and his family. When the truth is discovered, his wife hanged herself, and Oedipus gouged out his own eyes. They had four children together. The story of Oedipus is the subject of Sophocles's tragedy *Oedipus the King*, which was followed by *Oedipus at Colonus* and then *Antigone*. Oedipus represents two enduring themes of Greek myth and drama: the flawed nature of humanity and an individual's role in the course of destiny in a harsh universe. In the most well-known version of the myth of what happened after Oedipus was born to King Laius and Queen Jocasta, Laius wished to thwart a prophecy, mentioned above earlier in this article, which said that his child would grow up to murder his father and marry his mother. Thus, he fastened the infant's feet together with a large pin and left him to die on a mountainside. The baby was found on Kithairon by shepherds and raised by King Polybus and Queen Merope in the city of Corinth. Oedipus learned from the oracle at Delphi of the prophecy, but believing he was fated to murder Polybus and marry Merope, he left Corinth. Heading to Thebes, Oedipus met an older man in a chariot coming the other way on a narrow road. The two quarreled over who should give way, which resulted in Oedipus killing the stranger and continuing on to Thebes. He found that the king of the city (Laius) had been recently killed and that the city was at the mercy of the Sphinx. Oedipus answered the monster's riddle correctly, defeating it and winning the throne of the dead king and the hand in marriage of the king's widow, his mother, Jocasta. They had two sons and two daughters. In his search to determine who killed Laius (and thus end a plague on Thebes), Oedipus discovered it was he who had killed the late king (his father). Jocasta, upon realizing that she had married her own son and Laius's murderer, hanged herself. Oedipus then seized two pins from her dress and blinded himself with them. Oedipus was driven into exile, accompanied by Antigone and Ismene. After years of wandering, he arrived in Athens, where he found refuge in a grove of trees called Colonus. By this time, warring factions in Thebes wished him to return to that city, believing that his body would bring it luck. Oedipus died at Colonus. The presence of his grave there brings good fortune to Athens.

The legend of Oedipus has been retold in many versions, and was used by Sigmund Freud to name and give mythic precedent to the Oedipus complex.

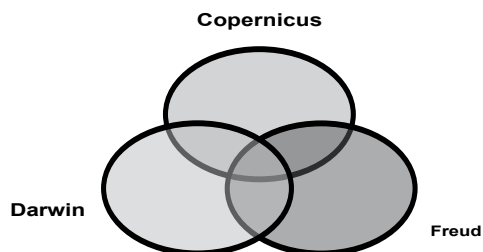
This is a key psychological experience that is necessary for the development of a mature sexual role and identity. Freud further proposed that boys and girls experience the complexes differently: boys in a form of castration anxiety, girls in a form of penis envy; and that unsuccessful resolution of the complexes might lead to neurosis, pedophilia, and homosexuality. Men and women who are fixated in the Oedipal/Electra stages of their psychosexual development might be considered “mother-fixated” and “father-fixated”. In adult life this can lead to a choice of a sexual partner who could look like to one’s parent.



With the new advantages of techniques and various branches of the sciences were increased the complexes that could be caused:

- **Genetic studies** – almost all races came from the negro’ races, or it was the 1st race;
- **Cosmos’ achievements** – The Son’ system is not the only system in Cosmos;
- **Extra-terrestrial** – the Earth’ humanity are not the only rational being in the Cosmos.

Freud spoke about some problems in psychoanalyses. He spoke for 3 revolutions that caused serious complexes of humanity.



1. The 1st revolution was that of **Nicolaus Copernicus** (mathematician & astronomer) who formulated a model of the universe that placed the Sun rather than the Earth at its center.

2. The 2nd revolution is from **Charles Darwin**, an English naturalist and geologist, best known for his contributions to evolutionary theory.

3. The 3rd revolution is caused by **Freud**. He spoke that with the theory of unconsciousness he was guilty for the 3rd revolution of the humanity.

Chronology of Freud’s theoretic evolution of the Oedipus complex, passed through six stages:

1. Stage 1. (1897-1909), After his father’s death in 1896, and having seen the play Oedipus Rex, by Sophocles; Freud begins using the term “Oedipus”.
2. Stage 2. 1909-1914. Proposes that Oedipal desire is the “nuclear complex” of all neuroses.
3. Stage 3. 1914-1918. Considers paternal and maternal incest.
4. Stage 4. 1919-1926. Complete Oedipus complex; identification and bisexuality are conceptually evident in later works.
5. Stage 5. 1926-1931. Applies the Oedipal theory to religion and custom.
6. Stage 6. 1931-1938. Investigates the “feminine Oedipus attitude” and “negative Oedipus complex”; later the “Electra complex”.

Jacques Lacan – he argued against removing the Oedipus complex from the center of psychosexual developmental experience.

***Electra’s legend** – in Greek mythology, **Electra** (Greek: Ἠλέκτρα, Ēlektra) was the daughter of King Agamemnon and Queen Clytemnestra. She and her brother Orestes plotted revenge against their mother Clytemnestra and their stepfather (Aegisthus) for the murder of their father Agamemnon, when he returned from the Trojan War. Electra convinced her brother Orestes to revenge for the father’s death and killed their mother and her lover.

Adler was in collaboration with S. Freud. He is the author of **inferiority complex**. According to him in inferiority complex, every child experiences the feelings of inferiority as the result of being surrounded by stronger and more capable adults. As the child grows he becomes obsessed by his original feelings of inferiority he experienced earlier and so he strives for power and recognition. If the child failed to meet certain life challenges during his act of compensation then he will develop an inferiority complex. According to Adler every child feels inferior but not each of them develops an inferiority complex which only affects those who failed to compensate correctly.

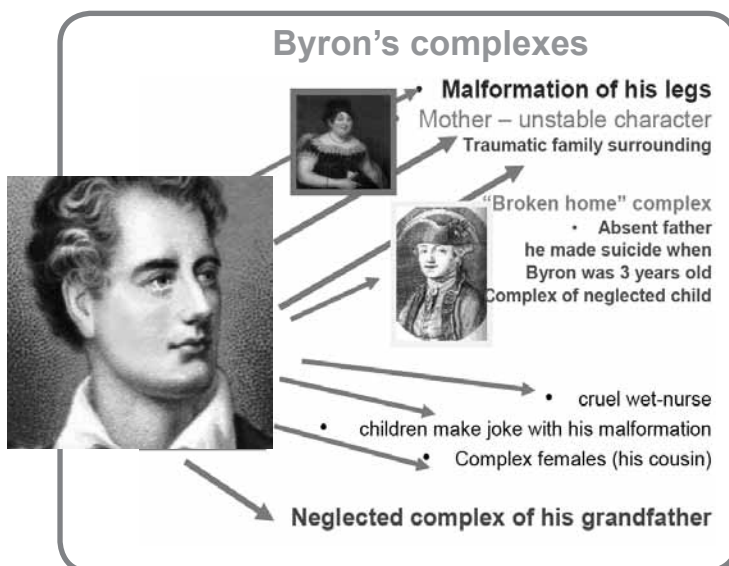
If s. b. is with inferior as a child because of his perceived weakness faces a challenge that he can not meet he develops what's called a secondary inferiority. The secondary inferiority feelings are feelings of inferiority that are based on the primary inferiority feelings the child experienced when it was young. Adler introduced the term "organ inferiority" which refers to the inferiority feelings the person who has certain physical disability develops if people made him believe that he is not as good as them. Most people try to compensate in the wrong direction and that's why their inferiority complex keeps hunting them as long as they live. Find the real cause of your inferiority, compensate correctly and your inferiority feelings will go away.



Adler (1870-1930)

Persons with an inferiority complex have an extremely deep feeling of inferiority that can lead to pessimism and inability to overcome difficulties. The inferiority complex is an advanced state of discouragement, often resulting in a retreat from difficulties. Adler's theory of psychological compensation states that "the stronger than feeling of inferiority, the higher the goal for personal power". According to him, as a result of initial helplessness, an infant inferior and attempts to overcome feelings of incompleteness by striving for a higher level of development. Feeling inferior and compensation for that feeling, becomes the dynamic principle of motivation, moving an individual from one level of development to the next.

Adler paid a special attention on the various Byron's complexes. He was born with pes equino varus of the 2 legs. Children with such a malformation could not walk like other children – their step is like of the goose' step. He was a subject of ironic by the children, and he suffered very much. From the branches of mother's and father's family tree were hanged murderers, prisoners, suicides, killers, criminals and s.o. Byron was full of various complexes.



He became very famous with his book "Don Juan". It was published with the help of his great love. She was married. He married her cousin Annabella to avoid the scandal in London.

The only child in the family:

The only and the 1st child in the family have some common features. They tend to be the “go-to” child-responsible, reliable, independent but tyrant to their younger siblings. Middle children are more persistent, careful, attention-getters, and with many friends. The youngest child is always labeled the baby. They are always carefree, but some time can be easily to manipulate them. According some Chine’s papers “Those who grew up as only children as a consequence of the one-child are found to be less trusting, less trust-worthy, less likely to take risks, and less competitive than if they had had siblings. They are also less optimistic, less conscientious, and more prone to neuroticism.

The **only child** is a person with no siblings, either biological or adopted. In a family with multiple offspring, first-borns may be briefly considered only children and have a similar early family environment, but the term *only child* is generally applied only to those individuals who never have siblings. An only child, however, may have half-siblings or stepsiblings who come along considerably late (after they reach their teens) and still be considered an only child. Children with much older or younger siblings (generally ten or more years) may also have a similar family environment to only children.

Adler theorized individuals were driven to have a control over their life and their behaviors in order to fulfill their potential. As everybody is unique, he suggested the theory that birth order affected personality signs. He discussed the problem with 2, 3, 4 and more children in the family. Each of them could develop any kind of complexes.

Dethronement – since the appearance of the 2nd child, the 1st child is the prince/princess in the family. When the 2nd child appeared the whole attention is directed for the care of the newborn infant. **The 1st child** felt as a neglected child. Element of jealousy appeared. Some parents noticed that their 1st child received enuresis nocturna or begins to stutter. **The 2nd child** – did everything that his bigger brother/sister did. **“I do the same”** (“Ich auch”)

From one side the appearance of the 2nd child could cause complexes to the 1st child, as the parents pay more attention to the newborn infant. From the other side the 1st child could cause complexes to the 2nd child, as the parents, the relatives, the teachers make a comparison between the 2 children that could be the reason for future complexes. Parents’ behavior is very important too. When the 2nd child appears the father must pay more attention to the 1st child in order to avoid some complexes..

Case – *Iliana made a suicide with various drugs. She was a student in medicine and she had poor mark in Anatomy. She was ashamed – after her reanimation she begin to weep. “Why am I alive, what will my mother said?” During the conversation she explained me: “I have a sister. She is a student in medicine too. In our school the teachers always said to my parents: “Iliana is a very good pupil, but she is not so witty as her sister is.” When I receive a poor mark my parents said to me: “You must be like your sister!” These phrases were repeated to me every day. I have complexes that I can not be like my sister. When I ruined the exam in anatomy, I did not know what to do. I could not bear my parent’s rebuke any more. For me is better to die. I do not want to tell them about this exam.” She was hospitalized and after a month she had to continue her education.*

What is the fate of the 1st sister? *She is very ambitious, she repeated the 2nd year of medical university, she married, and when her child was born she divorced. She began to work as a general practitioner in a village, she lived alone with her child, but she had no complexes.*

What is the fate of the 2nd sister? *She finished university and after that became a good cardiologist. She married her colleague and they loved very much each other. They had 2 children. Her husband is a very good cardio-surgery. They had a very nice flat and a big villa in the near village. She had everything that is necessary for s.o to be happy, but she is not happy, her complexes of the 2nd child controlled her behavior. She began to use alcohol and many times she was hospitalized.*


Napoleon complex

Adler for complex inferiority in persons with short height

“Ted as a little boy was with short height and weak muscles of his hands. He was not included in the Little League, as he could not throw the baseball too far. So he felt himself very weak and powerless. When he became elderly his great wish was to be a chief and to have a power. According to Adler’s theory this wish could be as a compensatory mechanism of the little and weak child that could not be a member of the Little School’ League, because of his short height.”

Napoleon complex: people with this complex compensate in various ways. For example, person with Napoleon Complex may set pictures in their room to lower levels and make other such accommodations that enable them to feel taller in their surroundings. Compensatory behavior may also include being overly aggressive or tendency to want to over-achieve, all of which serve to give the person a sense of greater self-satisfying.

NAPOLEON COMPLEX




Napoleon complex (or Napoleon syndrome) is a colloquial term used to describe a type of inferiority complex suffered by people who are short. Alfred Adler used Napoleon Bonaparte as an example of someone driven to extremes by a psychological need to compensate for what he perceived as a handicap: his small stature. In actuality, though, Napoleon was not especially short, being slightly over 168 cm (5 feet, 6 inches).

Complex of Henri de Toulouse Lautrec



Case – *Stoyan is a short boy, but he has a charming girl-friend, that is taller than he is, and he is proud of this. One day together with her girl friend they went to a theatre. She was putted on modern up-to-date with very high-needled shoes. She putted up her hair in a bun. When they moved through the street every body looked after her, as she was very charming. Near the theater she began to walk on the pavement and she was near 15-20 centimeters taller than he was. Suddenly he was striking her with the words: “How many times I must remind You not to move on the pavement and not to be with high-needled shoes.” She was astonished from this incident, but she even did not suspect for his Napoleon complex.*

Demosthenes’s complex (384 BC 322 BC)



Demosthenes was a son of a wealthy sword-maker. He was orphaned at the age of 7. His legal guardians trust him and took his inheritance. He wanted to learn the truth and to punish him, when he came of age. As a boy he had speech stuttering and he did many exercises to overcome it. By the seaside he talked around mouthfuls of rocks & in order to improve his speech and his diction. Demosthenes became the best logographer and political orator, making his living through his ability to write & make speeches. He was the greatest orator in Ancient Greece.

The struggle with this complexes throughout the life, were beginning from infancy, as children comparing with the other children and adults became inadequate. He described the results of these feelings as a **“minus situation”**. But he stressed on the fact that just these inferiority feelings could become the motivation for struggle and compensation and he called it **“plus situations”** (You could learn more from Lecture 27 – “Complexes”).

XXI. SUBSTANCE USED ABUSE - PSYCHOLOGICAL ASPECTS

Adolescents are the most vulnerable age group. Substance abuse is one of the greatest problem of society. Substance-abusing patients are difficult and serious social problems. It is supposed that now about 38 million people in the world are drug-addicts and 650.000 of them live in West Europe. Heroin and cocaine are some of the most spread narcotic drugs.

Cocaine is an alkaloid obtained from coca leaves (Bolivia, Peru) and nowadays it is mainly a drug for abuse and dependence. Cocaine intoxication is manifested with psychomotor excitement, feelings of grandiosity, dilated pupils, tachycardia, anorexia, nausea, insomnia, hallucinations, illusions.

We must not neglect some other drugs and components, as sedatives, hypnotics, anxiolytics, stimulants, hallucinogens, inhalants, caffeine, nicotine.

Physicians must distinguish between dependence and addiction.

Dependence	<p>1. A psychological or physical need to continue taking the substance.</p> <p>2. Dependence of the drug may be physical, psychological or both.</p>
Addiction	<p><i>It is a nonscientific term that implies psychological dependence, drug seeking, behaviour, physical dependence and tolerance. The addicted person cannot stop using the drug without experiencing withdrawal symptoms, painful, physical reactions as headache, nausea, convulsions.</i></p>

These patients are a serious therapeutic problem. Psychotherapy is necessary too. One of the most spread forms are the so called Community Society. It is a psychiatric or mental hospital that emphasises the importance of socioenvironmental and interpersonal influences in the therapy, management, resocialization and rehabilitation of the long-term patients. Self-control is very important too.

ALCOHOL ABUSE

Definitions of alcoholism vary. Most suggest that an alcoholic is a person who cannot control drinking. Alcohol abuse and Alcoholism affect both sexes (males and females), all ages, and all socioeconomic groups. So it is a social problem. It is known that about 90 % of the population over 18 years test alcohol, but only 5 % of them become addicted to alcohol.

Alcohol-induced psychotic disorders are: delirium tremens, alcohol hallucinosis, persisting amnesic disorders, encephalopathy, Korsakoffs syndrome, persisting dementia. Alcohol is the most commonly used psycho-active substance in both the mentally healthy and mentally ill. About one third of Americans consume alcohol.

During the last decades the rate for women has increased.

Prophylactic and psychotherapy are very important and are used during all stages of the therapeutic program.

- special discussions with pupils, students and young persons.
- the television, radio, newspapers.
- the family and the society of friends - family psychotherapy.
- the community, an alcohol society, a special group, where the ill could share their problems of alcohol abuse with the others and the leader of the group could give him advice and try to help him.

XXII. SEXUAL DYSFUNCTION

Sex is the division of members of a species into two subclasses, male and female. Such a division depends upon several biological factors – chromosome pattern, gonadal sex (the presence of testes and ovaries), hormonal sex, internal or external genital morphology.

Sexual dysfunction can be symptomatic of biological problems (biogenic), intrapsychic or interpersonal problems (psychogenic) or a combination of these factors. Sexual function could be adversely affected by stress, emotional disorders and s. o.

Freud

Freud 's concept of sexuality is that psychic energy connected with sensual and somatic satisfactions is said to be sexual energy. It is explained also in the multiple forms of sublimation. There are two different kinds of instincts – the sexual instincts in the widest sense of the word and the aggressive instincts (their aim is destructive).

Sexology

The study of sexual and sex-related behaviours and their evolutionary, physiologic, developmental, and sociological foundations.

Sexopathy

The study of sexual abnormality; sexual perversion. It includes both anomalies of sexual aim and anomalies of sexual objects.

Some sexual disorders

Sexual desire disorders;

- hypoactive sexual desire is characterised by deficiency or the absence of sexual fantasies, and desire for sexual activity.
- sexual aversion disorder is characterised by an aversion to and avoidance of genital sexual contacts with a sexual partner.

Gender Identity - transsexualism, gender identity disorder in childhood,

Paraphilias

- **fetishism**,
- **tranvestistic fetishism**,
- **pedophilia**,
- **exhibitionism**,
- **voyeurism**,
- **sexual masochism**
- **sadism** - **Kraft-Ebing** defined sadism as sexual emotions associated with the wish to inflict pain and use violence. The name sadism comes after **Markquis de Sade** (1740-1814), a French writer, who described persons whose sexual pleasure depended upon inflicting cruelty upon others. Sadism could be: oral, id sadism, superego sadism, manual, phallic, sadomasochism.
- **masochism** – comes from **Leopold von Sacher Masoch** (1836-1895), an Austrian novelist, whose characters indulge in all kinds of sex perversions, deriving sexual pleasure from being cruelly treated). **Kraft-Ebing** defined masochism as “a perversion of the psychical vita sexualis feeling and thought, it is controlled by the idea of being completely and unconditionally subject to the will of a person of the opposite sex, of being treated by this person.

Sexual pain disorders - dyspareunia, vaginism.

Ego-dystonic homosexuality

Hermaphroditism.

Therapies - sex-change surgery, where a man takes on the physical characteristics of a woman, his genitalia are almost entirely removed, with some of the tissue retained to form an artificial vagina. An year before the operation he appropriates female hormones to develop breasts, soften the skin and some other procedure in order to change the body.

XXIII. PSYCHOTHERAPY

Can everybody be a good psychiatrist, psychologist or psychotherapeutic?

Why some fortune-tellers, mitt-readers and popular-healers are very good psychotherapeutics? What kind of features must the psychology/psychiatrist have?

Case – Maria is 28 years old female. She is married with 2 children. In July she was pregnant, and made abortion. In September her 1st child just on the 1st school day received appendicitis acute and he died. After this incident Maria developed heavy depression. The words “I killed a child and God took my child” thrust in her mind. About 2 years she was hospitalized in various psychiatric hospitals, she used various antidepressants and psychotherapeutic methods, but nobody could help her. The thoughts for guilt did not leave her mind. At last her husband visited a popular healer in Varna. When Maria entered her room the old woman said to her: “You have a great pain in your heart”. Maria answered: “Yes 2 years ago my 1st child died”. The popular healer answered: “Your child had been with valvular disease of the heart. God loved You very much and decided that it is better your child to die at the age of 7, when you will have the ability to have another child, than to die when he is 18-19 years old and you can not have another child.” Maria heaved a sigh of relax: “I am not guilty for my son’s death”. She leaved the room and decided to have another child.

The popular-healer with one sentence could remove her guilt. Her death son was 8 years. It was not possible his paediatrist not to find out such a serious malformation. But the mother did not think for that. She believed her and she improved without medicaments.

A Chinese Emperor ordered in a Porcelain factory to produce 3 absolutely alike porcelain dolls. All of them had 3 holes – in the 2 ears and in the mouth. He said that his daughter will marry for the boy that could understand the difference between the 3 dolls. Nobody could find the differences.



At last appeared an young boy. He wanted to give him 3 straws. He putted the straw in the ear of the 1st doll and it goes out from the other ear. Than he pushed the straw into the ear of the 2nd doll and it goes out from the mouth. At last he pushed the straw into the 3rd doll and the straw fall deeply in the doll.

So the psychologists and the psychotherapeutics must be very confidential with their clients.

Case 2: Mina is a child psychologist. She was with many ambitions. She was for 3 months in Ireland to a specialization in child oncology. She was astonished that these children did not suffer of their fate. It was because of their religion. They said to her: “God loves us and wants to be his angels in the Paradise. When she returned in the clinic she began to speak with the Bulgarian children that God loves them and he needs from good children to be angels in the Paradise. She did not have in mind that most of the Bulgarian children were not religious and they supported her. “I don’t want to be an angel. I want to be with my mother, not to go to the Paradise”. No one of the children wanted to speak with her and when she appeared in the department all of them hide in their rooms crying: “The devil is coming, run away”.

PLACEBO

The placebo effect can be produced by inert tablets, by sham surgery and by false information, such as when electrical stimulation is turned “off” in those with Parkinson’s disease implanted brain electrodes.

A placebo (Latin *placēbō*, “I shall please” from *placeō*, “I please”) is a simulated or otherwise medically ineffectual treatment for a disease or other medical condition intended to deceive the recipient. Sometimes patients given a placebo treatment will have a perceived or actual improvement in a medical condition, a phenomenon commonly called the placebo effect.

PLACEBO IN MEDICAL RESEARCH

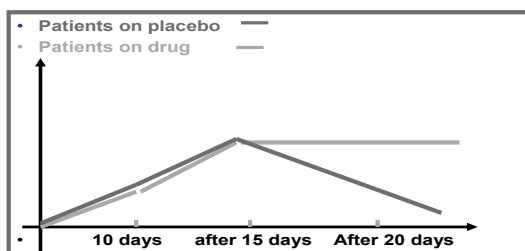
- In medical research, placebos are given as control treatments and depend on the use of measured deception. Common placebos include inert tablets, sham surgery and other procedures based on false information. However, placebos can also have a surprisingly positive effect on a patient who knows that the given treatment is without any active drug, as compared with a control group who knowingly did not get a placebo.

Bleuler: “Placebo effect is when to the patient is given a tablet with an indifferent substance”.

Prof. Strajenko: “The doses of Strichnin and Brom in my patients are 10 times lower than the doses of my assistants. It is because my patients believe that I could help them more in comparison with my assistants”.

In many cases of depression, antidepressant drugs provide little or no benefit over the effect of a placebo, according to a study published in the Journal of the American Medical Association. In a meta-analysis of six prior studies on both the older tricyclic and the newer selective serotonin reuptake inhibitor (SSRI) antidepressants, the researchers found that the less severe the depression, the less effective the drug. The sample included 434 patients who were taking antidepressants and 284 who were getting a placebo. (Natural News).

COMPARISON BETWEEN PLACEBO & EXPERIMENT DRUG



ANTIDEPRESSANT DRUG

“The magnitude of benefit of antidepressant medication compared with placebo increases with severity of depression symptoms and may be minimal or nonexistent, on average, in patients with mild or moderate symptoms.”

- Dr. Gary Kennedy of the Albert Einstein College of Medicine questioned this finding. The study did suggest that antidepressants might be more effective than a placebo in some cases of severe depression.

It was established that the earliest effect of the antidepressants come after the 15th day. It explained the fact why during the first two weeks the depressive symptoms reduced and the patients in both groups (on placebo, and on antidepressants) feel better. After the 15th day the patients on antidepressant drugs continue to improve, whereas the psychiatric symptoms in the groups on placebo go deeper (see the upper figure).

How can one explain the good effect of the placebo during the first two weeks?

It depends on many factors. When the experiments begin the instructors mentioned about the good effect of the new antidepressant. It is in a very good packing, insight is given a very good characteristic, even the percentage of the persons that improved. The patient's expectations are very high. They are mobilized and are sure that at last the best drug for them was found. This is the reason why during the first 15th days the results of the patient on placebo and on the real drug are almost the same. But what will happen after that. Almost the effect of all antidepressants came after the 2nd week. The group that is on antidepressants continued to feel better, whereas the group that is on placebo did not believe to this drugs, and feel more worse and the depression is severe.

In one common placebo procedure, however, a patient is given an inert pill, told that it may improve his/her condition, but not told that it is in fact inert.

- Such an intervention may cause the patient to believe the treatment will change his/her condition; and this belief may produce a subjective perception of a therapeutic effect, causing the patient to feel their condition has improved – or an actual improvement in their condition. This phenomenon is known as the placebo effect.
- The placebo effect points to the importance of perception and the brain's role in physical health. However, the use of placebos as treatment in clinical medicine (as opposed to laboratory research) is ethically problematic as it introduces deception and dishonesty into the doctor-patient relationship.

"The finding that more severe depression is more likely to respond to antidepressant medication seems sound," he said. "But only six studies were used to generate the conclusion, and three of those studies used an antidepressant that few practicing physicians would prescribe nowadays."

Dr. Richard Besser, chief medical editor for "Good Morning America," noted that patients in the study improved noticeably with both placebo and antidepressant treatment.

We must stress on the fact that if the depression is not severe it is possible the patient to recover without any antidepressant. The season of the year is important too. At the end of the winter, when the spring comes the effect could be better, without any antidepressant.

Henry Beecher's publications

The Powerful Placebo in 1955, the phenomenon has been considered to have clinically important effects. This view was notably challenged when, in 2001, a systematic review of clinical trials concluded that there was no evidence of clinically important effects, except perhaps in the treatment of pain and continuous subjective outcomes. The article received a flurry of criticism, but the authors later published a Cochrane review with similar conclusions (updated as of 2010). Most studies have attributed the difference from baseline till the end of the trial to a placebo effect, but the reviewers examined studies which had both placebo and untreated groups in order to distinguish the placebo effect from the natural progression of the disease. However these conclusions have been criticized because of the great variety of diseases – more than 40 – in this metastudy. The effect of placebo is very different in different diseases. By pooling quite different diseases the results can be leveled out.

Placebo' tablets are very important in pharmacology industry. It is one of the way to make a comparison of the effect of new-created drugs with the group that is on placebo.

Can we use placebo? Is it moral or not moral?

I shall give example with 2 cases. So one can understand when the use of placebo is necessary and when we must give the exact antidepressant drug.

Case 1: A 25 old Gypsy female: *She had 5 children, and one of them was a baby. Her husband was an alcoholic and almost every day he is drunken and aggressive. One day he cruelly stroked her. She fell on the floor and could not be awoken. She had to be consulted in the polyclinic. All clinical, and biochemical examinations of the blood were normal. The diagnoses as brain stroke, insulin/diabetic coma were excluded. So they had to make a consult with psychiatrist. He concluded that she had psychogenic stupor. The psychiatrist and the duty nurses had a conversation in front of the patient and her relatives that were very frightened. The psychiatrist said: "Sister, do you have the special Swish ampulla?" The answer was: "Doctor, these ampullas disappeared from an year." The doctor continued: "Please sister if you do not find this ampulla, after 2 hours the patient will die". All Gypsies that were accompanied her cried: "But doctor, she has 5 children, and who will care for them?" The conversation between the doctor and the nurse continued. She imitated that she asked for this ampulla from various departments. In that time she had to serve the patients outside in the other room. After 2 hours she came and said: "Doctor, I found only one ampulla from the Psychiatric Clinic. The doctor took the ampulla (it was "Aqua redestilate"). She began to make subcutaneous injection round her neck. They were very painful. The patient began to groan. After the 6th injection she sit on the couch and all Gypsies cried loudly: "She is alive". After that I had a serious conversation with her husband and her mother in law. "This was the last ampulla, but if she received the same state again nobody could help her, even God. You must be very careful with her and her husband must not drink alcohol anymore".*

**THE UNITED KINGDOM
PARLIAMETARY
COMMITTEE ON SCIENCE
AND TECHNOLOGY**

"Prescribing placebos....relies on some degrees of patients deception" and prescribing pure placebos is bad medicine. Their effect is unreliable and unpredictable and can not form the sole basis of any treatment on the NHS".

"What you can't tell from this study is what else is going on," he said. "Were these individuals getting what is most effective, which is talk therapy?"

According to Besser, simply participating in the study meant that patients were indeed getting this form of treatment.

"The most effective thing for mild to moderate depression is being in a therapeutic relationship where they can talk through their problems with someone who is really skilled," Besser said. "What they found ... is that it didn't really matter the drug. You were getting better if you had [talk therapy] and that should give people hope."

Case 2: 55 old female: *She came to me with the clinical picture of involution depression. During the conversation she said to me: "Doctor, 15 years ago you putted a magic injection to my neighbour and she is healthy now. I want to put me the same injection". I was sure that she needed a serious antidepressant therapy. I gave her antidepressants but tolled her that I shall give her tablets from the same injection and she will improve.. Each week she came to me and wanted to make her this injection. I explained her that I wrote a letter to the Health Ministry and they promised me to send it. About a month a lied her that the magic ampulla will come, but said to her that the effect will be better if she used the tablets.. After a month I made her 1 injection with Aqua redestilate and she said to me: "Doctor, at last I am healthy. This injection is magic." She did not appear any more.*

These cases stressed on the fact that some time placebo is necessary to be used, but the doctor must be very careful. The 55 old female did not need placebo, as she had a serious involution depression, and I had to manipulate her that the tablets are with the same consistent as the s. c. from her “magic injection”. But when I was sure that depression was at the end and she improved I decided to fulfil her wish and so the antidepressant effect was stabilised. She was very satisfied and I was sure of her improvement.

So we must agree with Cochrane.

ARCHIE COCHRANE - 1972

“It is very important to distinguish the very respectable conscious use of placebos. The effect of placebos has been shown by randomized controlled trials to be very large. Their use in the correct place is to be encourage”

Placebo is widely used in medical research & medicine. It is a part of the treatment of the patient, it is a part of the therapeutic program.

Effects of expectation on placebo-induced dopamine release in Parkinson disease

Lidstone SC, Schulzer M, Dinelle K, Mak E, Sossi V, Ruth TJ, de la Fuente-Fernández R, Phillips AG, Stoessl AJ. (From Pacific Parkinson’s Research Centre, University of British Columbia, Vancouver, British Columbia, Canada).

Expectations play a central role in the mechanism of the placebo effect. In Parkinson disease (PD), the placebo effect is associated with release of endogenous dopamine in both nigrostriatal and mesoaccumbens projections, yet the factors that control this dopamine release are undetermined.

How can we explain Placebo-effect in some cases? Many scientists put this question – why persons on hypnotherapy improved, and how could be explained the effect of acupuncture?

There were done many biochemical and experimental studies in order to understand the mechanism of these methods.

HYPNOSIS

EEG in 23 aged girl with Epileptic seizures
- Regression – her EEG is normal when she is in regression at the age of 16 years, before her illness.

ACUPUNCTURE

American scientists did examinations of patients that were treated by electroacupuncture and acupuncture – the clinical improvement of the patients were correlated with changes in the brain – proved by scanner on PET (positive tomography).

The American’s scientists established some EEG changes and changes in some receptors in the brain during hypnosis that could explain the positive effect of this therapy. The same structural changes were found out in patients that were on acupuncture. These studies supported the idea that the 2 methods have a curative effect on the patients.

I would like to pay a special attention to a painter with Parkinson's disease. He said to his doctors that Madopar did not help him any more and they had to prescribe him another drug. It was a serious problem for the doctors, as he had used previously all the drugs for his state. They decided to give him placebo and explained him that it was a very special drug with a very good effect. It was in a very good packing. He began to use it. A month later he said to his doctors that the effect of this new drag is fantastic and he could paint again without any problems. The doctors were astonished. They made magnetic resonance and what they saw was very strange. Dopamine from all other brain structures was gathered round the brain structure that was responsible for the movements of the persons, so they supported the ability to move. In patients with Parkinson's disease the levels of Dopamine are lower and the effect of the drugs is to increase their levels. In this case the strong patient's believe that this is a new better drug organised Dopamine from all surrounded structures to help the structure where the Dopamine' level is lower.

Here one can understand the power of suggestion. It is obvious from the description of the patient with Parkinson's disease (PD).

OBJECTIVE:

To determine how the strength of expectation of clinical improvement influences the degree of striatal dopamine release in response to placebo in patients with moderate PD. Randomized, repeated-measures study with perceived expectation as the independent between-subjects variable.

SETTING:

University of British Columbia Hospital, Vancouver, British Columbia, Canada. Patients Thirty-five patients with mild to moderate PD undergoing levodopa treatment. Intervention Verbal manipulation was used to modulate the expectations of patients, who were told that they had a particular probability (25%, 50%, 75%, or 100%) of receiving active medication when they in fact received placebo.

• MAIN OUTCOME MEASURES:

• The dopaminergic response to placebo was measured using [11C]raclopride positron emission tomography. The clinical response was also measured (Unified Parkinson Disease Rating Scale) and subjective responses were ascertained using patient selfreport.

• RESULTS:

• Significant dopamine release occurred when the declared probability of receiving active medication was 75%, but not at other probabilities. Placebo-induced dopamine release in all regions of the striatum was also highly correlated with the dopaminergic response to open administration of active medication. Whereas response to prior medication was the major determinant of placebo-induced dopamine release in the motor striatum, expectation of clinical improvement was additionally required to drive dopamine release in the ventral striatum.

CONCLUSIONS:

- When s. o. believes in the therapy he could modulate dopamine re-lease in patients with PD.
- Some authors are sure that when the doctors are not speaking about the healthy problem do not help for the recovery of the patients.

Jatrogenia

The root of the word Jatrogenia comes from the Greece word “jatos” – physician and genesis – origin. This term was used for the 1st time by O. Bumke in 1925.

Jatrogenia is a disease that could be caused by some one’s word of speech (medical staff, doctor, newspapers, internet, TV, radio or some ill persons).

*“When some persons speak too much about the symptoms of a given disease in their brain is formed so called **“dominant fireplace”** in the cortex of the big hemisphere. They spread pathological impulses to different parts of the Central Nervous System.”*

Ivan Petrovich Pavlov

YATROGENIA & PSYCHOTHERAPY

This disturbances could be caused by;

- medical and not-medical persons,
- looking after ill patient with a heavy disorders (Infarct, insult, terminal patients);
- looking films or reading books with description of s. o. complains;
- reading medical literature;
- person’s words can make healthy persons to become ill or the ill person to improve. as s. o. can make you to feel happy or unhappy.

Nicola SHIPKOVENSKI

Yatrogenic damages could be suggested by:

- TV-program newspapers,
- Internet; medical lectures;
- Medical literature, radio; talk lecture;
- Waiting room -
- Therapy of silence “silence therapy”
- Conscious damage
 - to care of ill persons, later s.o copy their symptoms;
 - medical damages, that could be received by the medical personal.

Nikola Shipkovenski (1956) is a Bulgarian psychiatrist, who wrote a book “Jatrogenia” in Germany. It was translated in English and was known in Japan, but till now it is not translated in Bulgarian language. In this book he stressed about so called public lectures that could provoke various neurotic symptoms. According Shipkovenski these lectures could play the role of “**jatrogenic damage**”. In this group are included all lectures on public health, conversations of the patients about their health in the hospital, popular medical literatures, commentary on the patient’s state during the visitation, demonstration of the patients in front of the students and s. o.

“An exchange of neurotic attempt” – this term is used by Shipkovenski, and his idea was to stress on the fact that it is not necessary many patients to be waiting in front of the doctor’s room. He mentioned that when many patients are waiting their turn in front of the doctor’s consulting room they prefer to tell each other the story of their disease. Some of the waiting patients have the ability to suck in complains of the other patients, and the number of their symptoms will increase. Such an exchange could be noticed in the hospital room. One of the duties of the nurses is to forbid the patients to speak about their illness.

The therapy of “medical silence” – Shipkovenski advised the patients not to speak about their physical and psychic disorder.

He advised the walls of the waiting room to be with nice pictures, the patient must hear a nice classical music and not to have the ability to read any medical prospects about the symptoms of the diseases and the side effects of the various psychopharmacological drugs.

PSYCHOTHERAPY

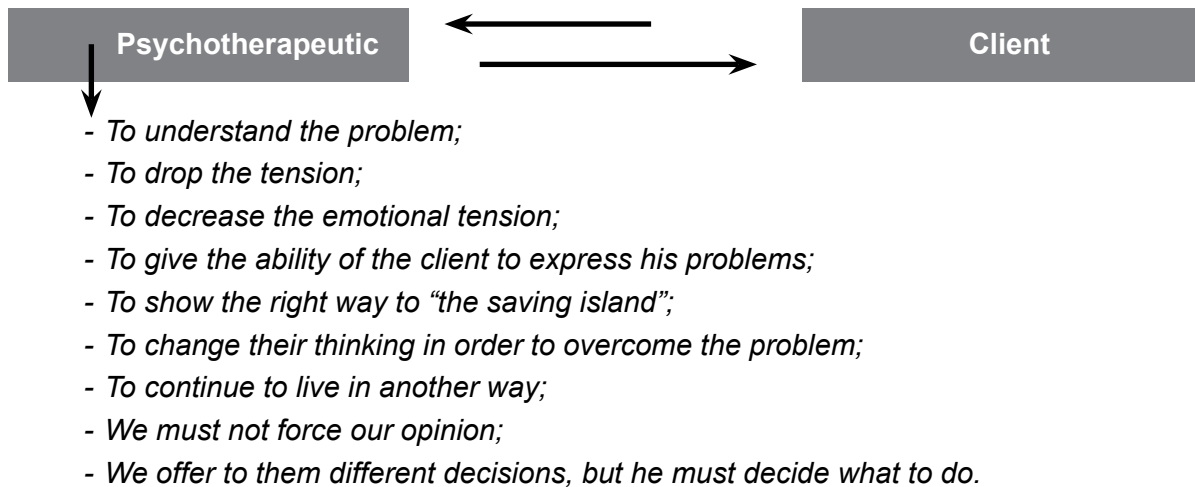
Psychotherapy is any form of treatment of mental illness, behavioural maladaptations, and or other problems that are caused by an emotional nature in which a trained person established a professional relationship with a patient for the purpose of modifying or reversing disturbed patterns of behaviour, and would form a positive personality growth and development.

Historically data indicate that its roots came from the temple medicine of the ancient civilization in Egypt, India, Assyro-Babylonia and Ancient Greece. In Medieval Bulgarian monasteries, various means of autohypnosis were used. Some of the most established Bulgarian psychiatrists that work in the field of psychotherapy and hypnotherapy are K. Cholakov, N. Kristnikov, I. Petrov, A. Atanasov, V. Jonchev, T. Tashev, Ts. Brankov, S. Agopian.

Psychotherapy begins at the end of 18th Century and it is connected with the name of **Franz Messmer** (1733-1815). He was the 1st that gave a demonstration of **hypnotism** (animal magnetism) in Vienna about the middle of the 18th Century. At the beginning he believed of its curative power. Later he spoke about his special magnetic curative fluid. Many people in that time believed in his magnetism. As he could not pay attention to all of them he hanged many metal sticks and subject on the trees in his courtyard. He said to the people that he gave his magnetism to this metal subjects and if they touched the metal subjects they could take from his magnetism, that could help them.

This is a history.

There are numerous forms of psychotherapy.



Psychotherapy is a method for the treatment of patients/clients by the use of various psychological methods and mainly by the use of speech:

- hypnotic therapy;
- behavior therapy;
- psychoanalyses;
- cognitive therapy;
- positive psychotherapy;
- individual psychotherapy – is used individually on one person;
- group psychotherapy – after the war when many persons need the help of psychotherapy and the number of the psychotherapeutics was not enough group psychotherapy was the best decision;
- family psychotherapy – when there is a serious problem in the family is necessary to have a conversation with all members of the family.


Gestalt Therapy

Gestalt psychology or **gestaltism** (its roots come from the German word: Gestalt “shape, form”). It is a theory of mind. **Gestalt psychology tries to understand the laws of our ability to learn and to support perceptions in chaotic world.** The central principle of Gestalt psychology is that the mind forms a global whole with self-organizing tendencies. This principle maintains that when the human mind (perceptual system) forms a percept or gestalt, the whole has a reality of its own, independent of the parts. The original famous phrase of Gestalt psychologist Kurt Koffka “*The whole is other than the sum of the parts*” is often incorrectly translated as “The whole is greater than the sum of its parts” and thus used when explaining gestalt theory, and further incorrectly applied to systems theory. Koffka did not like the translation. He firmly corrected students who substituted “greater” for “other”, “This is not a principle of addition” he said. “The whole has an independent existence”.

The concept of gestalt was introduced in 1890 by **Christian von Ehrenfels**. The idea for gestalt has its root in theories of D. Hume, J. von Goethe, I. Kant and others. The Gestalt psychology influenced Gestalt therapy.

G e s t a l t - p s y c h o l o g y

Fritz Perls
(8.07.1893-1970)



When the psychic development of a person is natural and they are able to understand their real feelings and realize with their behavior, but not with expectations of the feelings of the people of surrounding.

Their motto/device:

1. “I have interest about myself and my own things – and You must occupy only with your own things”.
2. “ I come into the world without your permission”
3. “You come to this world and are not obliged to live according to my expectations”

Techniques of Gestalt-therapy

1. To wake up to a conscious	To direct his attention towards the present events (to retell about his thoughts, feelings, needs and s. o.
2. To hold the attention	The ability to hold the attention of some thoughts, feelings, s. o.
3. To fantasy	The ability to fantasy – oral, written, and dramatic forms and to play/act this.
4. The game of a role	To play fragments of their own dreams,
5. “EMPTY CHAIR”	He imagines that he is seating at the chair and is in front of the group.
6. “HOT CHAIR”	When the person is seating at the chair in front of the group:

Gestalt psychologists determined that perceptions are the products of complex interactions among various stimuli, whereas the behaviorists approached to understanding the elements of cognitive processes. Gestalt psychologists sought to understand their organization. The **gestalt effect** is the capability of our brain to generate whole forms, particularly with respect to the visual recognition of global figures instead of just collections of simple and unrelated elements (points, lines, curves...).

Theoretical principles of Gestalt therapy

- **Principle of Totality** – the conscious experience must be considered globally (by taking into account all the physical and mental aspects of the individual simultaneously) because the nature of the mind demands that each component to be considered as a part of a system of dynamic relationships.

- **Principle of psychophysical isomorphism** – a correlation exists between the conscious experience and the cerebral activity.

Carl Rogers' theory

Carl Rogers was born in Chicago in 1902. In 1951 he published his major work, **Client-Centered Therapy**, where in he outlines his basic theory. He organized a student seminar called "*Why am I entering the ministry?*" I might as well tell you that, unless you want to change your career, never take a class with such a title! Roger's theory is based on dealing with his clients. Rogers sees people as basically good or healthy – or at least, not bad or ill. In other words, he sees mental health as the normal progression of life, and he sees mental illness, criminality, and other human problems, as distortions of that natural tendency. The theory is built on a single "force of the life" he called **the actualizing tendency**. It could be defined as the built in motivation present in every life-form to develop its potentials to the fullest extent possible. Rogers believed that all creatures noted to make the best of their existence. Rogers captures with this single great need or motive all the other motives that other theorists talk about. He asked us, why do we want air and water and food? Why do we seek safety, love, and a sense of competence? Why, indeed, do we seek to discover new medicines, invent new power sources, or create new works of art?

Rogers said to us that organisms know what is good for them. Evolution had provided us with the senses, the tastes, the discriminations we need: when we were hunger, we found food – not just any food, but food that tastes good. Food that tastes bad is likely to be spoiled, rotten, unhealthy. That what good and bad tastes are our evolutionary lessons made clear! This is called **organismic valuing**.

Among the many things that we instinctively want was **positive regard**. Rogers umbrella term is for things like love, affection, attention, parent's care, and so on. It was clear that babies needed love and attention. In fact they could die without it.

Positive self-regard was another thing, that was self-esteem, self-worth, positive self-image. We achieved this positive self-regard by experiencing the positive regard others show us over our years of growing up. Without this self-regard, we could feel small and helpless, and again we fail to become all that we can be!

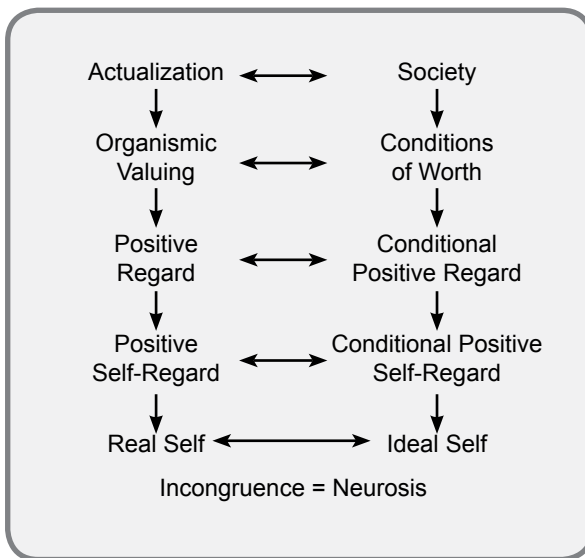
Like Maslow, Rogers believed that animals will tend to eat and drink things that are good for them, and consume them in balanced proportions. Babies, too, seem to want and like what they needed.

Our society also leads us to some principles: as we grow up, our parents, teachers, peers, the media, and s. o. give us what we need when we show we are "worthy," rather than just because we need it. We get a drink when we finish our class, we get something sweet when we finish our vegetables, and most importantly, we get love and affection if we "behave!"

Getting positive regard on "on condition" Rogers calls **conditional positive regard**. Because we do indeed need positive regard, these conditions are very powerful, and we bend ourselves into a shape determined, not by our organismic valuing or our actualizing tendency, but by a society that may or may not truly have our best interests at heart. A "good little boy or girl" may not be a healthy or happy boy or girl!

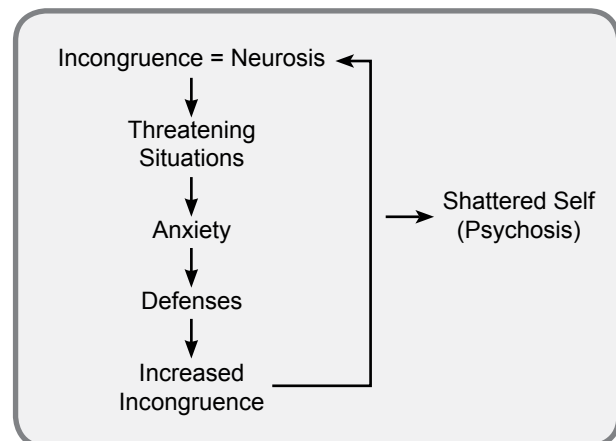
Over time, this "conditioning" leads us to have **conditional positive self-regard** as well. We begin to like ourselves only if we meet up with the standards others have applied to us, rather than if we are truly actualizing our potentials. And since these standards were created without keeping each individual in mind, more often than not we find ourselves unable to meet them, and therefore unable to maintain any sense of self-esteem.

Contradictions: the aspect of your being that is founded in the actualizing tendency, follows organismic valuing, needs and receives positive regard and self-regard, Rogers calls the **real self**. It is the “you” that, if all goes well, you will become.



On the other hand, to the extent that our society is out of synchrony with the actualizing tendency, and we are forced to live with conditions of worth that are out of step with organismic valuing, and received only conditional positive regard and self-regard. We developed instead an **ideal self**. By ideal, Rogers is suggesting something not real, something that is always out of our reach, the standard we can't meet. **Incongruity** – is called the inadequacy between the real self and the ideal self, the “I am” and the “I should”. In fact, incongruity is essentially what Rogers means by **neurosis**: Being out of synchrony with your own self. If this all sounds familiar to you, it is precisely the same point made by Karen Horney!

Defenses: when you are in a situation where there is an incongruity between your image of yourself and your immediate experience of yourself (i.e. between the ideal and the real self), you are in a **threatening situation**. For example, if you have been taught to feel unworthy if you do not get on all your tests, and yet you are not really all that great a student, then situations such as tests are going to bring that incongruity to light – tests will be very threatening. When you are expecting a threatening situation than you will feel **anxiety**. Anxiety is a signal indicating that there is trouble ahead, that you should avoid the situation! One way to avoid the situation, of course, is to pick yourself up and run for the hills. Since that is not usually an option in life, instead of running physically, we run psychologically, by using **defenses**.



Rogers' idea of defenses is very similar to Freud's, except that Rogers considers everything from a perceptual point-of-view, so that even memories and impulses are thought of as perceptions. Fortunately for us, he has only two defenses: **denial** and **perceptual distortion**. **Denial** – it means to avoid the dangerous situations. An example might be the person who never picks up his test or asked about test results, so he does not have to face poor degree (at least for now!). Denial for Rogers does also include what Freud called repression. **Perceptual distortion** is a matter of reinterpreting the situation so that it appears less threatening. It is very similar to Freud's rationalization. A student that is not prepared for the tests may blame the professor for poor teaching, trick questions, bad attitude, or whatever. The fact that sometimes professors are poor teachers, write trick questions, and have bad attitudes only makes the distortion work better.

Unfortunately for the poor neurotic (and, in fact, most of us), every time he or she uses a defense, they put a greater distance between the real and the ideal. His words may make little sense. His emotions may be inappropriate. He may lose the ability to differentiate self and non-self, and become disoriented and passive.

Rogers also has a partial explanation for **psychosis**: Psychosis occurs when a person's defenses are overwhelmed, and their sense of self became "destroyed" into little disconnected pieces. His behavior likewise has little consistency to it. We see him as having "psychotic breaks" – episodes of strange behavior.

*Rogers is interested in describing the healthy person.
His term is "fully-functioning" and involves the following qualities:*

1. Openness to experience	It is the opposite of defensiveness. It is the accurate perception of one's experiences in the world, including one's feelings. The problem is to distinguish the real feelings from the anxieties.
2. Existential living	Rogers, as a part of getting in touch with reality, insists that we not live in the past or the future – The present is the only reality we have.
3. Organismic trusting	We trust ourselves we do what feel right, what comes natural. People say to do what comes natural – "If you are a sadist, hurt people; if you are a masochist, hurt yourself; if the drugs or alcohol make you happy, go for it; if you are depressed, kill yourself... This certainly doesn't sound like great advice.
4. Experiential freedom	It was connected whether or not people really had free will. We feel very much as if we do, we are free to do anything at all.
5. Creativity	If you could feel free and responsible, you will act accordingly, and participate in the world. A fully-functioning person, in touch with actualization, will feel obliged by their nature to contribute to the actualization of others, even life itself.

Rogarian therapy

Rogers originally called it **non-directive** because he felt that the therapist should not lead the client, but rather be there for the client while the client directs the progress of therapy. As he became more experienced, he realized that, as "non-directive" as he was, he still influenced his client by his very "non-directiveness!" In other words, clients look to therapists for guidance, and will find it even when the therapist is trying not to guide. Later he changed the name to **client-centered**. He thought that the client should say what is wrong in order to find the best ways of his improvement. Unfortunately some therapists felt that this name for his therapy was a bit of a slap in the face for them: Aren't most therapies "client-centered?"

Client-centered Roger's therapy

- **"supportive, not reconstructive"** – this is his famous phrase. Nowadays, client-centered therapy is used. He used the analogy of learning to ride a bicycle to explain: When you help a child to learn to ride a bike, you can not just tell him how. The child has to try it for himself. And you can not hold the child the whole time either. If he falls, he falls, but if you hang on, he will never learn to ride alone. It's the same in therapy.
- **"The independence" (autonomy, freedom with responsibility)** is what you are helping a clients to achieve than they will not achieve if they remain dependent on you (the therapist). They need to try their insights on their own, in real life beyond the therapist's office! An authoritarian approach to therapy may seem to work strange/marvelously at first, but ultimately it only creates a dependent person.

Reflection theory

Reflection is the mirroring of emotional communication: If the client says: "I feel like shit!", the therapist may reflect this back to the client by saying something like: "So, life's getting you down, hey?" By doing this, the therapist is communicating to the client that he is indeed listening and cares enough to understand. Reflection must be used very carefully, however.

Client often said things that they did not mean but needed to feel good to say this. For example, a woman said to me: "I hate men!" I reflected by saying "You hate all men?" Well, she said, maybe not all – her father or her brother or, for that matter, me. Even with those men she "hated", she discovered that the great majority of them she didn't feel as strongly as the word hate implies.

Positive psychotherapy (PP)

Positive psychotherapy (PP) is developed by **Nossarat Peseschkian** since 1968. It is a humanistic and psychodynamic psychotherapy and it is based on positive image of man. PP is practiced in more than 33 countries with approximately 30 independent centres and institutions. In 1971 in Germany were organized postgraduate training institutions for physicians, psychologists, psychiatrists, pedagogues in the field of positive psychotherapy. Since 1974 more than 38,000 physicians and psychologists were trained in Germany and several years later their number became several thousands. This method was used in East Europe, Russian, Bulgaria, Asia, Nicosia, Cyprus, Romania, Switzerland, Turkey, Ukraine.

The word “positive” (lat. positum) means “the actual”, “the given”, “really” – the aim of positive psychotherapists is to help their patients to clear the view on the disturbance and recognize their meaning (basic-capabilities and actual-capabilities). Accordingly the disorder will be interpreted.

The author of this method used various ancient Arabian proverbs and parables. During the dialog with the client the therapist from time to time stressed on some life events and made a comparison with some of the proverbs. For example: A woman went to the church and began to bewep her fate. At that moment God appeared and said to her: “Here in the church you see many sacks. You can open them and you will learn many different fates. If you like you could choose one of them. She opened the 1st sack – one young woman weeps, because her little child died”. The woman quickly closed this sack and opened another: A 16 years old girl weeps because of the death of her mother. She closed it and said: “I do not want this fate”. She continued to open one after another the sacks and she learned the fates of many persons, and all of them were sad and tragic. At last she stopped and said to God: Please God let me have my own fate, I do not want another fate. I prefer my own fate, please give me my fate”.

Another story is connected with a very old oak. He was asked: “There were so many storms, severe winds and thunders, but nothing could break your strong and big stalk. What has happen that your trunk had fell on the earth? The sad ancient oak tree answered: “The little warms throw down me”.

In the part of “**Thinking**”, and specially when is discussed the subject of “**Para-adaptive reactions of thinking**” by **K. Zaimov**, one could find out many elements of positive thinking (see pages 92, 93). It is connected with the various associations that one could make by listening a given word. The example “water” for some persons is connected with positive emotions, whereas some other persons this word is connected with drown of their lovely person during an incident in the ocean.

PP is using 3 criteria:

to eliminate the disturbances and conflicts;
variety of methods, which exist beside each other;
passive attitude of the patient.

According to the supporters of the positive psychotherapy, their main task is to diarect the negative thinking in some other direction where the patients could form positive thinking, or simply to change the associations of negative thinking with associations with positive thinking.

Positive psychotherapy tries to broaden the traditional approach with:

- **positive approach in response to psychopathology;**
- **mediation for the co-operation of different technical disciplines** (balance-model, basic-capacities and actual-capacities);
- **Five-stage strategy of therapy and self-help** in the sense of a positive conflict management to activate the patient and to support the therapist-patient-relationship. After the oriental wisdom: “The way to maintain one’s happiness is to pass it on”.

The Main Principles of PP:

The three main principles of PP are:

<p>Principle of Hope</p>	<p>It concluded that one does not try to eliminate the disturbances, but would like to understand it and to respond to its positive aspects. So this positive view could become possible not only for the patient, but also for his environment. The patients learn that the symptoms and complains of the illness are signal to bring their 4 quality of life into a new balance.</p>
<p>Principle of Balance</p>	<p>We must use specific approach for each client as each of them is individual with unique and the problems of each client must be decided individually. Peseschkian formulated with balanced model of PP a vivid model of coping with conflicts in different cultures. According to the balance model, the 4 areas of life are:</p> <ol style="list-style-type: none"> 1. body/sense-psychosomatic = body-oriented modes; 2. achievement/activities-stress factors = achievement oriented modes; 3. contact/environment-depression = relationship oriented modes; 4. fantasy/future/world view/meaning of life-fear and phobia = fantasy oriented.
<p>Principle of Consultation</p>	<p>Fife-stages of therapy and self-help.</p> <p>1st step: observation: distancing the capacity to express desire and problems;</p> <p>2nd step: Taking inventory (cognitive capacities: events in the last 5 to 10 years);</p> <p>3rd step: Situational encouragement (self-help and resource-activation of the patients: the ability to use past successes in conflict solution);</p> <p>4th step: Verbalization (communicative capacities: the ability to express outstanding conflicts and problems in the 4 quality of life.</p> <p>5th step: Expansion of goals (in order to continue forward we must be oriented in the life after the problems are left to be solved. What is their goal during the next 5 years.</p>

Help to change standpoint: the patients could be mobilized by various stories, parables, and allegories for the emotional and mental relocation. By the use of various cross-cultural examples and stories the clients could change their behavior and help them to overcome the problems.

Image of man: Positive psychotherapy places the individual development of a person into the context of globalization. It is argued that for the first time in the history of humanity, a global, interconnected society is emerging whose characteristic feature is its cultural diversity.

Behavioral psychotherapy

Behavioral psychotherapy is a type of psychotherapy from the behaviorism tradition, and one of two streams of thoughts (the other being cognitive psychotherapy) that have come together to produce cognitive behavioral therapy. It is with great traditions in clinical practice. From purely behavioral perspectives this therapy shows a good success with clients from a variety of problems. It is based on operent and respondent principles that had considerable evidence based to support its usage. Behavioral psychotherapy is functional analytic psychotherapy. If we would like to have a successful behaviour therapy. We must have in mind Pavlov's conditioned/unconditioned stimulus (pages 11-14). As Pavlov's dogs were conditioned to salivate at the sound of a bell once the bell had become associated with meat a person can be conditioned to feel fear in neutral situations that have come to be associated with anxiety. The best example for this is the case with Irine, with zoophobia by butterfly (see page 264).

HYPNOTHERAPY

Hypnosis entered in the 19th century. This remarkable transformation was due to the persistence of individual physicians and researchers, who risked professional ostracism and ridicule to explore the techniques discovered by Mesmer. Mesmer's ideas didn't disappear after his death, but spread out among a growing band of devotees to develop in ways he could never have imagined. In the early decades of the century, mesmerists fell into two camps; "fluidists", who clung to the belief in animal magnetism being transmitted across the ether, and "animists", who looked for a more psychological explanation.

Further significant developments occurred towards the end of the 19th century, when a debate emerged in France between the Salpêtrière and Nancy "schools" of hypnosis. Both were inspired by the work of Charles Richet (1850-1935), a professor of physiology at the Paris' University, who directed experiments in medical and clinical hypnosis in the 1870s.



Jean-Martin Charcot
(1825-1893)

The Salpêtrière school grew up around Jean-Martin Charcot Director of Medicine at the famous/infamous Salpêtrière Women's Asylum. Charcot's main interest was in female "hysteria". He was a flamboyant figure, given to theatrical presentations and demonstrations, illustrated with the very latest photographic technology (indeed, he published a regular photographic journal, illustrated with portraits of his patients in various stages of hysteria). He also acquired the rather unflattering nickname of the "Napoleon of Neurosis". Charcot explicitly related hypnosis to hysteria, since the symptoms of hysteria, as he saw it, exactly matched the three "stages" of hypnosis that he'd been able to identify, following on from Richet's work. These were "catalepsy", where the subject would respond to physical suggestions given by the hypnotist; "lethargy", where they wouldn't respond to any suggestions at all; and "somnambulism", where the subject was able to converse and respond to any suggestion given to them. Charcot was fascinated by the ready susceptibility that hysterics displayed towards hypnosis, and formed the conclusion that hypnosis was another form of hysteria – in short, an abnormality.

Charcot first began studying hysteria after creating a special ward for non-insane females with "hystero-epilepsy"; he discovered two distinct forms of hysteria among these women; minor hysteria and major hysteria. http://en.wikipedia.org/wiki/Jean-Martin_Charcot - cite_note-16 His interest in hysteria and hypnotism "developed at a time when the general public was fascinated in 'animal magnetism' and "mesmerization", http://en.wikipedia.org/wiki/Jean-Martin_Charcot - cite_note-CrimeHysteria-17 which was later revealed to be a method of inducing hypnosis. http://en.wikipedia.org/wiki/Jean-Martin_Charcot - cite_note-Plotnik2012p170-18. His study of hysteria "attracted both scientific and social notoriety". http://en.wikipedia.org/wiki/Jean-Martin_Charcot - cite_note-Goetz211-19. Charcot is best known today, outside the community of neurologists, for his work on hypnosis and hysteria. He initially believed that hysteria was a neurological disorder for which patients were pre-disposed by hereditary features of their nervous system, but near the end of his life concluded that hysteria was a psychological disease. Charcot worked and taught at the famous Salpêtrière Hospital for 33 years. His reputation as an instructor drew students from all over Europe.

Bernheim (1840-1919), who was a professor of medicine in Nancy attacked Charcot's findings, disputing the "three stage" model of hypnosis and successfully arguing that suggestibility was a normal human trait. He proved this by using men in his experiments, since it was widely accepted that men were less susceptible to suggestion than women!

Sigmund Freud, who went to Paris to learn hypnosis from Charkot supported some of his theories. He was enthusiastic from his method and when he returned in Austria he began to use this method together with his colleague J. Breuer. Freud developed therapeutic techniques as **“free association”** and discovered **transference**, establishing its central role in the analytic process.

His analysis of dreams as wish-fulfillments provided him with models for the clinical analysis of symptom formation and the mechanisms of repression as well for elaboration of his theory of the unconscious as an agency disruptive of conscious states of mind.

*Anna O, was one of their patients, that was invited to talk about her symptoms, while under hypnosis, she thought out the phrase “talking cure” for her treatment. Talking in this way the symptoms reduced in severity as she remembered traumatic incidents associated with their onset. He was sure that patients’ dreams would be very useful in the therapy. Breuer is perhaps best known for his work in the 1880s with Anna O. (the pseudonym of Bertha Pappenheim), a woman suffering from “paralysis of her limbs, and anaesthesias, as well as disturbances of vision and speech.” Breuer observed that her symptoms reduced or disappeared after she described them to him. Anna O. humorously called this procedure **chimney sweeping**. She also coined the more serious appellation for this form of therapy, talking cure. Breuer later would refer it as the “**cathartic method**”.*



Freud and Breuer documented their discussions of Anna O. and other case studies in their 1895 book, *Studies on Hysteria*. These discussions of Breuer’s treatment of Anna O. became “a formative basis of psychoanalytic practice, especially the importance of fantasies (in extreme cases, hallucinations), hysteria and the concept and method of catharsis which were Breuer’s major contributions.

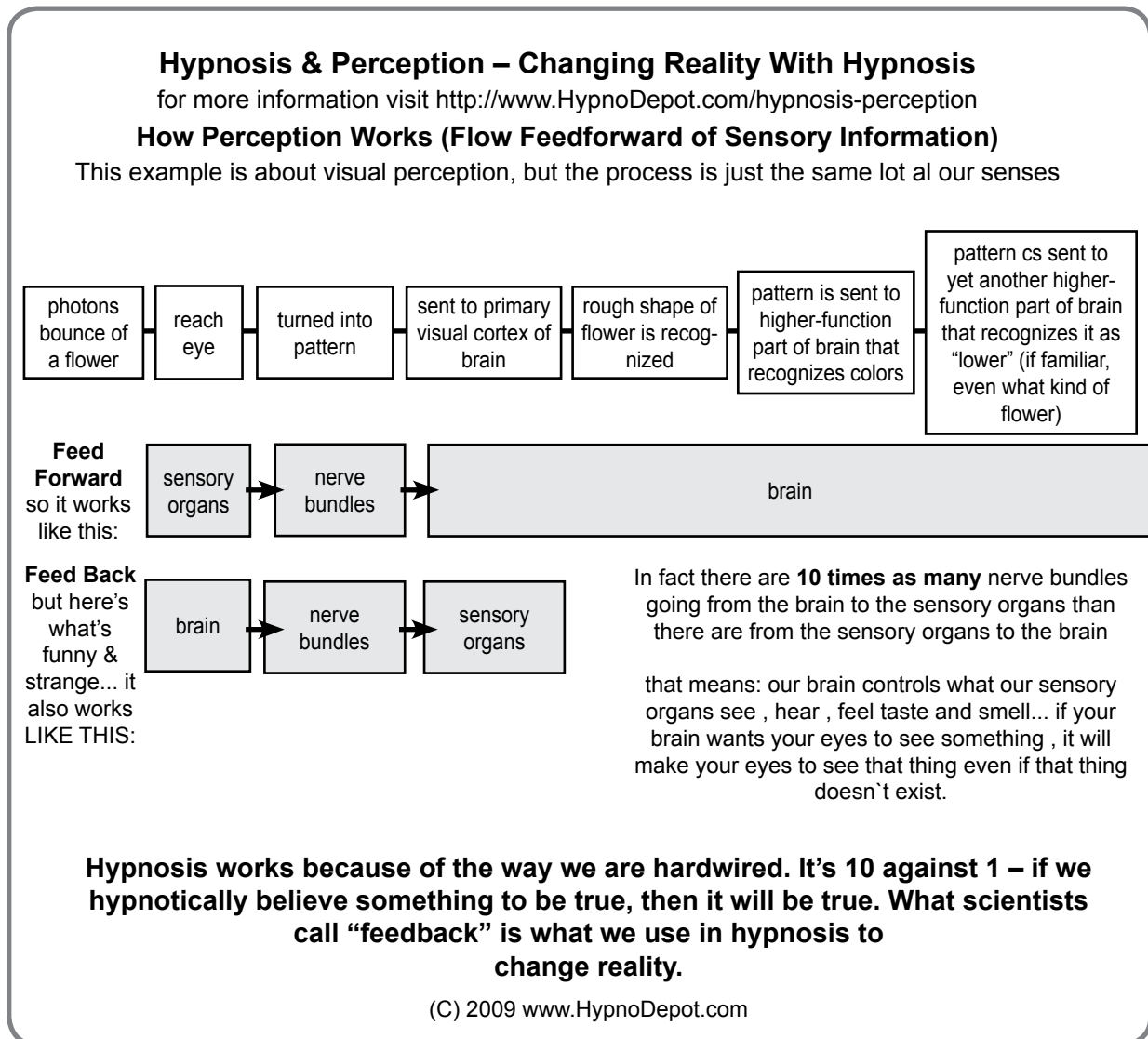
Freud was looking for a grand theory that would make him famous. He was always fastening on what he thought would be a single cause of hysteria, such as sexual conflict... Breuer, on the other hand, wrote about the many factors that produced symptoms, including traumas of a variety of kinds. The two men became increasingly estranged. From a Freudian standpoint, “while Breuer, with his intelligent and amorous patient Anna O., had unwittingly laid the groundwork for psychoanalysis, it was Freud who drew the consequences from Breuer’s case. Breuer didn’t agree with Freud that sexual issues were the only cause of neurotic symptoms.

Definition: “Induces hypnotic state in client to increase motivation or alter behavior patterns: Consults with client to determine nature of problem. Prepares client to enter hypnotic state by explaining how hypnosis works and what client will experience. Tests subject to determine degree of physical and emotional suggestibility. Induces hypnotic state in client, using individualized methods and techniques of hypnosis based on interpretation of test results and analysis of client’s problem. May train client in self-hypnosis conditioning.” (by J. Cappas in 1973).

Hypnosis is an original method used to treat hysteric disorders. In the modern psychiatry this method is used for anxiety disorders, some depressive states, certain habit disorders, irritation fear, after surgical procedures, in some oncology disorders, breast cancer care, gastrointestinal problems.

It is a state in which the hypnotherapeutic induced hypnotic state in the client to increase the motivation or alter behavior pattern through hypnosis. The idea is how the psychotherapeutic to determine the nature of the problem and to reduce the tension and anxiety. The client must be informed for the method and how does it work. The client may be educated to do self-hypnosis.

Hypnotherapy is a form of psychotherapy used to create subconscious change in a patient in the form of new responses, thoughts, attitudes, behaviors or feelings. It is undertaken with a subject in hypnosis. A person who is hypnotized displays certain unusual characteristics and tendency, compared with a non-hypnotized subject, most notably heightened suggestibility and responsiveness.



In the 1950 Milton Erickson developed a different approach of hypnotism, known among psychotherapeutics as „**Ericksonian hypnotherapy**” or “**Neo-Ericksonian hypnotherapy**”. Erickson made an ordinary conversation with many clients, he used a complex pattern, and therapeutic strategies.

Cognitive/behavioral hypnotherapy

Cognitive/behavioral hypnotherapy integrated psychological therapy as a cognitive/behavioral therapy from one side and clinical hypnosis from the other side. Some psychotherapists established that patient's improvement is about 70% greater. The growing needs of cognitive and behavioral psychotherapeutic theories paved the way for closed integration between hypnotherapy and cognitive and behavior therapy.

Behavioral hypnotherapy in patient with phobia (honey-phobia, bee-phobia)

Ivona is 28 years young female, married with one child. She worked in a children garden as a teacher. Since 4 years for the 1st time she had fear from various soap-powders. But for a short period of time this phobia was overcome. After that appeared a fear from hairs. When she went to hairdresser she wore the oldest clothes, because after that she had to throw them in a waste paper basket as she was sure that hairs could be found on her clothes. This continued about 6 months.



Two years ago she had seen a honey on her blouse and she imagined how it steam down toward her hand. Then she imagined that all her body is covered with honey. Since this moment she had phobia from honey. When the children had for breakfast of slice with butter and honey she leaved the children garden and said to the other colleagues, that she could not stay any more there. This happened many times. When she saw a honey-jar on the table she went to the bathroom and began to wash herself more than 3 hours. When she washed the clothes and saw honey she began to wash the clothes several times with the wash-machine.

The problem became serious when their neighbours putted several bee-hives and she was too anxiety. She had phobia from bees and she could not leave the house, she stayed only in the room, did not go to her working place. This phobia continued more than 2 years. She used various antidepressants and even neuroleptics, but she did not recover. It was the reason to use behavior hypnotherapy and antidepressants.

She visited the consulting room in 2008 and said to me: "I have a very serious problem. I do not know how to continue. It is not possible to live in this way. It is terrible. Even when I hear the words "honey" and "bee" I go to bath and begin to wash my hands many times. I can not continue to live in this way any more. It is better to die. I can not do my everyday engagements. I can not care for my child..."

During the last 2 weeks she was without any therapy. We include Moclobemide (MAO-inhibitor) in co-medication with carbamazepin (CBZ). We advised her to make transcranial magnetic stimulation, but after the 6th procedure she stopped the therapy as she had no effect. She agreed to begin hypnotherapy. We decided to use hypnosis. We begin hypnosis. She was introduced in hypnosis and during the hypnosis she had to imagine how she looked at the honey-jar and touched it. After that she had to imagine how she opens the honey-jar, how she eats honey from it and then how she washes her hands no more than 3 times. During the hypnosis she had to imagine that she is passing near by the bee-hives. After the 8th seance she had to bring a honey-jar, a spoon, and an wet hand-towel. She was introduced in hypnosis and she followed our instructions – she opened the honey-jar than she took the spoon and eated from the honey. Than she washed her hand 2 times with the wet hand-towel. On the 10th seance she had to repeat this during hypnosis and after the seance. After the 12th seance she was stabilized and the advice was to use 150 mg. Moclobemid and 200 mg. CBZ. Her psychic state was stabilized. She became pregnant and she could care for her 2 children.

Cognitive hypnotherapy and bulimia

Some scientists suggested the treatment of patients with bulimia nervosa. They established that patients with bulimia nervosa that had no improvement from medicaments or other kind of psychotherapeutic methods and from various alternative treatments could improve by hypnotherapy (see the case described on page 267).

In British Medical Journal in 1999 were published the main indications for the use of hypnosis are:

- Cancer relaxation, related with anxiety, pain, nausea, vomiting;
- Panic disorders and insomnia;
- Combined with cognitive therapy – various states as phobia, obesity, anxiety;
- Acute and chronic pain;
- Asthma and irritable bowel syndrome.

Learn about hypnosis including some of the most common myths and misconceptions.

Some Myths about Hypnosis		
Myth 1	When you wake up from hypnosis, you won't remember anything that happened when you were hypnotized.	Amnesia may occur in very rare cases, people generally remember everything
Myth 2	Hypnosis can help people remember the exact details of a crime they witnessed.	Hypnosis does not lead to significant memory enhancement or accuracy, and hypnosis can actually lead to false or distorted memories.
Myth 3	You can be hypnotized against your will.	Hypnosis requires voluntary participation on the part of the patient.
Myth 4	The hypnotist has complete control of your actions while you're under hypnosis.	A hypnotist cannot make you perform actions that are against your values or morals.
Myth 5	Hypnosis can make you super-strong, fast or athletically talented.	Hypnosis can not make people stronger or more athletic than their existing physical capabilities.

How Does Hypnosis Work?

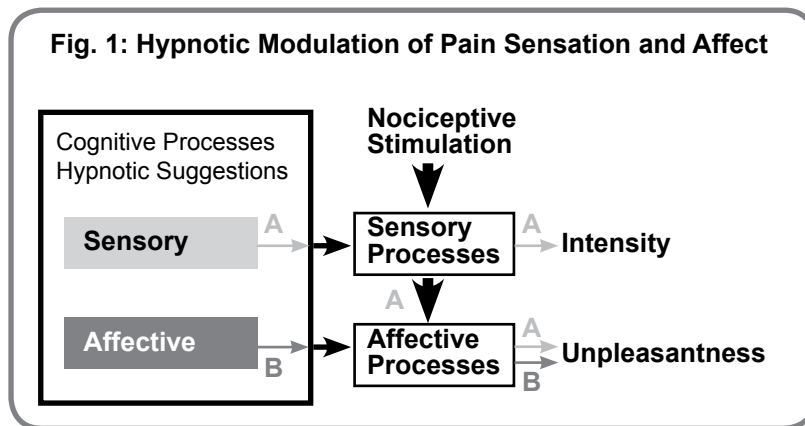
When s. o. hears the word hypnotist, what comes in his imagination? The word hypnosis may provoke various images that could bring about a hypnotic state by cheerful a pocket watch back and forth.

In reality, real hypnosis look liked little to these stereotyped images. According to John Kihlstrom, ***“The hypnotist does not hypnotize the individual. Rather, the hypnotist serves as a sort of coach or tutor whose job is to help the person become hypnotized”***. While hypnosis is often described as a sleep-like trance state, it is better expressed as a state characterized by focused attention, heightened suggestibility and vivid fantasies.

How could be explained the effect of Hypnosis?

The experience of hypnosis can vary dramatically from one person to another. Some of the hypnotized individuals were reporting for their feelings and senses of detachment or extreme relaxation during the hypnotic state, while others even feel that their actions seem to occur outside of their conscious volition.

Hypnosis could be used for the treatment of chronic pain such as rheumatoid arthritis, to reduce the pain during childbirth, and pain during dental procedures.



1. acute and chronic pain;
2. general anxiety, tension and stress, for relaxation and self-relaxation;
3. insomnia;
4. tension, headache, asthma, migraine, psoriasis, eczema, urticaria, persons included in a weight reduction program, gastro-intestinal complains.

Hypnotherapy in childbirth:

Hypnotherapy had been used during pregnancy in order to prepare the future mother for the birth of the child and to reduce the pain and anxiety.

Ernest Hilgard’s experiments demonstrated how hypnosis could be used to dramatically alter perceptions. After instructing a hypnotized individual not to feel pain in his or her arm, the participant’s arm was then placed in ice water. While non-hypnotized individuals had to remove their arm from the water after a few seconds due to the pain, the hypnotized individuals were able to leave their arms in the ice water for several minutes without experiencing pain.

Can everybody be hypnotized?

It is one of the most putted questions. Even when some people think that they could not be hypnotized it was established that most of them are hypnotizable than they tension. The statistical data showed that 15% of people are very responsive to hypnosis. Children are more susceptible to hypnosis. It is discussed that only 10% of the adult are impossible to hypnotize. More responsible to hypnosis are persons absorbed in fantasies.

Psychophysiology of Hypnosis

On 6 July 1924 the psychiatrist Hans Berger first observed that the human brain produces weak electric shifts in potential of a few millionth of a volt which – recorded by suitable amplifiers – would yield a person’s brain electric recording (“Hirnstrombild”, electroencephalogram, EEG). Berger did not dare publish his findings until 1929, since he was sure that these potentials could really be regarded as a genuine bioelectric activity. A few years after Berger’s study, Hubert Rohracher had special interests in this phenomenon. Together with Ottenthal he built a functioning thermionic amplifier in Vienna and in 1930s he was able to prove that the EEG reflects minute changes in our consciousness.

When the examined person was concentrated on some task (he pleased him to solve mathematical problems) and noticed that small waves occur in rapid succession.

In a state of relaxation, on the other hand, slower waves predominate which Berger had already termed “alpha waves” because of their remarkable regularity.

Whenever someone falls asleep this likewise manifests itself, as Rohracher was the first to show, in a marked shift in the EEG, namely the occurrence of even slower and larger waves that could change in accordance with how deeply we sleep.

In this way we obtain objective data about a person’s state of consciousness and can e.g. register objectively the current depth of sleep which naturally defies our self-observation.

This is a very important step in the direction of a new “**objective psychology**”, thus solving the problem of a psychology that was based solely on introspection.

Already in 1937 Rohracher began his remarkable efforts to gain access to a person’s experience by means of the electric phenomena of the brain. In this way the relationship between the brain electric phenomena and the psychological processes can also be clearly and precisely demonstrated.” As he stated in the same work, his central concern was the recording of the “electric phenomena of the brain underlying our conscious experience”.

The Vienna Group focused on another brain electric phenomenon which was to constitute the main emphasis of our research for the next twenty years: the cortical potential or Slow Potential. It had long been assumed that these potentials might be an indication of the excitability of a specific cortical area and in contrast to the discrete impulse.

Most of the scientists reported for EEG changes during hypnosis. Ulet et al. established significant differences of EEG between hypnotic and awake state. During hypnotic induction, there was a significant decrease of slow and increase of alpha and beta waves accompanied by an increase in amplitude and decrease of amplitude variability, in the best hypnotic subjects. Both the best and the poorest hypnotic subjects exhibited similar changes during the hypnotic trance period, although the best hypnotic subjects showed greater EEG changes, in particular, significantly more alpha activity, than the poorest ones. Augmented alpha activity can also be seen during Yoga and Zen meditation as well as autogenic and alpha training, which seems to indicate that hypnosis has something in common with these states.

In numerous studies, researchers have compared the physical „**body signs**” of hypnotic subjects with those of unhypnotized people. In most of these studies, the researchers found no significant physical change associated with the trance state of hypnosis. The subject’s heart rate and respiration may slow down, but this is due to the relaxation involved in the hypnotism process, not the hypnotic state itself.

How could be changed brain’ activity? The most notable data comes from **electroencephalographs** (EEG), measurements of the electrical activity of the brain. Extensive EEG research has demonstrated that brains produce different **brain waves**, rhythms of electrical voltage, depending on their mental state. Deep sleep has a different **rhythm** than dreaming, for example, and full alertness has a different rhythm than relaxation. Brain-wave information is not a definitive indicator of how the mind is operating, but this pattern does fit the hypothesis that the conscious mind backs off during hypnosis and the subconscious mind takes a more active role. V. Jonchev and K. Cholakov found that bioelectrical activity during hypnosis depends on the suggestion that was done by the hypnotist.

Researchers have also studied patterns in the brain's cerebral cortex that occur during hypnosis. In these studies, hypnotic subjects showed reduced activity in the left hemisphere of the cerebral cortex, while activity in the right hemisphere often increased. **Neurologists believe that the left hemisphere of the cortex is the logical control center of the brain;** it operates on deduction, reasoning and convention. The right hemisphere, in contrast, controls imagination and creativity. A **decrease in left-hemisphere activity** fits with the hypothesis that hypnosis subdues the conscious mind's inhibitory influence. Conversely, an **increase in right-brain activity** supports the idea that the creative, impulsive subconscious mind takes the reigns. This is by no means conclusive evidence, but it does lend credence to the idea that hypnosis opens up the subconscious mind. **Williamson et al. (2001) established differences in various brain structures, heart-rate, and brain activation in subjects for hypnotizability with higher (HH) and with lower hypnotizability (LH).**

Whether or not hypnosis is actually a physiological phenomenon, millions of people do practice hypnotism regularly, and millions of subjects report that it has worked on them. In the next section, we'll look at the most common methods of inducing a hypnotic trance.

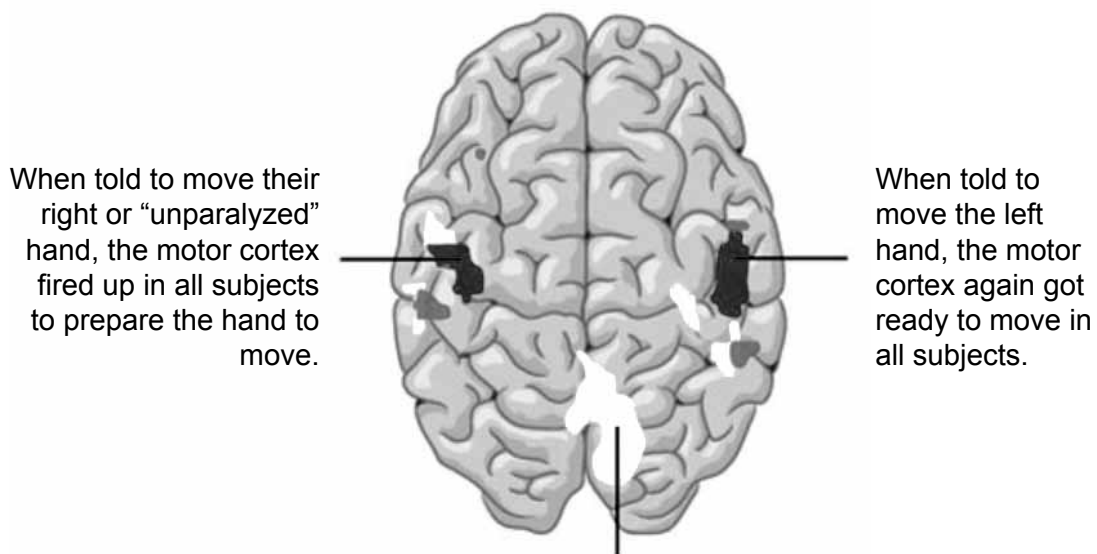
Pavlov's conception of hypnosis

Pavlov's conception of hypnosis as a state of inhibition intermediate between wakefulness and sleep was made. Some data mainly supporting this view were presented by **Das, J. P. (1956)**. Some relevant EEG studies were examined. Some of them appeared to have disproved the identity between sleep and hypnosis. This was not regarded as evidence against the Pavlovian view of hypnosis. He discussed several degrees of hypnosis.

Your brain on hypnosis

Studies show hypnosis reroutes brain signals. Hypnotized people who are told that their left hand is paralyzed show brain patterns (white) that differ from those who aren't hypnotized (black) and from those who aren't hypnotized but are told to pretend their left hand is paralyzed (dark gray).

Hypnotized
 Unhypnotized
 Unhypnotized and pretending



In hypnotized subjects told to move their left, "paralyzed" hand, the motor cortex routed signals to the precuneus, an area involved in mental imagery and memory about oneself. Pretenders (dark gray) did not use the precuneus.

A small experiment described by **Das** demonstrated the possibility of the development of a state of inhibition (drowsiness) in human subjects by monotonous application of sound and light stimuli in a generally monotonous laboratory condition. Pavlov had demonstrated similar phenomena on dogs. The results of the experiment suggested that such a development of inhibition improved with practice and could correlate positively with an increasing degree of hypnotizability. Similar experiments were done in 1956 by V. Jonchev and K. Cholakov.

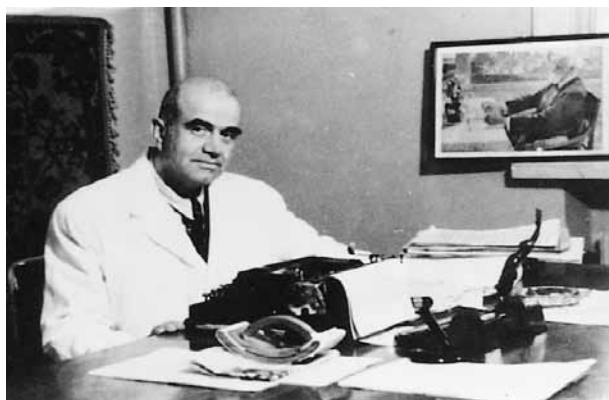
Degree of hypnosis by the idea of A. Forel

(cited in "Curative Hypnosis" by V. Jonchev, p. 26)

Degree of hypnosis	Somnolencia	Hypotacsia	Somnambulism
	The lightest sleep	Middle (Lethargy)	The deepest degree
Conscious	decreased	More deeper	Quality change
The ability to resistance	He could resist to the hypnotist	He could not resist to the hypnotist, he fall asleep in the pose that was given by the hypnotist.	He could not resist and did everything that the hypnotist commands.
Eyes	He could open his eyes.	He can not open his eyes.	He could not open his eyes.
Muscle tonus	He could have a control over his muscles.	Catalepsy he could not control his muscles.	He has no muscle tonus.
Movements	The movements are limited	He could not move and feels his body heavy.	He has no will to move.
Memory after awaking	He has a memory	He has a memory	Amnesia

The author's examination supported Pavlov's view of hypnosis that it could be a state of partial or selective inhibition. Of course some authors have the opposite opinion and did not agree with this theory about hypnosis. Some of the basic moments in Cholacov's explanation of his therapeutic method of decapsulation is based on Pavlov's studies.

Psychophysiological Decapsulation of Kiril Cholakov

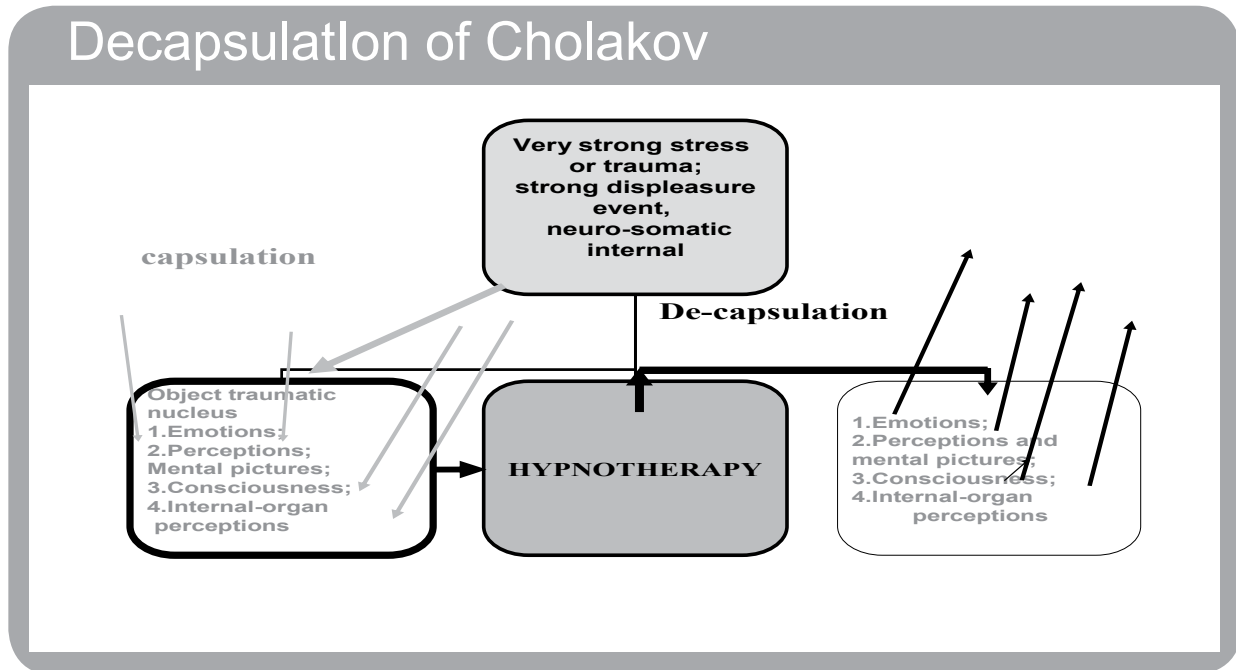


K. Cholakov is the 1st head of the Department of Psychiatry and Medical Psychology in MU-Plovdiv.

His monograph "***Psychophysiological decapsulation as a causal method for the treatment of psychoneurosis***" (1939) is one of his services to the science. According to him psycho-neuroses are caused by serious life events that are deeply capsulated in our unconscious. When the stress is very strong our consciousness is narrow.

In this field of vision could be concentrated not only the psychic trauma, but some somatic symptoms that supported the patient during the trauma (heart-rate, pain, pale, tremor, increased/decreased blood pressure and s. o.) and various perceptions, emotions, that formed s.c. by him **object-traumatic nucleus**.

This nucleus is the only thing that took place in our conscious. Some time around this nucleus in our conscious could be saved some subjects of the surround that could stay there together with the traumatic nucleus in our peripheral consciousness. They have thin associative connections with the object traumatic nucleus. They are s. c. **out-traumatic remainder**.



The term “**capsulation**” according to Cholakov is something that is out of our consciousness in physiological and psychic aspect, but it often remembers to the person that it is presented in our consciousness. Its presence may provoke some unpleasant emotions and feelings that could escalate as a neurosis. Its emotional charge is very strong and stays isolated as a foreign body/substance in our psychic life. This event is not an ordinary event for our life. The most strange fact is that we can not remember anything from this event, but it troubles our personality in a very terrible and unpleasant way.

The psychic capsulation could be formed by two main factors as:

1. strong and very unpleasant experience/servive;
2. an internal personal gain predisposition.

Decapsulation – it is the ability by the method of hypnosis to reproduce these unpleasant moments and again to experience/suffer the event that disturbed our psychic life. The idea is to reproduce the event and to deblokade this pathological capsula that had occupied our consciousness.

Decapsulation could be realized by the method of hypnosis. The patient must experience the event. The degree of the affect of the 1st hypnotic séance is the strongest, whereas the strength and the intensity of the symptoms became weaker with each next séance. After the 10-12 séance the patient feels well and free from this event.

Case Ina – Ina is a widow. She is 63 years old. She finished special economy school in her native town. She had one brother. After her education she began to work as an economist in a builder company. There she recognized with her future husband, who worked as a book-keeper in the same company. They had a good family. They had one child that continued the family tradition. Her 1st depressive episode was when she was 33 years old. She was hospitalized for a period of 1 year. She was treated with various antidepressants and electro-convulsive therapy. After her recovery she continued to work in the same company.

From time to time she received some depressive symptoms, but her improvement came without hospitalization. About 15 years ago, when she was 45 years, her husband died. She took some antidepressants and she recovered at home, without hospitalization. She continued to work in the same company after she went on pension. The president was very satisfied from her work. She was very perfect and correct servant. They gave her a chance to buy out a flat very profitably. She was very satisfied as she stepped back her family flat to her son. She worked very hard for the company. Since several months in October she did not feel well. She wanted to leave the company, but the president did not permit. She became very anxiety, she could not sleep, she had no strength and it was not possible to continue to work. One day she came to the clinic and said to me:

“I am very depressed. I had many problems on my working place. It is not possible to continue to work in the same firm. Please I must be hospitalized, I am afraid that I could make a suicide. The psychiatry is my saving island. I am in a deep Hole. I can not see any light in the tunnel. I have never been so badly since 30 years ago, when I was hospitalized for the 1st time. I want to leave the firm, but they did not agree. I know some secrets of the company and may be they are afraid of this fact. I can not sleep. I had nightmares, and I can not sleep without the use of any sedative drugs. I do not want to meet with my friends. I stopped to go to the church each Sunday. My daily walk is only to the working place and than I return back to home. I have no appetite. In the morning I drink only a cup of tea. I begin to use the previous antidepressant drugs, but till now there is no effect. It is terrible, please you must help me. For me You are like my God...”

During the conversation she was very sad and her tears appeared in her eyes. She was hospitalized. For a period of 3 months she was treated with various antidepressant drugs, but without any effect. Only her sleep was improved. One day weeping she entered the room and said: “Please doctor, I would like to make me hypnosis. The 1st time my improvement came after hypnosis.” I tried to explain her that she was very intelligence, and she knows the reason for her depression, so it is not necessary to use this method. But she wanted. Than we begin. On the 1st séance I introduced in hypnosis. I began to count from 1 to 10 and pleased her to breathe deeply and to exhale. After that I continued with monotonous voice to make a relaxation of the various parts of her body. When she was in the 2nd phase of Forel I pleased her to tell me one name, one day of the week, one date and month. She said the name Nikolai, day Friday, 16th o'clock on the 19th of October. My next question was: “Who is Nikolai and what had happen on this date and hour” She began to breathe deeply, tears appeared in her eyes, her hands trembled, began to weep. Than she said to me: “This is the name of my husband. He died just on this date and this hour. I was there. He received heart stroke, all doctors came, they did everything to save him, but it was impossible. I saw everything. I could not do anything to help him. Since this day he is a part of me. My consciousness is like an apple. He occupies the right part of the apple, whereas my “Ego” is in the left part. He is always a part of me, and I can not be free from him. It is terrible. I can not continue to live any more in this way...” Just now, after the hypnosis for me was clear, that the reason for her depression were not the problems of her working place, but the problems were connected with he husband’s death.

So this could be explained by Freud’s work from 1917 “Mourning and Melancholia” (German: Trauer und Melancholie). In this essay Freud postulated that mourning and melancholia are similar but different responses to loss. In mourning, a person deals with the grief of losing of a specific love object, and this process takes place in the conscious mind. In melancholia, a person grieves for a loss he is unable to fully comprehend or identify, and thus this process takes place in the unconscious mind. Mourning is considered a healthy and natural process of grieving a loss, while melancholia is considered pathological.

Having in mind Freud's work the conclusion is that she did not finish her mourning stage of her husband. Even he had died 15 years ago like a foreign body he was a part of her Ego,

That is why decapsulation in this case was very important:

- it permitted us to understand the problem – all patient's complains were connected with her working place, whereas the real problem was connected with her husband's death;
- decapsulation will help the patient to discharge from her husband's Ego and to improve her quality of life and to be able to live like a normal person.

During the séances she had to reproduce the episode of her husband's death, and progressively to reduce his presence in her Ego. After the 10th séance she said: "Now he is only a little stick, but I can not throw it away". After the 12th séance she said: "He is like a little point, but can not throw it away from my conscious. It is very difficult, I try but I can't" than I pleased her to try again. After that she said "At last, I did it. I throw this point out of my conscious." Than I added: "Please now shut the hole, and never permit this point to return back". "It is very difficult, I can not, how can I do it... now I succeed, I shut the hole".

After hypnosis she recovered and about 5 years she did not need any psychological and psychiatric support.

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XXIV. RARE SYNDROMES

**When s.o. is engaged to Psychiatry, he would never divorced with it.
Todor Tashev**

Psychiatry is one of the most interesting medical disciplines. That is why I agree with the words of my professor Tashev. The most specific for our patients is that each of them has a specific clinical picture. Each patient must be discussed as an individual unit. When I decided to write the part about "Rare syndromes" I was astonished by the fact that their number is more than the often spread syndromes in our ordinary psychiatric practice.

In the group of rare diseases and rare syndromes could be included these disorders that their prevalence in the general population is about of near 2%. To be considered rare syndrome most of these diseases affect only a few people, some time 1 in 2,000 persons, and some time less a dozen cases (1 in 100,000 or even 1 in 1,000,000). The medical practitioners often are not recognized with these rare diseases or syndromes. According to O. Bonnot, R. Lucanto and David Cohen more than 250 medical units have been certified in various domains of rare diseases, primarily genetic anomalies, neurodevelopment and s. o. It was very difficult for s. b not only to enumerate all of them, but to determine on them in various subgroups.

It is known that the clinical picture during the various centuries and in the various societies could be changed. The exogenous factors such as individual, social, family, religious and s.o. norms could influence the clinical pictures of the patients. Their clinical symptoms and syndrome varied not only during the centuries but in the various cultures.

So we could determine several main groups of rare syndromes.

I. Culture-bound syndromes;

II. Syndromes caused by various genetic abnormalities;

III. Syndromes connected with our perceptions;

IV. Syndromes connected with sleep disturbances;

V. Some other syndrome not any where classified.

I. Culture determined syndromes;

In medicine, anthropology and psychiatry a culture-bound syndromes, known also culture-specific syndromes or folk illness are a combination of somatic and psychiatric symptoms with some specific signs that were caused by their culture and religion. They have some typical features even their cultural specific signs most of them have some common characteristic due to their primitivism of the ancient cultures. The number of their names is more than 100 but the most common psychiatric reactions are connected with dissociative disorders. So the description of these symptoms were connected with their strange and not adequate behavior, some times it is foolish, they are very anxiety, various visual, auditory and tactile hallucinations), crying, jumping, consciousness, they could jump naked in the snow when the temperature is (-30 degree), they could eat their faecal excrements or could have elements of cannibalism.

In order to avoid the antropophagy they used special rituals and dancing and the main idea is even when they have nothing to eat never to eat human meat. Another fear of the primitive population is connected with their transformation in wild animal (wolf, fox, and tiger) or a ghost. Some of them were declared for persons who could make a contact with the dead persons. In the Middle Centuries of Europe some persons, mainly females, were declared for witches, as they said to the others that they had contact with the Devil and they described the Devil. All of them were burned out in front of the other people. About 200,000 of persons in Western Europe were burned out in that period of time and their number was bigger than the number of the males that were killed during the war. In the same period of time the fire-dancing in Bulgaria and shamans were emphasized among the people as they could help the ill persons (Some of these traditions are described in Part III.1 "Perceptions", p. 29-30).

The period of necromancy in Western Europe begins with Jeane d'Ark. There are many hypothesis about her personality, but only one of them could explain her psychic state (visual and auditory hallucinations, and her remarkable hardness that is not typical for females (see part III.1, pp 30-31). Here could be mentioned persons with ESP (extracensory perceptions) as Nostradamus (see part III.1, pp 33-34).

Some culture-specific syndromes involved somatic symptoms (pain or disturbed function of a body part), while others were purely behavioral. Some culture-bound syndromes appeared with similar features in several cultures, but with locally-specific traits, such as penis or breast panics; the patients were afraid that their penis/breast could disappear in their body.

A culture-specific syndrome is not the same as a geographically localized disease with specific, identifiable, causal tissue abnormalities, such as kuru or sleeping sickness, or genetic conditions limited to certain populations. It is possible that a condition originally assumed to be a culture-bound behavioral syndrome is found to have a biological cause; from a medical perspective it would then be transformed into another nosological category.

Even their roots came from the most ancient cultures only some of them were included in DSM-IV. So the term culture-specific syndrome is included for the 1st time in 1994 in DSM-IV. Some of their clinical symptoms could be compared with some of the contemporary psychoses and neuroses as schizophrenic disorder, affective and neurotic disorders.

They could be found in various districts of the world – China, Canada, America, India, Japan and s.o. As their number is too large we shall stress only on some of them that are more spread and known till now.

The idea is to put a light of some of the rare syndromes that we meet in our clinical practice. Some of them are in the past. Here will be described some syndromes that are not so rare but the ordinary persons does not pay them any attention and does not think that they are psychiatric or psychological problem. Some syndromes as Moris syndrome, Stockholm syndrome and s. o. were described in the various parts of the textbook. That is why here they would be only mentioned.

Below are given some of the various names of culture-specific syndromes:

Hi-Wa itck; **Susto**; Ataque de Nervios; Falling Out Blacking out; Whitigo – Windigo; Hi-Wa itck; Sickness; Pica; Grisi-siknis; Ghost Sickness; Yaun – Myanmar; Cycto = espanto, perdida del alma, chibin; Cabin Fever; Mal de Pelea; Proun ahn-feck-tung; Whitman Syndrome; Locura; tabanka; involuntional paraphrenia; sangue dormido "sleeping blood"; Hmong; hwa-byung or wool-hwa-bung; shin-byung; Ojo-See Mal de Ojo; Hwa-byung; Shin-byung divine illness; gi-gong; P'a Leng; Wind Illness; Yi-ping; shenjian shuairuo; Koro Shenjing shaijo; p'a ling Wind Illness (wei han zhen – frigophobia; Oi-gong Tai Chi; qi-gong; Shenkui; dhat and jiryau; sukra prameha; Dhat (jiryau); Shinkeishitsu; Taijin kyofusho; Zar; Ainu, Aynu, Aino, Imu – Ainu; Mali-mali; Lapp panic; Myiachit; Ikota; Uqamairineq; Hsieh-ping; Bah-tschi (bah-tsi, baah-jii); Rok-joo SuUdu; Ashanti psychosis; Amafufunyana Zulus & Xhosas; Baridi; Cafard or Cathard; Hafrikan; Bangungut; Voodoo Shoo Shoo; Screaming Seaman; Alien Abduction Syndrome; Karoshi; Hikikomori; Kitsunetsuki disease kitsune-tsuki; Taijin-kyofu-sho Tanijin kyofusho; Mal de ojo (devil eye); Mal Puesto; Mal Vientos bad wind; Narahatiye qalb; Ufufuyane; iich'aa – Navaho; Rootwork; Jumping Frenchmen of Maine Syndrome; Kuru; Brain Fog /Fog/.

Jumping Frenchmen of Mein

The Jumping Frenchmen of Maine were first found in the northern regions of Maine, and were first described by George Beard in 1878. Beard had a unique interest in unusual disorders and took the opportunity to observe the endemic in Maine. He recorded “startle, jumping and tic-like behaviors among the French Canadians and lumberjacks who lived near Moosehead Lake in northern Maine. Their origin is unknown. The syndrome entails an exaggerated startle reflex, which may be described as an uncontrollable “jump”; individuals with this condition can exhibit sudden movements in all parts of the body. Jumping Frenchmen syndrome shares symptoms with other startle disorders. Beard reported for individuals who obeyed any commands given suddenly and were not given specially to them. There were described incidents of persons with this disorders that damaged themselves. Other symptoms that were registered to these persons were echolalia (repeating vocalizations made by other persons) and echopraxia (repeating movements made by other persons). The real reason for jumping Frenchmen syndrome is unknown. One of them is connected with genetic conditions. Later in 1885 Jilles de la Tourette included it in the typology of “convulsive tic illness”. Beard in 1980 made a description of a patient with this syndrome. One man who was sitting on a chair with a knife in his hand suddenly heard a command to throw the knife and he immediately threw it in the opposite ledger. When the commands are said loudly and quickly they could not oppose to them. In one case one man who could not swim immediately jumped in the sea and died.

Wendigo Psychosis: Normal Folks in a Man-Eating Frenzy

The Wendigo is a mythical monster that is featured in the folklore of some northern Native American and Canadian tribes. They all describe it as a “malevolent, cannibalistic, supernatural being of great spiritual power, associated with winter, coldness, famine and starvation.” Basically, it’s what vampires were before Anne Rice hand-stitched giant pussies into their mythos. Many tribal societies were familiar with cannibalism, having to eat human flesh during dire periods of starvation and all, but sometimes the guilt and fear associated with the act was so great that it drove them insane. When you end up snacking on a dude, it’s not hard to imagine yourself as a kind of monster. After all, isn’t it better to see yourself as a mythical beast than just a hungry guy with low standards?

The running amok:

The term “running amok” is known, but the word “amok” is Malaysian, and originally described elephants going mad and separating from their herd. At that point the animal would run wild destroying, fighting, and making sweet crazy furious love to anything in its way, pretty much just re-enacting an average day in Sean Connery’s life. And it is in Malaysia where the condition began cropping up in humans as well. In 2000 about 13 separate cases of people “running amok” were reported, during which 11 people were murdered and 29 more were wounded. That sounds a little scary, but just look at the bright side: those numbers tell us that yes, Malaysia may indeed be a terrifying place to live, but they, at least only about 80 percent of the randomly triggered psychopathic berserkers are competent enough to succeed at murder.

Unlike the Wendigo it could be explained with their culture, but undoubtedly one can draw a line between things going on in their culture and spontaneous madness. There is no such clear-cut explanation for running amok. Some experts connect it with drug abuse, alcoholism, heat, internal parasites and s. o.

Dhat Syndrome: Ejaculation Anxiety

Dhat Syndrome, seen pretty much in India and nowhere else, doesn't need a fancy setup to seem bizarre: it's semen-loss anxiety. Dhat sufferers believe they are leaking semen (not like dripping into their pants, they think they're losing it when they urinate) and that this loss is weakening them both mentally and physically. Dhat sufferers are very worried about keeping as much semen as they possibly can inside of their bodies, which is the exact opposite goal of every other man in the world, who pretty much think of their sperm like the end of a garage sale: as long as you're willing to take it, you can have as much of it as you can carry. To understand Dhat Syndrome, you must first consider traditional Hindu beliefs: food converts to blood, which converts to flesh, which converts to bone marrow and the marrow is eventually converted into semen. It is said that it takes 40 days for 40 drops of food to be converted to one drop of blood, 40 drops of blood to one drop of flesh and so on. To put it into terms you can understand, basically it takes 73 burritos to make just one sperm. At the very least, that's a lot of cash; you can see why they really want to keep it.

Paris Syndrome:

Paris syndrome (French: *Syndrome de Paris, Pari shōkōgun*) is a transient psychological disorder encountered by some individuals visiting or vacationing in Paris or elsewhere in Western Europe. It is characterized by a number of psychiatric symptoms such as acute delusional states, hallucinations, feelings of persecution (perceptions of being a victim of prejudice, aggression, or hostility from others), derealization, depersonalization, anxiety, and also psychosomatic manifestations such as dizziness, tachycardia, sweating, and others. Similar syndromes include Jerusalem syndrome and Stendhal syndrome. This is a psychiatric breakdown that tends to happen in Japanese tourists when the city of Paris doesn't live up to its romanticized image.



1. The main reasons for this syndrome are:

2. *Language barrier that make communications difficult;*
3. *The great expectations of what the person has read about Paris and the great wish to see, to make photos and film of everything;*
4. *Cultural difficulties between Japanese and Frenchmen;*
5. *The person is disappointed by his idealistic imagine of Paris – the town of love described in many poems and songs for Paris.*
6. *The tiredness after the long travel;*
7. *Their biological rhythm is disturbed. There is a 24-hour help line run by the Japanese embassy to help Japanese tourists suffering from this condition.*

Each year about 12 persons suffered from this disorder. The clinical picture to some of them is with paranoid delusions and auditory hallucinations. The clinical picture could be provoked even when they again go to Paris. The therapy for them is to return back to Japan.

Jerusalem syndrome

Jerusalem syndrome is a group of mental phenomena involving the presence of either religiously themed obsessive ideas, delusions or other psychosis-like experiences that are triggered by a visit to the city of Jerusalem. It is not endemic to one single religion or denomination but has affected Jews, Christians and Muslims of many different backgrounds.



Jerusalem syndrome has previously been regarded as a form of hysteria, referred to as “Jerusalem squabble poison”, or “*fièvre Jerusalemienne*”. It was first clinically described in the 1930s by Jerusalem psychiatrist Heinz Herman, one of the founders of modern psychiatric research in Israel. Whether or not these behaviors specifically arise from visiting Jerusalem is debated, as similar behaviors have been noted at other places of religious and historical importance such as Mecca and Rome (see Stendhal syndrome). It is known that cases of the syndrome had already been observed during the Middle Ages, since it was described in the itinerary of Felix Fabri and the biography of Margery Kempe.

Many cases were described in the literature during the 19th century. According to Bar-EI *et al.* the panic connected with various legends of the end of the world at the approach of the year 2000, large numbers of otherwise normal visitors might be affected by a combination of their presence in Jerusalem and the religious significance of the millennium. Some of these visitors had a special need of psychiatrist and even they had to be hospitalized. There was established that the number of the visitors that needed a psychiatric help was increased during the year 2000.

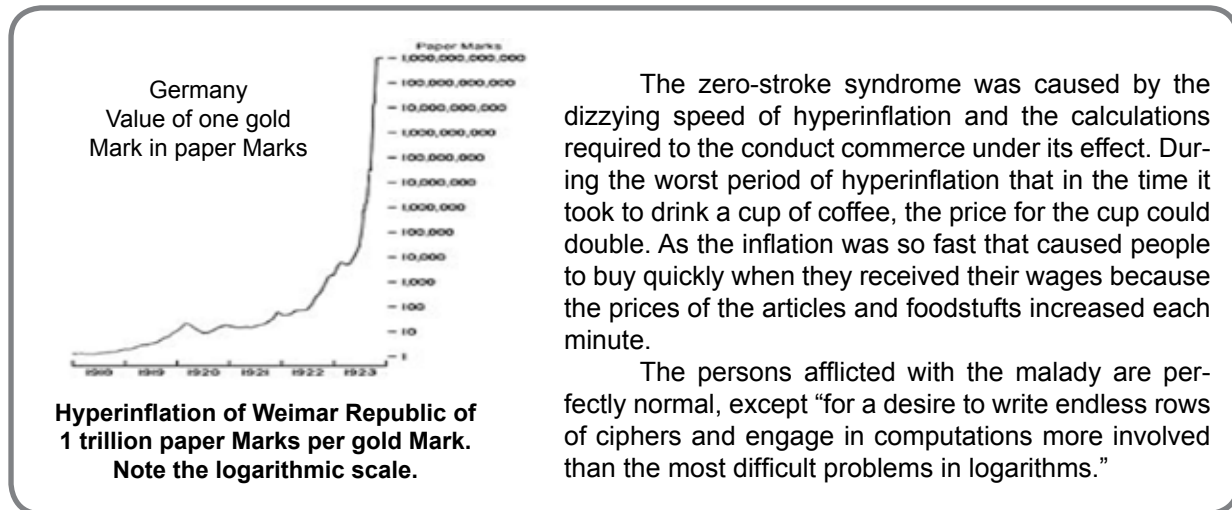
Bar-EI *et al.* reported 42 such cases over a period of 13 years, but in no case were they able to actually confirm that the condition was temporary. The psychosis is characterized by an intense religious character and recovery after a few weeks. It could be putted in the group of “brief psychotic episode”.

The classical Jerusalem syndrome contains the counted symptoms:

- Anxiety, agitation, nervousness and tension;
- They prefer to be alone and to be far from the group or the family;
- A need to be clean and pure: obsession with taking bath and showers; compulsive fingernail and toenail cutting;
- They often prepared white toga-like gown from the hotel bed-linen;
- They shout psalms or verses from the Bible, or to sing hymns;
- Some of them leave the hotel. They were found several kilometers far from the hotel and said that some of the saint spoke to them and leaded them on this place;
- Some time they pray in front of many persons to one of Jerusalem’s holy place;

Zero stroke

Zero stroke – is a syndrome that appeared during the hyperinflation in the Weimar Republic (1921-1924). This syndrome was characterized by the desire of the patients to write endless rows of zeros, which were referred to as ciphers. Germany, 1923: bank-notes had lost so much value that they were used as wallpaper.



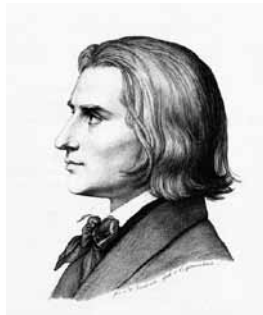
After the Treaty of Versailles, which formally ended World War I in 1919, Germany faced a damaged economy and a requirement to pay immense war reparations to the Allies. At the beginning of 1921, the German currency was relatively stable at about 60 Marks per US Dollar, but inflation rapidly increased after August 1921, and the Mark fell to less than one third of a cent by November 1921 (approx. 330 Marks per US Dollar).

Zero stroke is the nervous affliction of book-keepers who grow dizzy from the number of ciphers that could be set in a row after the integers before German marks were sufficiently numerous to come within hailing distance of real money. Cashiers, bookkeepers, and bankers were reportedly the most prone to this affliction. Besides a compulsion to write endless strings of zeros, individuals that suffered from this condition would reportedly become confused when referring to numbers and would state that they were ten billion years old or had forty trillion children.

Lisztomania (Phenomenon)

Lisztomania or **Liszt fever** was the intense fan frenzy directed toward Franz Liszt during his performances. It was characterized by a hysterical reaction to Liszt and his concerts.

This is an intense hysteria that were described by the fans of famous pianist Franz Liszt during his performances. It was reported that Liszt’s playing raised the mood of the public to a level of mystical ecstasy. Admirers of Liszt would swarm over him, fighting over his handkerchiefs and gloves. Fans would wear his portrait on brooches and cameos. Women would try to get locks of his hair, and whenever he broke a piano string, admirers would try to obtain it in order to make a bracelet. Some females admirers would even carry glass phials into which they poured his coffee dregs. Liszt once threw away an old cigar stump in the street under the watchful eyes of an infatuated lady-in-waiting, who reverently picked the offensive weed out of the gutter, had it encased in a locket and surrounded with the monogram “F.L.” in diamonds, and went about her courtly duties unaware of the sickly odour it gave forth.



The term “Lisztomania was introduced by Heineq who wrote: “What is the reason of this phenomenon? The solution of this question belongs to the domain of pathology rather than that of aesthetics”. A more modern example would be Beatlemania.

Diogenes syndrome = Syndrome Plyushkin = hoarders;**Compulsive hoarding disorder**

For the 1st time hoarders was documented in US by tv-series in the period of 2009-2013. Hoarders were developed by accident. The original concept was realised by tv-show connected with the problems of these persons. Each hoarder had a psychologist-plus-organizer/cleaning specialist combination lead a group of cleaning professionals, family, friends and relatives of the hoarder in conducting a two to three-day sessions to clean and to put in order everything. The idea is how to lean them not only to clean but to change their manner of thinking, their habit and the ability to part with some unnecessary subjects, books, animals, flowers.

Definition – hoarding (hōrd) is a supply or store of something held or hidden for future use or a collection or supply, as of memories or information that one keeps to oneself for future use, to accumulate a hoard of his money in a box under the bed or to hide them in the mattress on which he is sleeping. Some individuals begin this trait at earlier ages (in their teens) and it has nothing to do with any form of dementia. However, later in life, the dementia may intensify hoarding for the individual. Hoarding tends to surface for individuals as they encounter anxiety about their current situation, what they've lost in the past or what they are afraid of losing in the future. The hoarding process is a part of their security system and a sense of self preservation.

Plyushkin syndrome

- 1.They hold a large number of items: junk mail, old catalogs and newspapers; worn out cooking equipment; clothes that “might” be worn one day; broken things/trash, to provide with various kind of food.
2. Typical is their home clutter – beds, kitchen, tables, chairs, unusual bathrooms, animals feces collected in areas of the home, tubs, giant bags, showers and s. o. that cannot be slept in;
3. Their clutter and mess is at a point where it can cause illness, distress, and impairment. As a result, they do not allow visitors, such as relatives, members from the family, friends, they are at risk of fire, falling, infection or eviction, often feeling depressed or anxious due to the clutter.

Book-hoarding

The term “animal hoarding” refers to the compulsive need to collect and own animals for the sake of caring for them results in accidental or unintentional neglect or abuse. Most hoarders of animals fall victim to their good intentions and end up emotionally overwhelmed, socially isolated, and ultimately alienated from family and friends. Persons with animal hoarding have a larger than usual numbers of animals. Compulsive animal hoarding can be characterized as a symptom of a disorder rather than deliberate cruelty towards animals. Hoarders are deeply attached to their pets and find it extremely difficult to let them go. They are harming their pets by failing to provide them with proper care. It is very difficult to make them to refuse from their lovely animals and specially when they were giving names of the animals.

Hoarders tend to believe that they provide the right amount of care for their pets, but they never did any immunizations and consultations with any veterinary doctor. The problem causes immense suffering for both animals and people. It also creates great expense for local animal shelters and may require regional and to find homes for large numbers of animals.

Obsessive-compulsive disorder:

1. The hoarding is driven by fear of contamination or superstitious thoughts.
2. The hoarding behavior is unwanted or highly distressing.
3. The individual shows no interest in the hoarded items.
4. Excessive acquisition is only present if there is a specific obsession with a certain item.

Hoarding was classified as a separate disorder in **DSM-5** in 2013, Hoarding behaviors were considered symptoms of **Obsessive Compulsive Disorder (OCD)**.

Positron emission tomography (PET) scan – shows that the effectiveness of long-term treatment have shown that the cerebral glucose metabolism patterns seen in OCD hoarders were distinct from the patterns in non-hoarding OCD. The most notable differences in these patterns was the decreased activity of the dorsal anterior cingular gyrus, a part of the brain that is responsible for focus, attention and decision making.

History about hoarder syndrome

The roots of hoarding come from ancient Greece and are connected with the name of **Diogenes of Sinope**. Diogenes was born in the Greek colony of Sinope on the south coast of the Black Sea. He believed that to make good things were better revealed in action than in theory. He used his **simple life-style** and behaviour (which arguably resembled poverty) to criticize the social values and institutions of what he saw as a corrupt or at least confused society. In a highly non-traditional fashion, he had a reputation of sleeping and eating wherever he chose and took to toughening himself against nature. He declared himself a cosmopolitan and a citizen of the world rather than claiming allegiance to just one place.

From *Life of Diogenes*: “Diogenes taught by living example. He tried to demonstrate that wisdom and happiness belong to the man who is independent of society and that civilization is regressive. He scorned not only family and political social organization, but also property rights and reputation. He even rejected normal ideas about human decency. Diogenes is said to have eaten in the marketplace, urinated on some people who insulted him, defecated in the theatre, and masturbated in public. When asked about his eating in public he said, “If taking breakfast is nothing out of place, then it is nothing out of place in the marketplace. But taking breakfast is nothing out of place, therefore it is nothing out of place to take breakfast in the marketplace.” On the indecency of him masturbating in public he would say, “If only it were as easy to banish hunger by rubbing my belly.”

**Diogenes sitting in his tun.
Painting by Jean-Léon Gérôme (1860)**

The stories told of Diogenes illustrate the logical consistency of his character. He inured himself to the weather by living in a clay wine jar belonging to the temple of Cybele. He destroyed the single wooden bowl he possessed on seeing a peasant boy drink from the hollow of his hands. He then exclaimed “Fool that I am, to have been carrying superfluous baggage all this time!” It was contrary to Athenian customs to eat within the marketplace, and still he would eat there, for, as he explained when rebuked, it was during the time he was in the marketplace that he felt hungry. He used to stroll about in full daylight with a lamp; when asked what he was doing, he would answer, “I am just looking for an honest man.” Diogenes looked for a human being but reputedly found nothing but rascals and scoundrels.

Stepan Plyushkin is a literature hero in Nikolai Gogol's novel "*Dead Souls*". He is a landowner who obsessively collects and saves everything he finds, to the point that when he wants to celebrate a deal with the protagonist Chichikov, he orders one of his serfs to find a cake that a visitor brought several years ago, scrape off the mold, and bring it to them. At the same time, his estate is incredibly inefficient; the cut wheat rots on the ground and any potential income is lost.

Plyushkin had two daughters and a son, but upon the death of his wife he became a suspicious miser. The youngest daughter died and the other two siblings left home. When his daughter Aleksandra Stepanovna visited him several times with gifts and grand-children, but received no money in return, she stopped visiting. When Chichikov met Plyushkin, he mistakes him for the steward due to his ignoble dress.

Today in Russia, and in Bulgaria, the name "Plyushkin" is semi-humorously applied to people who collect and amass various useless things, a behavior known as compulsive hoarding. Sometimes the terms "Plyushkin symptom" or s. c. "Plyushkin syndrome" are used to describe such kind of people as him. He was famous with his miserliness, very parsimonious, living in misery, squalor, he preferred the fruits to be decomposed but not to give them to the his slaves or to the poor persons, he preferred to eat spoiled foods, bread and wine that is with the taste of vinegar.



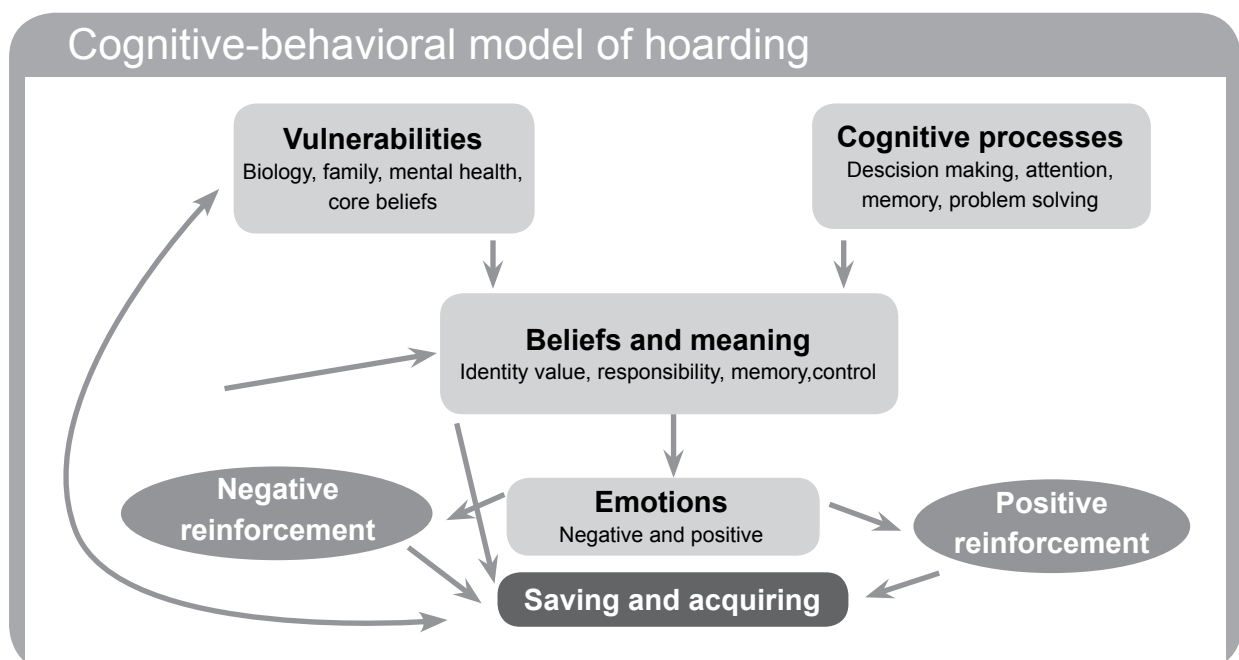
Plyushkin, drawing by Pyotr Boklevsky (1895).

In this group could be included patients with:

- **Shopping-mania:** these persons when are distress need to decrease their anxiety by buying various not necessary things. Most of the packets are on different places of the room and they never open them.

- **Flower mania** – the mania of buying various floweres and most of their money they use for buying various expensive flowers, books and journals for flowers.

It is almost impossible these patients to overcome with that problem alone so they need a special psychiatric and psychological support. The psychiatrists offered various therapeutic methods and the best of them is cognitive-behavioral model of hoarding (see the figure).



Lycanthropy syndrome

Clinical lycanthropy is defined as a rare psychiatric syndrome that involves a delusion that the affected person can transform into, has transformed into, or is a non-human animal. Its name is connected to the mythical condition of lycanthropy, a supernatural affliction in which humans are said to physically shapeshift into wolves.



For the 1st time an ancient physician Paulus Aegineta from Alexandria attributed lycanthropy to melancholy, or an “excess of black bile”. Later in 1563 Weyer wrote that “werewolves suffered from imbalance in their melancholic humor and exhibited the physical symptoms of paleness”, a dry tongue and a great thirst” as well as sunken, dim and dry eyes. The affected persons believe that they were in a process of transformation into animals - or some areas were fox, for others lions, for Europe – wolf. According to their belief this transformation is at full-moon. Their behaviour is strange, they are very aggressive and even could have elements of vampirism – to drink the blood of their victims. The affected persons reported for behavior disturbances, hallucinations and delusional identification with wolf. But a psychiatrist explained it with damage of their mental state (psychosis, depression, personality disorders).

A study on lycanthropy from the McLean Hospital reported on a series of cases and proposed some diagnostic criteria by which lycanthropy could be recognised:

- A patient reports in a moment of lucidity or looking back that he sometimes feels as an animal or has felt like one.
- A patient behaves in a manner that resembles animal behavior, for example crying, grumbling, or creeping.

According to DSM-IV Criteria Lycanthropy is thought to be a cultural manifestation of schizophrenia due to the first 4 symptomatic criteria:

- The 1st – delusions (the person believes that he/she turns into an animal);
- The 2nd – hallucinations (vivid hallucinations of being an wolf);
- The 3rd – disorganized speech; they could produce the sound of an animal (the patient will begin to howl like an wolf);
- The 4th – disorganized behavior; they act like an wolf.

Case – Simeon is at the age of 28 years. He was the 2nd child in the family. He decided to become a dentist and was a student in University for Dental medicine. When he was the 5th year of the university he had no interest in medicine and wanted to study economy. He went to study in Sofia but had difficulties with the examinations. He left the university. As a student in dental medicine he had serious problems with his psychic state. Some times he felt very angry, but he had never been aggressive. One of his symptoms was that he had the feeling that is an animal and specially a wolf. He said during the examination: “Doctor I avoid the people as some time I think that I am a wolf. When I was a child, near 10 years old my aunt often told me that I am rough, clumsy, gawky very big and heavy man and my walk is clumsy, my voice is rough too, so these phrases she repeated several times and I begin to think that my colleagues avoided me as I look like a wolf. Some time some of my relatives told me: “Why do you look at us like an animal?” So the idea that I am an animal from time to time appears in my mind. Some time I think that they did not think that I am a wolf, but when I am not well these thoughts troubled me”. During the last 7 years he was treated with various antidepressants, neuroleptic, but he did not improve. He had a poor quality of life – no friends, no girl-friend and he could not finish university and could not work.

False pregnancy (pseudocyesis; phantom pregnancy; hysterical pregnancy)

False pregnancy is 1 of 10,000 women but In USA 1 of 22,000 pregnant females. It is the appearance of clinical or subclinical signs and symptoms of pregnancy when the organism is not actually pregnant. False pregnancy is often spread in veterinary medicine (particularly in dogs, wolfs, cats, swines and mice). Among humans is less common. It is caused by changes in endocrine system of the body. The symptoms are of the true pregnancy. About 18% of the pregnant women with false pregnancy at the 1st examination by specialists were not diagnosed.

Cases of pseudocyesis have been documented since antiquity. **Hippocrates** gave the first written account around 300 B.C. when he recorded 12 cases of women with the disorder.

The main signs and symptoms are:

- Amenorrhea;
- Morning sickness;
- Breast changes, tender or secretion;
- Vomiting;
- Abdominal distension;
- The movements of the fetus;
- Menstrual irregularity (50-90%);
- Labor pains;
- Pigmentation of linea alba (very rare);
- Uterine enlargement;
- Softening of the cervix.



Among the various theories, none of them is universally accepted because of the complex involvement of cortical, hypothalamic, endocrine and psychogenic factors. A special attention must be given on the stress that influenced on the hypothalamo-pituitary-adrenal axis.

Case – Jane is 40 years old. She is not married. She lives in a little village. She finished her education in Plovdiv' university, but she could not find a suitable job. Her mother is a very primitive person, but her father is very intelligent. She had never had a sexual contact. About 18 months ago she separated with her friend. When they separated she was in his car. He said to her that when he returned from Turkey a magistral girl was in the car. Two month later she remembered that a little wet handtowel was on the seat and she thought for a while that he had sex with this girl and he throw out his sperm in it. Even she was with trousers she thought that a part of his sperma could get into her body linen. Her menstrual cycle stopped and ealy in the morning she felt sickness, she vomited, her breast were increased and appeared secretion, she noticed pigmentation on linea alba and her abdomen was increased. She was sure that is pregnant even the results of the test, echo-graphiia and gynecological status were negative. She was afraid to leave the house and to travel because she had to born her child. When she came in the consulting room according to her she was in the 18th month and was sure that is pregnant. She wanted to use hypnosis and to suggest her that she is not pregnant. The 1st séance was very dramatic and she made a decapsulation. She was in deep hypnosis, 3rd phase by Forel. She had no memory for the dialog between us. I was sure that decapsulation by Cholakov will help her. After the séance she was very well and was sure that she will through away these absurd ideas. She used antidepressant and I adviced her to take carbamazepine. The next meeting was after an week. She could not sleep well.

She did not want to continue hypnosis and we had reproduction by Kristnikov. As she was very anxiety later I included in neuroleptis – Rispolept (2-4 mg. daily), CBZ – 600 ;g. and Biflox 1 tabl. After the 6th month the idea that she is pregnant disappeared. During the therapy her mother was advised to use sedative drugs too.

Some other syndromes

1. Stockholm syndrome (pp 174-179);

- Family SS (pp 175-177);
- Religion SS (p 178).

2. Syndromes connected with our thinking:

- **Truman Show Delusion:** People with this delusion believe that they are the center of a imaginary television show.
- **Capgras Delusion:** This is the belief that a loved one has been replaced by an identical impostor.
- **Fregoli Delusion:** A rare disorder where a person believes that many people are actually a single person with the ability to disguise themselves.

3. Catatonic stupor – see pp 44, 233.

4. Syndromes caused by various genetic abnormalities; In this group are included the next syndromes:

- Jil de la Tourette syndrome – see pp 300-301 ;
- Moris syndrome – about Jeane d’Ark (pp 30-31)

5. Syndromes connected with sleep disturbances;

- **Klein-Levin syndrome = the Sleeping Beauty syndrome** (see p. 301);
- **Sleep-walking** (see p. 128).

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APPENDIX - I

PSYCHOMETRIC AND PSYCHOLOGICAL TESTING

Most of the commonly used testing of various psychic spheres plays an integrative role in the clinical practice.

CLASSIFICATION OF TESTS

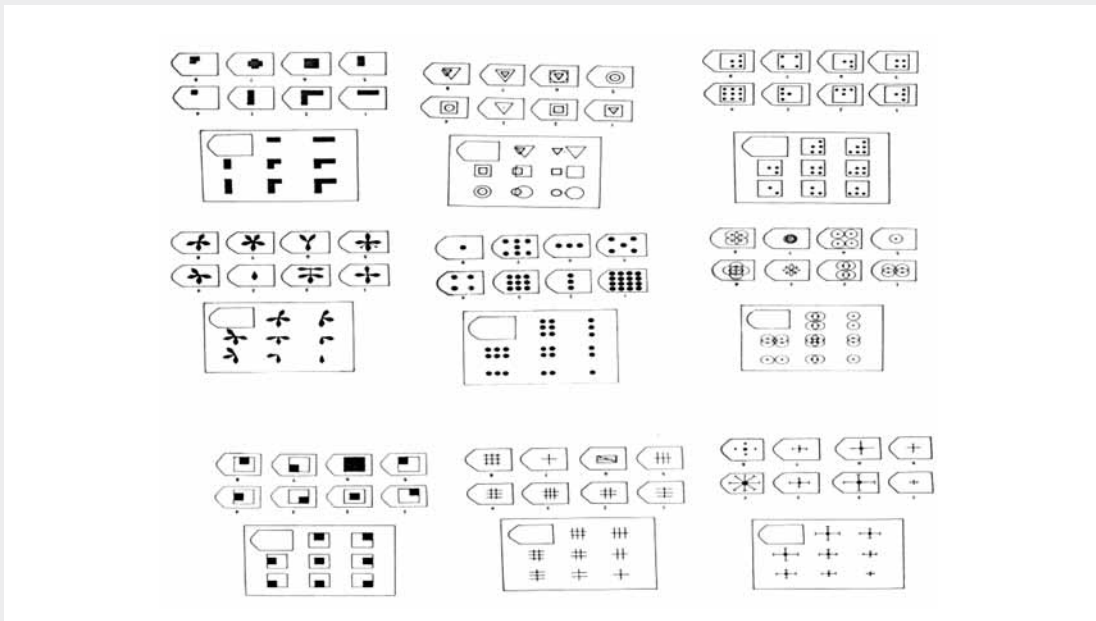
OBJECTIVE TESTS	They are pencil-and-paper tests based on specific items and questions. They are subjected to mathematical or statistical analysis. MMPI is one of the objective tests.
PROJECTIVE TESTS	They present stimuli whose meanings are not obvious. The studied person must give meaning to the stimulus in accordance with their inner needs, drives, abilities and defenses.
INDIVIDUAL OR GROUP TESTS	These tests can be administrated individually or given to a group. Group tests are used for pilot study of anxiety, neurotic and depressive disorders. They are usually easily administered, and save time.

TESTS FOR INTELIQENCE

The ability of the person to assimilate factual knowledge and to recall either recent or rdistant events, to reason logically, to abstract to the literal and the literal to the abstract.

A. Binet (1905)	For the first time he had the idea to introduce the concepts of the mental age, which is the average intellectual level of a particular group	$IQ = \frac{M. A.}{C. A.} \times 100$ <p>M. A. = mental age C. A. = chronological age IQ - the intelligence quotient</p>
J.Raven -1939	60 tasks 5 series	Raven's Progressive Matrices require the patient to select from a multiple-choice pictorial display the stimulus that completes a design in which a part is omitted (See some of the figures on the next page)
Wechsler Adult Intelligence Scale (WAIS) (1939)	It is the best and the most used intelligence test in clinical practice today. The German version of this test is known as Hamburg Adult Wechsler Intelli-gence Scale (HAWIS). The Bulgarian adaptation of the test is done by A. Kokoshkarova	<p>Construction of the test: it contains 11 subtests (six of them are verbal and 5 - nonverbal). There is a scale for children aged between 5 and 15 years, for children aged 4 to 6 % years and for adolescents.</p> <ul style="list-style-type: none"> • Information - it covers general information and general knowledge, • Comprehension - the ability of the person to understand social judgement by asking about proverbs, • Arithmetic - the ability to do arithmetic or other calculation and specially deduction. • Abstract ability - the person must explain the similarity between two things. • Vocabulary - the person must define about 35 vocabulary words of increasing difficulty.

SOME OF RAVEN'S PROGRESSIVE MATRICES



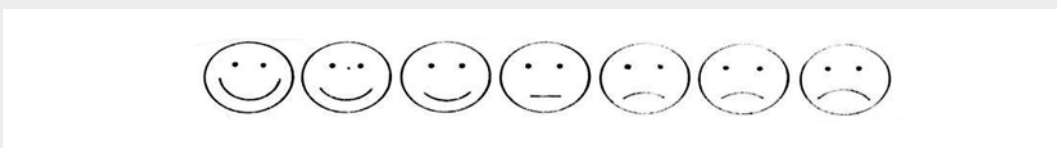
FUNG'S SCALE FOR ANXIETY



Standardize values

- No 1, 2, 3, 4 – no anxiety;
- No 5 – little anxiety;
- No 6, 7 – moderate anxiety;
- No 8 – very heavy anxiety

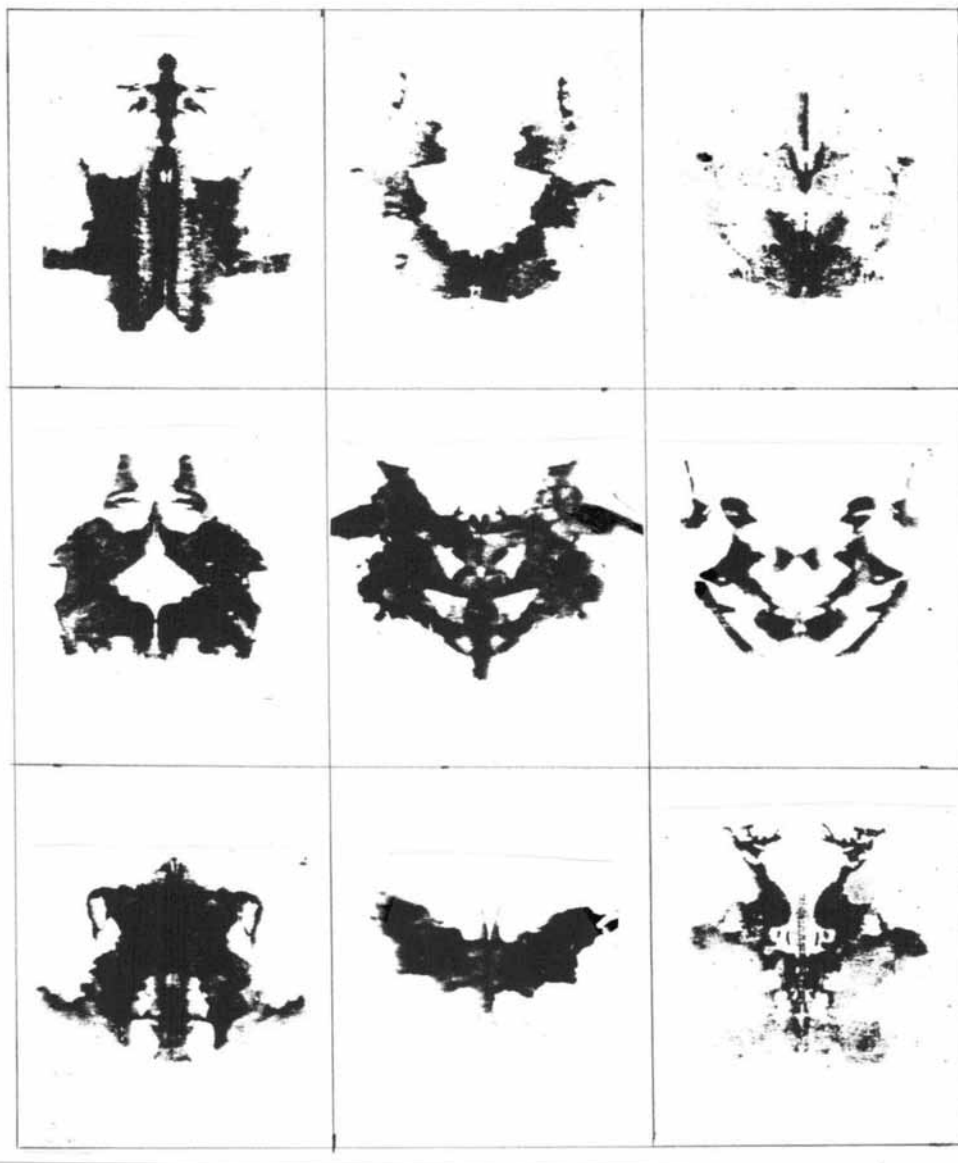
Which face expresses: disgust, fear, anger, happiness, sadness, surprise?



RORSCHARCH TEST

Rorscharch test is one of the most popular psychological tests, devised by Herman Rorscharch, a Swiss psychiatrist. It consists of 10 inkblots of varying designs and colors. They are shown to the subject with the request to interpret them. This test gives us information about the intellectual and emotional processes, the degree of personality integration, variability in mental functioning. It is particularly useful in diagnosis and prognosis.

This test is popular in Bulgaria too. In the next pictures are given the plates of Rorscharch test that could be found in A. Kokoshkarova's book "Psychological exploration of personality in clinical practice", 1984, pp. 81-85).



GOODENOUGH'S DRAWING TEST

This test is known as **drawing - of - a - man** test and it was created by Goodenough in 1926. The aim of the author was to establish child's intelligence by drawing a man. It was the first test used for intelligence.

DRAW - A- PERSON TEST

Karen Machover in 1949 outlined a system of interpretation that was correlated with clinical diagnosis. It is a method of personality analysis and it is based upon the interpretation of the drawings of the human figure. It was used for children aged between 3 and 10 years. The test is easily administered. Details of the test correlate with intelligence.

A variation of this test is to draw or to compare each person of the family with an animal.

CASE A 10 year old child was pleased to compare each person of the family with an animal He loved his grandmother and mother, but he was hurt by his father very often. He said: "My grandmother is like a squirrel, because she is works very much, my mother is like a deer, because she is very kind, my grandfather is a lion because he is my defender, but my father is a terrible monster, and I am afraid of him.

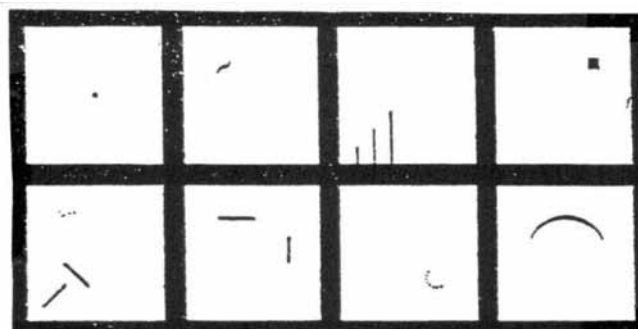
CASE A 5 years boy -1 asked his parents to tell me what the relations between them were. Their answer was All right. We have no problems" The answer of the child was: "My mother is like a cat, whereas my father is like a hound. I am like a hare at home."

HAUSE-TREE-PERSON TEST

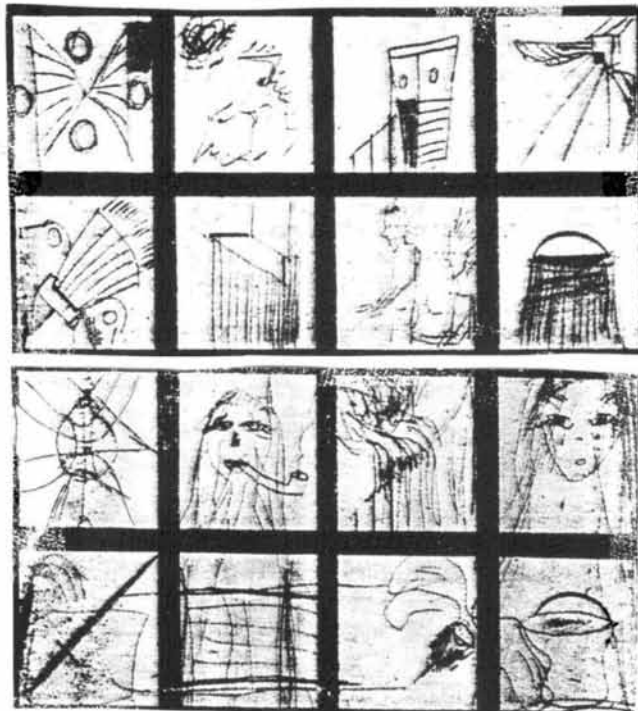
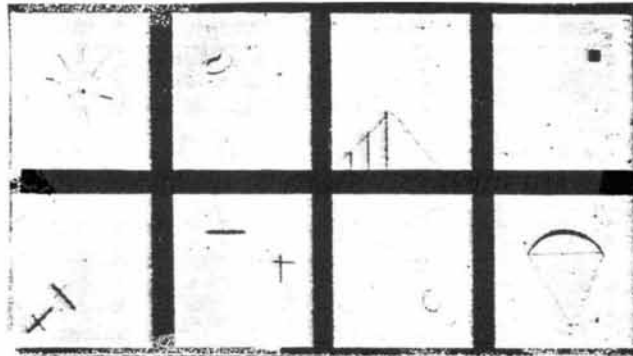
It is a modification of the other two upper tests. Minkowska used some variations in child practice as: "Draw your family!", "My family and I". These pictures express the interpersonal relations between the members of the family and the place of the child. The figure of a deeply frustrated child is very little. A 10 year old child drew his father as a devil. He was afraid of him. because he was beaten many times by his father.

WARTEGG'S DRAWING TEST

Wartegg's drawing test is a method of personality analysis based upon the interpretation of drawings of various figures or ornaments on 8 squares. The author puts different elements and the subject must finish the picture (see the figures). The test is used usually in clinical psychology to distinguish between "normal" from subjects with psychiatric disorders as schizophrenia, neurotic and affective disorders (manic and depressive episodes).



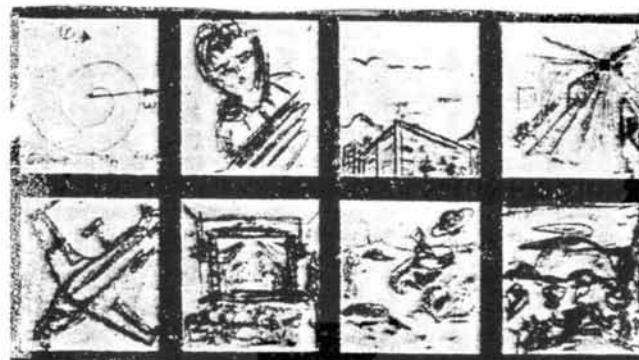
Wartegg's test in depressed patients



Wartegg's test in schizophrenic patient

Wartegg's test in manic patient

Wartegg's test in patient with fantastic ideas



This pictures are taken by A. Kokoshkarova, "Psychological Exploration of personality in Clinical Practice", 1984, pp 135-137

Testing memory

A. Luria test (a Russian neuropsychologist): the aim of the test is the manner and the ability of the person to learn 10 short words, without any logical connection between them. The psychologist reads the words and the examined person must repeat them. The process is repeated 5 times. This gives us an impression about the fixation of the memory. After an hour the examined person is asked again to remember and to repeat the same 10 words. It speaks about the process of reproduction.

To learn (memorise) 10 words.

Name.....**male/female**.....**age**.....

Date.....**Dg**:.....

Words	river	bread	door	brother	water	chair	horse	sponge	needle	copper	Unnecessary words
I.											
II.											
III											
IV.											
Afrer 1 hour											
VI.											

(see K. Metchkov, 1993 in “The Psychic”, p. 111)

The curve of memory could be express as a percentage, using the following formula:

$$\text{The success of reproduction} = \frac{\text{the number of the reproduced words} \times 100}{\text{the average success of fixation memory}}$$

How can we measure memory in everyday practice?

We pleased the patient to repeate 5 words that the psychologist/psychiatrist would tell.

1st stage (to determine the short memory):

We shell count 5 words of towns, flowers, rivers, countries and s.o. (for example: Sofia, Plovdiv, Varna, Bugras, Stara Zagora). Then he must repeat the same words in the same order.

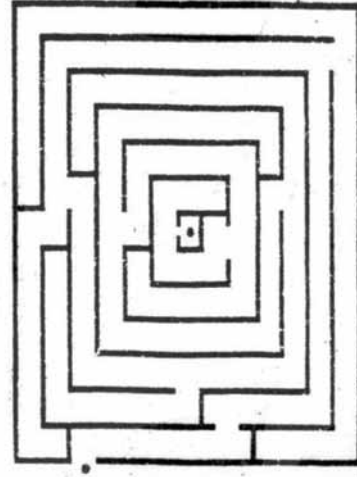
2nd stage (to determine his intelligence) – his abilitied to make an interpretation of several proverbs as: “Do not look like a bull in an iron shop”, “Too many cooks will spoil the soup”.

3rd stage (to study his long memory) – after 10 minutes he must repeat the first 5 words.

Attention could be evaluated by a number of widely used clinical procedures. One of them are Platonov's interweaves and Shapuis' labyrinth.

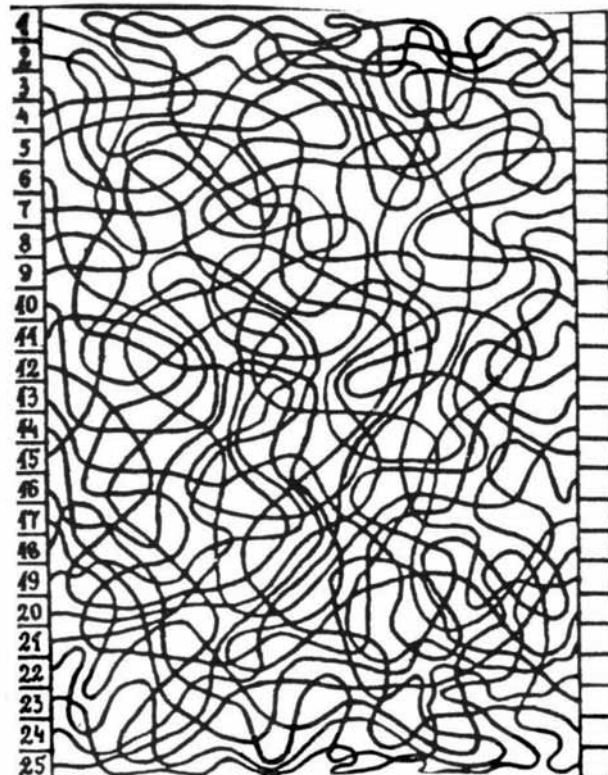
SHAPUIS'S LABYRINTH

The author of this method was indicated in 1959 by the Swiss psychologist Fredery Shapuis. The original blanks are 4.5 cm to 4.5 cm. It is given in several variations – the examined must find out the shorest way from outside to the centre and the opposite – to show the way from the inside outwards.



PLATONOV'S INTERWEAVE LINES

On the blank space are given 25 lines and the task of the examined person is to show the right way to each line.



See K. Metchkov in "The Psychic. Essence, structure, organization, disorganization", 1993; p. 97-98; 106-107

PERSONALITY ASSESSMENT

Personality, comes from “persona” - a Latin word.

Many psychologists today use various tests and techniques in trying to understand personality.

<p>THE MINNESOTA MULTIPHASIC PERSONALITY INVENTORY TEST (MMPI) – 1937</p>	<p>It is one of the most widely used psychological measuring devices. It was developed by Starke Hathway, a psychologist and Charney McKinly, a psychiatrist. The authors chose approximately 500 items. The answers were “true” or “False” to each. This test can draw the profile of the test taker, using 10 standard clinical scales.</p>	<p>Scales:</p> <ol style="list-style-type: none"> 1. Lie Scale, 2. Infrequency Scale, 3. Suppressor Scale, 4. Clinical Scales: <ul style="list-style-type: none"> • Hypochondriasis • Depression, • Hysteria, • Psychopathic deviance, • Masculinity-Femininity, • Paranoia, • Psychasthenia, • Schizophrenia, • Hypomania, • Social introversion. 5. Special: <ul style="list-style-type: none"> • Anxiety, • Repression, • Ego Strength, • McAndrews Alcoholism Scale. 										
<p>EYSENCK PERSONALITY INVENTORY</p>	<p>Developed by Hans Eysenck</p>	<p>It is a self-assessment personality scale - measures emotionality versus stability, extraversion versus introversion, tough-mindedness, sociability, the lie scale.</p>										
<p>MCMII MILON CLINICAL MULTIAXIAL</p>	<p>Developed by Theodor Millon et al. in 1970. It is a 175 items</p>	<ol style="list-style-type: none"> 1. Schizoid – the symptoms include some of the diagnostic criteria for a schizoid personality. 2. Avoidant – dysphoria, alienation, hypersensitivity, 3. Dependent – gives the characteristics of initiation difficulties, poor self-image, 4. Histrionic – lability of affect, immaturity, a dissociative cognitive style, sociability, 5. Narcissistic – they measure the presence of an inflated self-image, expansive thinking, 6. Antisocial (aggressive)-power-oriented life-style, inability to benefit from punishment. 7. Compulsive – cognitive constriction and behavioral rigidity, 8. Passive-aggressive-labile affect, interpersonal ambivalence, S. Schizotypal – the presence of eccentricity, social detachment, nondelusional autistic thinking, depersonalization, emptiness. P. Paranoid – vigilant mistrust, <p>Clinical Syndromes – (Axis I)</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">1. Anxiety,</td> <td style="width: 50%;">6. Drug abuse,</td> </tr> <tr> <td>2. Somatoform,</td> <td>7. Psychotic thinking,</td> </tr> <tr> <td>3. Hypomanic,</td> <td>8. Psychotic depression,</td> </tr> <tr> <td>4. Dysthymia,</td> <td>9. Psychotic delusions.</td> </tr> <tr> <td>5. Alcohol abuse.</td> <td></td> </tr> </table>	1. Anxiety,	6. Drug abuse,	2. Somatoform,	7. Psychotic thinking,	3. Hypomanic,	8. Psychotic depression,	4. Dysthymia,	9. Psychotic delusions.	5. Alcohol abuse.	
1. Anxiety,	6. Drug abuse,											
2. Somatoform,	7. Psychotic thinking,											
3. Hypomanic,	8. Psychotic depression,											
4. Dysthymia,	9. Psychotic delusions.											
5. Alcohol abuse.												

Rating scales

Rating scales can measure mood and behavior, anxiety, discrete thoughts such as obsessive thoughts and temperamental.

The most frequently assessed items of the scales are the classic items from the mental status. The items include mood disturbances, various psychic and vegetative complaints. Some authors prefer to give the degree of the expression of the symptoms and they can follow their psychic condition in dynamic.

The most popular is the Hamilton Depressive Rating Scale. It consists of 21 symptoms. The most used is the short variation of the scale that consists of 17 symptoms.

Hamilton Rating Depression Scale

name..... age....Date.....Address.....

Dg 0 - if absent. 1 - if doubtful. 2 - mild. 3 - moderate, 4 - severe

1. Depressive mood..... 0,1,2,3,4
2. Guilt 0,1,2,3,4
3. Suicide..... 0,1,2,3,4
4. Insomnia initial..... 0,1,2,
5. Insomnia middle 0,1,2.
6. Insomnia delayed 0,1,2,
7. Work and Interest 0,1,2,3,4
8. Retardation (speech, concentration, vigor)..... 0,1,2,3,4 (N 4 is for stupor)
9. Agitation..... 0,1,2,3,4
10. Psychic anxiety..... 0,1,2,3,4.
11. Somatic anxiety 0,1,2,3,4
12. Somatic gastrointestinal 0,1,2,
13. Somatic general..... 0,1,2,
14. Genital symptoms..... 0,1,2,
15. Hypochondriasis 0,1,2,3,4
16. Insight..... 0,1,2,3,4
17. Loss of weight..... 0,1,2,
18. Sense of illness 0,1,2, (yes, somatic disorder, no)
19. Diurnal variation (morning, afternoon, evening) – underline when the patient is better.
- 20, Depersonalization -..... 0,1,2,3,4
21. Paranoid symptoms..... 0,1,2,3,4,
22. Obsessive symptoms 0,1,2.

HAMILTON ANXIETY RATING SCALE (HAM-A)

Below is a list of phrases that describe certain feeling that people have. Rate the patients by finding the answer which best describes the extent to which he/she has these conditions. Select one of the five responses for each of the fourteen questions.

	Not Present	Mild	Moderate	Severe	Very Severe
1. Anxious mood. Worries, anticipation of the worst, fearful anticipation, irritability.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Tension. Feelings of tension, fatigability, startle response, moved to tears easily, trembling, feelings of restlessness, inability to relax.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3 Fears. Of dark, of strangers, of being left alone, of animals, of traffic, of crowds.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4 Insomnia. Difficulty in falling asleep, broken sleep, unsatisfying sleep and fatigue on waking, dreams, nightmares, night terrors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5 Intellectual. Difficulty in concentration, poor memory.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6 Depressed mood Loss of interest, lack of pleasure in hobbies, depression, early waking, diurnal swing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7 Somatic (muscular). Pains and aches, twitching, stiffness, myoclonic jerks, grinding of teeth, unsteady voice, increased muscular tone.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8 Somatic (sensory) Tinnitus, blurring of vision, hot and cold flushes, feelings of weakness, pricking sensation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9 Cardiovascular symptoms Tachycardia, palpitations, pain in chest, throbbing of vessels, fainting feelings, missing beat.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10 Respiratory symptoms. Pressure or constriction in chest, choking feelings, sighing, dyspnea.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11 Gastrointestinal symptoms. Difficulty in swallowing, wind abdominal pain, burning sensations, abdominal fullness, nausea, vomiting, borborygmi, looseness of bowels, loss of weight, constipation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12 Genitourinary symptoms. Frequency of micturition, urgency of micturition, amenorrhea, menorrhagia, development of rigidity, premature ejaculation, loss of libido, impotence.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13 Autonomic symptoms Dry mouth, flushing, pallor, tendency to sweat, giddiness, tension headache, raising of hair.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14 Behavior at interview Fidgeting, restlessness or pacing, tremor of hands, furrowed brow, strained face, sighing or rapid respiration, facial pallor, swallowing, etc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Sources

1. Hamilton M. The assessment of anxiety states by rating. *Br J Med Psychol* 1959; 32:50-55.
2. Maier W, Buller R, Philipp M, Heuser I. The Hamilton Anxiety Scale: reliability, validity and sensitivity to change in anxiety and depressive disorders. *J Affect Disord* 1988;14(1):61-8.
3. Borkovec T and Costello E. Efficacy of applied relaxation and cognitive behavioral therapy in the treatment of generalized anxiety disorder. *J Clin Consult Psychol* 1993; 61(4):611-19.

HAMILTON ANXIETY RATING SCALE (HAM-A);**Patient Information: Patient Date Day Mth.**

1. Anxious mood – this item covers the emotional condition of uncertainty about the future, ranging from worry, insecurity, irritability and apprehension to overpowering dread, and find difficult to control. However, the worrying still is about minor matters.
- 0 – The patient is neither more or less insecure or irritable than usual.
- 1 – Doubtful whether the patient is more insecure or irritable than usual.
- 2 – The patient expresses more clearly to be in a state of anxiety, apprehension or irritability, which he may thus without influence on the patient's daily life.
- 3 – At times the anxiety or insecurity is more difficult to control because the worrying is about major injuries or harms which might occur in the future. Has occasionally interfered with the patient's daily life.
- 4 – The feeling of dread is present so often that it markedly interferes with the patient's daily life.

2. Tension – it is inability to relax, nervousness, bodily tensions, trembling and rest-less fatigue.

- 0 – The patient is neither more nor less tense than usual.
- 1 – The patient seems somewhat more nervous and tense than usual.
- 2 – Patient expresses clearly unable to relax and full of inner unrest, which he finds difficult to control, but it is still without influence on the patient's daily life.
- 3 – The inner unrest and nervousness is so intense or frequent that it occasionally interferes with the patient's daily work.
- 4 – Tensions and unrest interfere with the patient's life and work at all times.

3. Fears (This item includes fear of being in a crowd, of animals, of being in public places, of being alone, of traffic, of strangers, of dark etc. It is important to note whether there has been more phobic anxiety during the present episode than usual).

- 0 – Not present.
- 1 – Doubtful whether present.
- 2 – The patient experiences phobic anxiety but is able to fight it.
- 3 – It is difficult to fight or overcome the phobic anxiety, which thus to some extent interferes with the patient's daily life and work.
- 4 – The phobic anxiety clearly interferes with the patient's daily life and work.

4. Insomnia (This item covers the patient's subjective experience of sleep duration and sleep depth during the three preceding nights. Note: Administration of hypnotics or sedatives is disregarded).

- 0 – Usual sleep duration and sleep depth;
- 1 – Sleep duration is doubtfully or slightly reduced (e.g. due to difficulties falling asleep), but no change in sleep depth;
- 2 – Sleep depth is also reduced, sleep being more superficial. Sleep as a whole is somewhat disturbed;
- 3 – Sleep duration and sleep depth is markedly changed. Sleep periods total only a few hours per 24 hours;
- 4 – Sleep depth is so shallow that the patient speaks of short periods of slumber or dozing, but no real sleep.

5. Difficulties in concentration and memory (This item covers difficulties in concentration, making decision about everyday matters, and memory).

- 0 – The patient has neither more nor less difficulty in concentration and/or memory than usual.
- 1 – Doubtful whether the patient has difficulty in concentration and/or memory.
- 2 – Even with a major effort it is difficult for the patient to concentrate on his daily routine work.
- 3 – The patient has pronounced difficulties with concentration, memory, or decision making, e.g. in reading a newspaper article or watching a television programme to the end.
- 4 – During the interview the patient shows difficulty in concentration, memory or decision making.

6. Depressed mood (This item covers both the verbal and the non-verbal communication of sadness, depression, despondency, helplessness and hopelessness).

- 0 – Not present.
- 1 – Doubtful whether the patient is more despondent or sad than usual, or is only vaguely so.
- 2 – The patient is more clearly concerned with unpleasant experiences, although he still lacks helplessness or hopelessness.
- 3 – The patient shows clear non-verbal signs of depression and/or hopelessness.
- 4 – The patient remarks on despondency and helplessness or the non-verbal signs dominate the interview and the patient cannot be distracted.

7. General somatic symptoms (Muscular weakness, stiffness, soreness or real pain, more or less diffusely localized in the muscles, such as jaw ache or neck ache).

- 0 – The patient is neither more nor less sore or stiff in the muscles than usual.
- 1 – The patient seems somewhat more stiff or sore in the muscles than usual.
- 2 – The symptoms have the character of pain.
- 3 – Muscle pain interferes to some extent with the patient's daily work and life.
- 4 – Muscle pain is present most of the time and clearly interferes with the patient's daily work and life.

8. General somatic symptoms: Sensory (This item includes increased fatigability and weakness or real functional disturbances of the senses, including tinnitus, blurring of vision, hot and cold flashes and prickling sensations).

- 0 – Not present.
- 1 – Doubtful whether the patient's indications of symptoms are more pronounced than usual.
- 2 – The sensations of pressure reach the character of buzzing in the ears, visual disturbances and prickling or itching sensations in the skin.
- 3 – The generalized sensory symptoms interfere to some extent with the patient's daily life and work.
- 4 – The generalized sensory symptoms are present most of the time and clearly interfere with the patient's daily life and work.

9. Cardiovascular symptoms (This item includes tachycardia, palpitations, oppression, chest pain, throbbing in the blood vessels, and feelings of faintness).

- 0 – Not present.
- 1 – No doubt.
- 2 – Cardiovascular symptoms are present, but the patient can still control them.
- 3 – the patient has occasional difficulty controlling the cardiovascular symptoms, which thus to some extent interfere with his daily life and work.
- 4 – Cardiovascular symptoms are present most of the time and clearly interfere with the patient's daily life and work.

10. Respiratory symptoms (Feelings of constriction or contraction in throat or chest, dyspnoea or choking sensations and sighing respiration)

- 0 – Not present.
- 1 – Doubtful whether present.
- 2 – Respiratory symptoms are present, but the patient can still control them.
- 3 – The patient has occasional difficulty controlling the respiratory symptoms, which thus to some extent interfere with his daily life and work.
- 4 – Respiratory symptoms are present most of the time and clearly interfere with the patient's daily life and work.

11. Gastro-intestinal symptoms (This item covers difficulties in swallowing, “sinking” sensation in stomach, dyspepsia (heartburn or burning sensation in the stomach, abdominal pains related to meals, fullness, nausea and vomiting), abdominal rumbling and diarrhea).

- 0 – Not present.
- 1 – Doubtful whether present (or doubtful whether different from usual).
- 2 – One or more gastro-intestinal symptoms are present, but the patient can still control them.
- 3 – The patient has occasional difficulty controlling the gastro-intestinal symptoms, which some extent interfere with his daily life and work.
- 4 – The gastro-intestinal symptoms are present most of the time and interfere clearly with the patient's daily life and work.

12. Genito-urinary symptoms (This item includes non-organic or psychic symptoms such as frequent or more pressing passing of urine, menstrual irregularities, anorgasmia, dyspareunia, premature ejaculation, loss of erection).

- 0 – Not present.
- 1 – Doubtful whether present (or doubtful whether different from usual).
- 2 – One or more genito-urinary symptoms are present, but do not interfere with the patient's daily life and work.
- 3 – Occasionally, one or more genito-urinary symptoms are present to such a degree that they interfere to some extent with the patient's daily life and work.
- 4 – The genito-urinary symptoms are present most of the time and interfere clearly with the patient's daily life and work.

13. Other autonomic symptoms (This item includes dryness of the mouth, blushing or pallor, sweating and dizziness).

- 0 – Not present.
- 1 – Doubtful whether present.
- 2 – One or more autonomic symptoms are present, but they do not interfere with the patient's daily life and work.
- 3 – Occasionally, one or more autonomic symptoms are present to such a degree that they interfere to some extent with the patient's daily life and work.
- 4 – Autonomic symptoms are present most of the time and clearly interfere with the patient's daily life and work.

Child self-report
MOOD AND FEELING QUESTIONNAIRE: SHORT VERSION
 (by Angold & Castello)

This form is about how you might have been or acting recently.
 For each question, please check up (V) how you have been feeling or acting in the past 2 weeks.

- If a sentence is not true about you, check (NOT TRUE);
- If a sentence was some times true, check (SOME TIMES);
- If a sentence was true about you most of the times check (TRUE);
- Score the MFQ as follows:
- Not true = 0;
- Some times = 1;
- True = 2

To code, please use a check mark (V) for each statement	NOT TRUE	SOMETIMES	TRUE
1. I feel miserable or unhappy.			
2. I did not enjoy anything at all.			
3. I felt so tired I just sat around and did nothing.			
4. I was very restless.			
5. I felt I was no good any more.			
6. I cried a lot.			
7. I found it hard to think properly or concentrate.			
8. I hated myself.			
9. I was a bad person.			
10. I felt lonely.			
11. I thought nobody loved me.			
12. I thought I could never be as good as other kids.			
13. I did everything wrong.			

Zung Self-rating Anxiety scale

(For each item below, please check the column which best describes how often you felt or behaved this way **during the past several days**).

	A little of the time	Some of the time	Good part of the time	Most of the time
1. I feel more nervous and anxious than usual.				
2. I feel afraid for no reason at all.				
3. I get upset easily or feel panicky.				
4. I feel like I'm falling apart and going to pieces.				
5. I feel that everything is all right and nothing bad will happen.				
6. My arms and legs shake and tremble.				
7. I am bothered by headaches neck and back pain.				
8. I feel weak and get tired easily.				
9. I feel calm and can sit still easily.				
10. I can feel my heart beating fast.				
11. I am bothered by dizzy spells.				
12. I have fainting spells or feel like it.				
13. I can breathe in and out easily.				
14. I get numbness and tingling in my fingers and toes.				
15. I am bothered by stomach aches or indigestion.				
16. I have to empty my bladder often.				
17. My hands are usually dry and warm.				
18. My face gets hot and blushes.				
19. I fall asleep easily and get a good night's rest.				
20. I have nightmares.				

Standardization of the Greek version of Zung's Self-rating Anxiety Scale (SAS)]. [Article in Greek, Modern] Samakouri M, Bouhos G, Kadoglou M, Giantzelidou A, Tsolaki K, Livaditis M.

	Not Present	Mild	Moderate	Severe	Very Severe
1. Anxious mood. Worries, anticipation of the worst, fearful anticipation, irritability.					
2. Tension. Feelings of tension, fatigability, startle response, moved to tears easily, trembling, feelings of restlessness, inability to relax.					
3 Fears. Of dark, of strangers, of being left alone, of animals, of traffic, of crowds.					
4 Insomnia. Difficulty in falling asleep, broken sleep, unsatisfying sleep and fatigue on waking, dreams, nightmares, night terrors.					
5 Intellectual. Difficulty in concentration, poor memory.					
6 Depressed mood. Loss of interest, lack of pleasure in hobbies, depression, early waking, diurnal swing.					
7 Somatic (muscular). Pains and aches, twitching, stiffness, myoclonic jerks, grinding of teeth, unsteady voice, increased muscular tone.					
8 Somatic (sensory). Tinnitus, blurring of vision, hot and cold flushes, feelings of weakness, pricking sensation.					
9 Cardiovascular symptoms. Tachycardia, palpitations, pain in chest, throbbing of vessels, fainting feelings, missing beat.					
10 Respiratory symptoms. Pressure or constriction in chest, choking feelings, sighing, dyspnea.					
11 Gastrointestinal symptoms. Difficulty in swallowing, wind abdominal pain, burning sensations, abdominal fullness, nausea, vomiting, borborygmi, looseness of bowels, loss of weight, constipation.					
12 Genitourinary symptoms. Frequency of micturition, urgency of micturition, amenorrhea, menorrhagia, development of rigidity, premature ejaculation, loss of libido, impotence.					
13 Autonomic symptoms. Dry mouth, flushing, pallor, tendency to sweat, giddiness, tension headache, raising of hair.					
14 Behavior at interview. Fidgeting, restlessness or pacing, tremor of hands, furrowed brow, strained face, sighing or rapid respiration, facial pallor, swallowing, etc.					

Abstract: Self-rating Anxiety Scale (SAS), introduced by Zung, has been widely used for the detection of anxiety. The present study aims at standardizing the Greek version of SAS. SAS consists of 20 items rated on a 1-4 likert type scale. The total SAS score may vary from 20 (no anxiety at all) to 80 (severe anxiety). 250 four participants, psychiatric patients, physically ill aged 45.40±11.35 years completed the following: (a) a demographic characteristics' questionnaire, (b) the SAS Greek version, (c) the Spielberg's Modified Greek State-Trait Anxiety Scale (STAI-Gr.-X) and (d) the Zung Depression Rating Scale (ZDRS). In conclusion, the SAS Greek version presents very satisfactory psychometric properties regarding its reliability and validity as well. *Psychiatriki*. 2012 Jul-Sep; 23 (3):212-20.

Chari I — Hospital Anxiety and Depression Scale

This questionnaire will help your physician know how you are feeling. Read every sentence. Place an "X" on the answer that best describes how you have been feeling during the LAST WEEK. You do not have to think too much to answer. In this questionnaire, spontaneous answers are more important. Mark only one answer for each question.

A (1) I feel tense or wound up:

- 3 () Most of the time
- 2 () A lot of times
- 1 () From time to time
- 0 () Not at all

D (8) I feel as I am slowed down:

- 3 () Nearly all the time
- 2 () Very often
- 1 () From time to time
- 0 () Not at all

D (2) I still enjoy the things I used to:

- 0 () Definitely as much
- 1 () Not quite so much
- 2 () Only a little
- 3 () Hardly at all

A (9) I get a sort of frightened feeling like butterflies in the stomach:

- 0 () Not at all
- 1 () From time to time
- 2 () Quite often
- 3 () Very often

A (3) I get a sort of frightened feeling as if something awful is about to happen:

- 3 () Very definitely and quite badly
- 2 () Yes, but not too badly
- 1 () A little, but it doesn't worry me
- 0 () Not at all

D (10) I have lost interest in my appearance:

- 3 () Definitely
- 2 () I don't take so much care as I should
- 1 () I may not take quite as much care
- 0 () I take just as much care as ever

D (4) I can laugh and see the funny side of things:

- 0 () As much as I always could
- 1 () Not quite as much now
- 2 () Definitely not so much now
- 3 () Not at all

A (11) I feel restless, as if I had to be on the move:

- 3 () Very much indeed
- 2 () Quite a lot
- 1 () Not very much
- 0 () Not at all

A (5) Worrying thoughts go through my mind:

- 3 () Most of the time
- 2 () A lot of times
- 1 () From time to time
- 0 () Only occasionally

D (12) I look forward with enjoyment to things:

- 0 () As much as I ever did
- 1 () A little less than I used to
- 2 () Definitely less than I used to
- 3 () Hardly at all

D (6) I feel cheerful:

- 0 () Most of the time
- 1 () Usually
- 2 () Not often
- 3 () Not at all

A (13) I get a sudden feeling of panic:

- 3 () Very often indeed
- 2 () Quite often
- 1 () From time to time
- 0 () Not at all

A (7) I can seat at ease and feel relaxed:

- 0 () Definitely
- 1 () Usually
- 2 () Not often
- 3 () Not at all

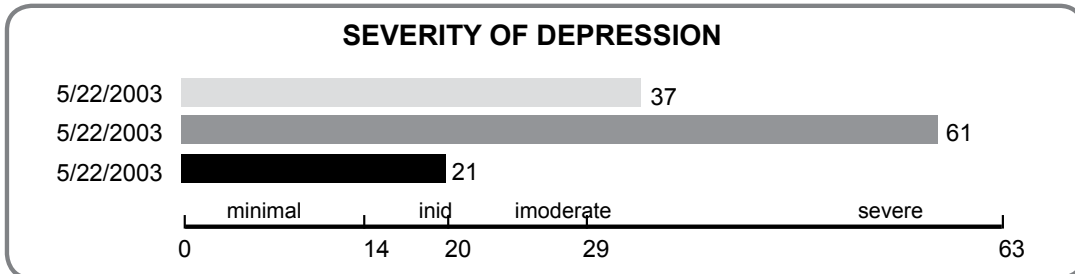
D (14) I can enjoy a good TV or radio program or book:

- 0 () Often
- 1 () Sometimes
- 2 () Not often
- 3 () Hardly at all

Beck Depression Inventory II

Name: Sample Patient Gender: Male
 ID: 123456789 Relation: Never Married
 Education: Less than a high school graduate Age: 69
 Occupation: Student Date: 5/22/2003 9:53:32 AM

BDI-II Score = 21



ITEM	RESPONSE	RATING
1. Sadness	I feel sad much of the time	1
2. Pessimism	I feel more discouraged about my future than I used to be	1
3. Past Failure	I have failed more than I should have.	1
4. Loss of Pleasure	I don't enjoy Things as much as I used to	1
5. Guilty feelings	I feel guilty over many things I have done or should have done	1
6. Punishment feelings	I feel I may be punished	1
7. Self-Dislike	I have lost confidence in myself	1
8. Self-Criticalness	I am more critical of myself than I used to be	1
9. Suicidal Thoughts or Wishes	I have thoughts of killing myself, but I would not carry them out	1
10. Crying	I cry mote than I used to	1
11. Agitation	I feel more restless or wound up than usual	1
12. Loss of Interest	I am loss interested in other people or things than before	1
13. Indecisiveness	I find it more difficult to make decisions than usual	1
14. Worthlessness	I don't consider myself as worthlessness as usual as I used to	1
15. Loss of Energy	I have less energy than I used to have	1
16. Changes in Sleep Pattern	I sleep somewhat more than usual	1
17. Irritability	I am more irritable than usual	1
18. Changes in Appetite	My appetite is somewhat less than usual	1
19. Concentration Difficulty	I can't concentrate as well as usual	1
20. Tiredness or Fatigue	I get more tired or fatigued more easily than usual	1
21. Loss of Interest in Sex	I am less interested in sex than I used to be	1

BDI-II Scoring

The BDI -II is scored by summing the ratings for the 21 items. Each item is rated on a 4-point scale ranging from 0 to 3. The maximum total score is 53.

Special attention must be paid to the correct scoring of the Changes in Steeping Pattern (Item 14) and Changes m Appetite (Item 18)

BECK DEPRESSION INVENTORY SHORT FORM

This is a questionnaire. On this questionnaire are groups of statements. Please read the entire group of statements in each box. Then pick out the one statement in that group that best describes the way you feel TODAY, that is, right now. Tick beside the statement you have chosen. If several statements in the group seem to apply equally well, tick each one.

BE SURE TO READ ALL THE STATEMENTS IN EACH GROUP BEFORE MAKING YOUR CHOICE.

1.
 - a) I do not feel sad
 - b) I feel sad or unhappy.
 - c) I am unhappy or sad all of the time and I can't snap out of it.
 - d) I am so unhappy or sad that I can't stand it
2.
 - a) I am not particularly pessimistic or discouraged about the future.
 - b) I feel discouraged about the future,
 - c) I feel I have nothing to look forward to.
 - d) I feel that the future is hope-less and that things cannot improve.
3.
 - a) I do not feel like a failure.
 - b) I feel I have failed more than the average person.
 - c) As I look back on my life all I can see is a lot of failures.
 - d) I feel I am a complete failure as a person (parent, husband, wife).
4.
 - a) I am not particularly dissatisfied
 - b) I don't enjoy things the way I used to
 - c) I don't get satisfaction out of anything any more
 - d) I am dissatisfied with every-thing.
5.
 - a) I don't feel particularly guilty.
 - b) I feel bad or unworthy a good part of the time.
 - c) I feel quite guilty.
 - d) I feel as though I am very bad or worthless.
6.
 - a) I don't feel disappointed in myself.
 - b) I am disappointed in myself,
 - c) I am disgusted with myself
 - d) I hate myself.
7.
 - a) I don't have any thoughts about harming myself
 - b) I feel I would be better off dead.
 - c) I have definite plans about committing suicide.
 - d) I would kill myself if I could.
8.
 - a) I have not lost interest in other people,
 - b) I am less interested in other people than I used to be
 - c) I have all of my interest in other people and have little feeling for them
 - d) I have lost all of my interest in other people and don't care about them at all.
9.
 - a) I make decisions about as well as ever.
 - b) I try to put off making decisions
 - c) I have great difficulty in making decisions.
 - d) I can't make decisions any more
10.
 - a) I don't feel I look any worse than I used to.
 - b) I am worried that I am looking old or unattractive.
 - c) I feel that there are permanent changes in my appearance and they make me look unattractive.
 - d) I feel that I am ugly or repulsive looking.
11.
 - a) I don't get more tired than usual
 - b) I get tired more easily than I used to
 - c) I get tired from doing anything,
 - d) I get too tired to do anything.
12.
 - a) I can work about as well as before,
 - b) It takes extra effort to get started at doing something,
 - c) I have to push myself very hard to do anything,
 - d) I can't do any work at all
13.
 - a) My appetite is no worse than usual
 - b) My appetite is not as good as it used to be
 - c) My appetite is much worse now
 - d) I have no appetite at all any more

Score: a=0, b=1, c=2, d=3
 Score total: 0-10 = not depressed
 12-18 = depressed
 20+ = very depressed ACTION!

Name:

Date:

Scorer:

JAAF January 2007

http: www.sadness101.com/beck.html

Beck Depression Inventory

Choose the one statement, from among the group of four statements in each question that best describe; how you have been feeling during the past few days. Circle the number beside your choice.

- | | | |
|----|---|--|
| 1 | 0 | I do not feel bad. |
| | 1 | I feel sad, |
| | 2 | I am sad all the time and I can't snap out of it. |
| | 3 | I am so sad or unhappy that I cannot stand it. |
| 2 | 0 | I am not particularly discouraged about the future. |
| | 1 | I feel discouraged about the future. |
| | 2 | I feel I have nothing to look forward to. |
| | 3 | I feel that the future is hopeless and that things cannot improve. |
| 3 | 0 | I do not feel like a failure. |
| | 1 | I feel I have failed more than the average person. |
| | 2 | As I look back on my life, all I can see is a lot of failure. |
| | 3 | I feel I am a complete failure as a person. |
| 4 | 0 | I get as much satisfaction out of things as I used to. |
| | 1 | I don't enjoy things the way I used to. |
| | 2 | I don't get any real satisfaction out of anything anymore, |
| | 3 | I am dissatisfied or bored with everything. |
| 5 | 0 | I don't feel particularly guilty. |
| | 1 | I feel guilty a good part of the time. |
| | 2 | I feel guilty most of the time. |
| | 3 | I feel guilty all of the time. |
| 6 | 0 | I don't feel that I am being punished. |
| | 1 | I feel I may be punished. |
| | 2 | I expect to be punished |
| | 3 | I feel I am being punished. |
| 7 | 0 | I don't feel disappointed in myself. |
| | 1 | I am disappointed in myself. |
| | 2 | I am disgusted with myself. |
| | 3 | I hate myself. |
| 8 | 0 | I don't feel I am worse than anybody else. |
| | 1 | I am critical of myself for my weaknesses or mistakes. |
| | 2 | I blame myself all the time for faults. |
| | 3 | I blame myself for everything bad that happens. |
| 9 | 0 | I don't have any thoughts of killing myself. |
| | 1 | I have thoughts of killing myself but I would not carry them out. |
| | 2 | I would like to kill myself. |
| | 3 | I would kill myself if I had the chance. |
| 10 | 0 | I don't cry anymore than usual. |
| | 1 | I cry more now than I used to. |
| | 2 | I cry all the time now. |
| | 3 | I would kill myself if I had the chance. |
| 11 | 0 | I am not more irritated by things than I ever am. |
| | 1 | I am slightly more irritated now than usual. |
| | 2 | I am quite annoyed or irritated a good deal of the time. |
| | 3 | I feel irritated all the time now. |

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PART 1 - MEMORY LOSS & GENERAL FUNCTIONING

Please darken all squares that describe your loved one's current behaviors:

Recent Memory

- poor recall of recent events, or repeatedly forgets appointments or other important obligations,
- repeats statements or questions during same conversation (can't remember prior statements and/or questions by self or others; can't seem to learn anything new).
- forgets familiar names or faces (can't recall names and/or faces of spouse, children, close associates).
- word-finding disorder (often can't think of the word to use in a sentence, especially nouns of names),
- losing train of thought (often forgets what he/she is talking about in the middle of a conversation).

Long-term Memory

- poor recall of important personal details (forgets own date of birth/age/marriage, death of spouse, etc.).
- confused chronology of life (confused as to who is the oldest sibling/child, or the year of important events)
- poor recall of current age of children and/or spouse (forgets year of birth or approximate age)
- poor recall of history (can't remember details of important historical events that were known previously).
- doesn't pay attention to news anymore (used to be interested and knowledgeable).

Orientation

- confused about personal identity (can't remember married name, or one's role in the current family), repeatedly confused about date/time (can't determine what month or year it is; confuses night & day)
- confused about location (can't identify where they are, or asks to 'go home' when they are at home), any episodes of being lost (confused in familiar areas; lost in a parking lot for more than 15 min).
- asks family members date or time repeatedly, rather than figuring it out independently.

Judgment & Problem Solving

- poor complex task completion (trouble doing 2 things at once, such as writing a phone message while talking; trouble completing tasks with a sequence of steps such as baking a cake or changing oil in the car).
- poor social skills (embarrassing or inappropriate behaviors or speech, or unusual anger outbursts),
- poor procedural memory (trouble remembering how to do something, or how to start a familiar task),
- employment or home management problems (reprimands regarding work; incompetence in home)
- apathy about task demands or competence decline (reduced ability to notice chores, tasks, problems).

Insight and Self Awareness

- poor insight about memory deficits (denial after others have confronted patient with memory problems).
- constantly misplaces or loses personal items (even when family establishes permanent storage spots).
- suspecting thievery (sure that someone is stealing items that have been misplaced),
- blames others when items are lost (says spouse or child misplaced missing wallet, keys, purse, etc.).
- refuses to accept responsibility for consequences of decline in task competence (apathetic).

Community Affairs & Concentration

- recent onset of money management problems (forgets to pay bills; pays too much or pays twice; sends money to sweepstakes, organizations, or charities indiscriminately)
- frequent shopping problems (forgets about needed items, purchases wrong items buys same items repeatedly; refuses to go shopping when it is necessary).
- making change mistakes (hands clerk a \$5 bill when the price is \$3.10; unable to compute change)
- math problems (cannot or will not do simple math computations anymore, such as doubling a recipe),
- apathy regarding financial affairs (little interest in bills, income, budgeting).

Home + Hobbies

- poor driving skills (recent increase in accidents/tickets; weaving in lanes; changing lanes without signaling, tailgating or poor judgment of distances; stepping on gas pedal when braking is required).
- lack of safety (turns on kitchen stove burners but forgets them; poor judgment about danger, frequent falls in familiar areas: medication mistakes or confusion about dosages: refusal to take needed medications).
- poor chore completion (can't complete familiar tasks; poor recognition of important needed chores).
- inadequate cooking or meal preparation (loss of motivation to prepare complete meal; forgetting recipes).
- abandonment of hobbies (withdrawal from familiar activities or social events reduction in competence).

Personal Care

- poor hygiene (reluctance to bath, shave brush teeth; insisting bathing happened when it didn't).
- inappropriate clothing (putting on summer clothes in cold weather, or the opposite; wearing dirty or same clothes repeatedly; putting together bizarre outfits or combinations of clothing).
- poor grooming (can't fix hair, wear makeup, or keep self clean; can't recognize when grooming is needed).
- apathy about hygiene or grooming tasks (can do tasks competently, but used to be careful about them)
- uses poor judgment about hygiene or grooming (often doesn't notice soiled face or clothing; brushes teeth without toothpaste; irons soiled clothing, etc.).

CLINICAL DEMENTIA RATING - modified caregiver version

Adapted from: Berg, Mid senile dementia of the Alzheimer type. Mt. Sinai Journal of Medicine. 55:87-96.

Source: J Am Board Fam Pract © 2005 American Board of Family Practice

Scale of Suicidal Ideation – printable version

Original references:

Beck AT Kovacs M Weissman A. Assessment of suicidal intention: The scale of suicide ideation. *J Consult Clin Psychology*. 1979; 47: 343-352. Beck AT Steer RA Rantieri WF. Scale for suicide ideation: Psychometric properties of a self-report version. *J Clin Psychology*. 1988; 44: 499-505. The scale of suicidal ideation consists of 19 items which can be used to evaluate a patient’s suicidal intentions. It can also be used to monitor a patient’s response to interventions over time.

Item	Response	Points
1. Wish to live	moderate to strong	0
	weak	1
	none	2
2. Wish to die	none	0
	weak	1
	moderate to strong	2
3. Reasons for living/dying	for living outweigh for dying	0
	about equal	1
	for dying outweigh for living	2
4. Desire to make active suicide attempt	none	0
	weak	1
	moderate to strong	2
5. Passive suicidal desire	would take precautions to save life	0
	would leave life/death to chance	1
	would avoid steps necessary to save or maintain life	2
6. Duration of suicide ideation/wish	brief fleeting periods	0
	longer periods	1
	continuous (chronic) or almost continuous	2
7. Frequency of suicide ideation	rare occasional	0
	intermittent	1
	persistent or continuous	2
8. Attitude toward ideation/wish	rejecting	0
	ambivalent indifferent	1
	accepting	2
9. Control over suicidal action/acting-out wish	has sense of control	0
	unsure of control	1
	has no sense of control	2
10. Deterrents to active attempt	would not attempt because of a deterrent	0
	some concern about deterrents	1
	minimal or no concern about deterrents	2

11. Reason for contemplated attempt	to manipulate the environment; get attention or revenge	0
	combination of desire to manipulate and to escape	1
	escape surcease solve problems	2
12. Method: specificity or planning of contemplated attempt	not considered	0
	considered but details not worked out	1
	details worked out and well-formulated	2
13. Method: availability or opportunity for contemplated attempt	method not available or no opportunity	0
	method would take time or effort; opportunity not readily available	1
	method and opportunity available	2
	future opportunity or availability of method anticipated	2
14. Sense of "capability" to carry out attempt	no courage too weak afraid incompetent	0
	unsure of courage or competence	1
	sure of competence courage	2
15. Expectancy/anticipation of actual attempt	no	0
	uncertain not sure	1
	yes	2
16. Actual preparation for contemplated attempt	none	0
	partial	1
	complete	2
17. Suicide note	none	0
	started but not completed; only thought about	1
	completed	2
18. Final acts in anticipation of death	none	0
	thought about or made some arrangements	1
	made definite plans or completed arrange- ments	2
19. Deception or concealment of contemplated suicide	revealed ideas openly	0
	held back on revealing	1
	attempted to deceive conceal or lie	2

Scoring:

The total score for the 19 items is calculated.; Minimum score = 0; Maximum score = 38; Higher scores indicate greater suicidal ideation

You Be Sad?

Seasonal Pattern Assessment Questionnaire

Adapted from Seasonal Pattern Assessment Questionnaire developed by Normal E. Rosenthal, MD, Gary J. Bradt, and Thomas A Wehr, MD, National Institute of Mental Health

1. Some Questions About Depression

In the last year, have you had any single period of time – LASTING ATLEAST TWO WEEKS – in which you had any of the following problems nearly every day? (You may have had several of such periods.) Were there two weeks or more...

When you had trouble falling asleep or staying asleep, or sleeping too much?	Yes	No
When you were feeling tired or had little energy?	Yes	No
When you experienced poor appetite or overeating? Or significant weight gain or loss, although you were not dieting?	Yes	No
When you found little interest or little pleasure in doing things?	Yes	No
When you were feeling down, depressed, or hopeless?	Yes	No
When you were feeling bad about yourself – or that you were a failure – or that you were letting yourself or your family down?	Yes	No
When you had trouble concentrating on things, like reading the newspaper or watching television?	Yes	No
When you were so fidgety or restless that you were moving around a lot more than usual? Or the opposite – moving or speaking so slowly that other people have noticed?	Yes	No
When you were thinking a lot about death or that you would be better off dead, or even thinking about hurting yourself?	Yes	No

**Your emotions and connect more skillfully with others when
you are under pressure.**

1. I act on my beliefs and convictions, even if it makes me unpopular. *This question is required.				
Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
●	●	●	●	●
2. I am able to do what is needed to achieve my goals. *This question is required.				
Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
●	●	●	●	●
3. I am capable of solving most problems that I am faced with. *This question is required.				
Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
●	●	●	●	●
4. I expect good things to happen from my hard work and effort. *This question is required.				
Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
●	●	●	●	●
5. In the future, I expect more good things to happen (rather than bad things). *This question is required.				
Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
●	●	●	●	●
6. It's easy for me to shake off things that have upset me. *This question is required.				
Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
●	●	●	●	●
7. I remain calm under pressure. *This question is required.				
Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
●	●	●	●	●
8. I solve problems effectively under stress. *This question is required.				
Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
●	●	●	●	●
9. I do not make quick judgements that I regret later. *This question is required.				
Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
●	●	●	●	●
10. I can handle whatever comes my way. *This question is required.				
Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
●	●	●	●	●
11. I tend to finish what I start, regardless of setbacks. *This question is required.				
Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
●	●	●	●	●
12. I see pressure situations as more of a challenge (an opportunity to grow and get better) than a crisis (a threat). *This question is required.				
Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
●	●	●	●	●

Test your Emotional Intelligence – Free EQ Quiz

Many studies have shown that those who have **high emotional intelligence** are more successful in both their professional and personal lives. In fact, research from Harvard Business School demonstrated that people with extremely high IQ but low EQ, consistently underperform other people. Test your emotional intelligence by taking our online emotional intelligence test free of charge.

Emotional Intelligence Quiz

Our emotional intelligence quiz describes situations and experiences that most of us are exposed to at some time in our lives (like being given difficult feedback). Be as honest as possible when answering the questions, as that will provide you with the most accurate assessment of your level of Emotional Intelligence. Once you have taken the emotional intelligence quiz, contact us to find out how we can help you improve your ability to manage

- 13. Please indicate the country where you live ***This question is required.**
- 14. My gender is ***This question is required.**
- 15. What year were you born? ***This question is required.**
- 16. My Industry is in ***This question is required.**
- 17. My job level is ***This question is required.**

Other E-IQ tests I have examined seem not to talk much about the emotions themselves. This emotional intelligence quiz does. What about Love in relationship? Hate in relationship? Grief? Terror? Anger? Jealousy? Shame? Etc? This E-IQ emotional intelligence test will show you where your emotional intelligence responses (& those of many in this culture) might be stuck and need work (via self-help or therapy). Unlike an IQ test, there is no scoring of this E-IQ emotional intelligence test that compares you with others. The below questions were selected because each would be answered in a less-than-optimum way by millions of us. Note: this E-IQ test is thought – provoking (and offensive to some).

1	T	F	I do not get angry when verbally attacked.
more: http://www.psychologyhelp.com/emot92.htm			
2	T	F	I am comfortable with others' grief, even those in close relationship to me.
more: http://www.psychologyhelp.com/emot94.htm			
3	T	F	I get angry or fearful when physically threatened.
more: http://www.psychologyhelp.com/emot94.htm			
4	T	F	I am able to decide to love another and then do so.
more: http://www.psychologyhelp.com/emot93.htm			
5	T	F	I am comfortable with others' anger and hate.
more: http://www.psychologyhelp.com/emot92.htm			
6	T	F	I worry regularly in some circumstances.
more: http://www.psychologyhelp.com/emot95.htm			

7	T	F	At times and in some circumstances I feel shame.
more: http://www.psychologyhelp.com/emot96.htm			
8	T	F	My anger keeps coming back in certain situations or with specific people.
more: http://www.psychologyhelp.com/emot92.htm			
9	T	F	For some things I have done in the past, I feel guilty.
more: http://www.psychologyhelp.com/emot96.htm			
10	T	F	At times I feel degraded and humiliated.
more: http://www.psychologyhelp.com/emot96.htm			
11	T	F	Regularly I get anxious about some situations.
more: http://www.psychologyhelp.com/emot95.htm			
12	T	F	Sadness keeps recurring for me over specific issues.
more: http://www.psychologyhelp.com/emot94.htm			
13	T	F	Jealousy is sometimes a part of my life.
more: http://www.psychologyhelp.com/emot96.htm			
14	T	F	I get blue or depressed regularly.
more: http://www.psychologyhelp.com/emot96.htm			
15	T	F	In my life is stress that never ends
more: http://www.psychologyhelp.com/emot95.htm			
16	T	F	I am comfortable hugging other adults of either sex.
more: http://www.psychologyhelp.com/emot93.htm			
17	T	F	I regularly allow my own wracking sobs and tears.
more: http://www.psychologyhelp.com/emot94.htm			
18	T	F	With a particular partner I am able to express all of the following: emotional love, physical love, words of love and lusty sexual love.
more: http://www.psychologyhelp.com/emot93.htm			
19	T	F	Once my sobs and tears have been released, I feel great.
more: http://www.psychologyhelp.com/emot94.htm			
20	T	F	I am comfortable saying the words "I love you" to men, women and children in a feeling way.
more: http://www.psychologyhelp.com/emot93.htm			

E-IQ Intelligence Test Answers: either run your mouse over green dots above or read below on this page.

As for my E-IQ emotional intelligence quiz **answers** for the emotionally healthy person; questions one through five are true, questions six through fifteen are false, and questions sixteen through twenty are true.

Most of you reading this will probably disagree with a few, perhaps many, of my E-IQ quiz answers. If so, you have to decide whether my E-IQ emotional intelligence quiz answers might be desirable and possible for you.

Past Survey

Q: If my anger at my spouse keeps coming back, I need:

- a divorce
- to change my expectations for him/her
- to change my spouse's behavior
- therapy
- none of the above

[View Results](#)
[Next Emotions Poll](#)

This site is all about self help with personality quizzes, two online self help books, and a large directory of self help related sites accessible from the ABCs of Self Help main page.

QUESTIONNAIRE OF SELIGMEN et al.

Instructions and sample item from the Attributional-Style Questionair (by Seligman et al., 1979)

Please try to vividly imagine yourself in the situations that follow. If such a situation happened to you, what would you feel would have caused if this event happened to you. Please write this cause in the blank provided after each event. Next we want you to answer some questions about the cause and a final question about the situation. To summarize, we want you to:

1. Read each situation and vividly imagine if happening to you.
2. Decide what you feel would be the major cause of the situation if it happens to you.
3. White one cause in the blank provided.
4. Answer 3 questions about the cause.
5. Answer one question about the situation.
6. Go on to the next situation.

SAMPLE: TO HAVE BEEN LOOKING FOR A JOB UNSUCCESSFULLY FOR SOME TIME

1. Write down one major cause _____
2. Is the cause of your unsuccessful job search due to something about you or something about other people or circumstances? (Circle one number).

Today due to other people or circumstances.	Totally due To me
1.....2.....3.....4.....5.....6.....7	
3. In the future when looking for job, will first cause again be present? (Circle one number).

Will never again be present	Will always be present
1.....2.....3.....4.....5.....6.....7	
4. Is the cause something that just influences looking for a job, or does it also influence other areas of your life? (Circle one number).

Influences just this particular situation	Influences all situations in my life
1.....2.....3.....4.....5.....6.....7	
5. How important would this situation be if it happened to you? (Circle one number)

Not at all important	Extremely important
1.....2.....3.....4.....5.....6.....7	

Beck's short depressive scale

Sadness	0	I do not feel sad.
	1	I feel sad.
	2	I am sad all the time and I can not snap out of it.
	3	I am so sad and unhappy that I can not stand it.
Pessimism	0	I am not particularly discouraged about the future.
	1	I feel discouraged about the future.
	2	I feel I have nothing to look forward to.
	3	I feel that the future is hopeless and that things can not improve.
Guilty	0	I do not feel particularly guilty.
	1	I feel guilty a good part of the time.
	2	I feel guilty quite most of the time.
	3	I feel guilty all of the time.
Self-dislike	0	I don't feel disappointed of myself.
	1	I am disappointed with myself.
	2	I am disgusted with myself.
	3	I hate myself.
Self-accusations	0	I do not feel I am any worse than anybody else.
	1	I am very critical of myself on my weakness or mistakes.
	2	I am blame myself all the time for my faults.
	3	I blame myself for everything bad that happens.
Suicidal ideas	0	I do not have any thoughts for killing myself.
	1	I have thoughts of keeling myself.
	2	I would like to kill myself.
	3	I would kill myself if I have the chance.

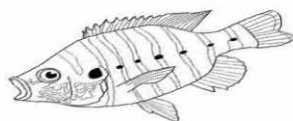
The words to the left will not appear in the actual inventory but are given here to indicate what attitudes each group of items is mean to measure. I total score is obtained by summing the numbers (1, 2, 3) associated with a subject's response to each item.

Mankoff's 3 fishes (Where is your place in the world)

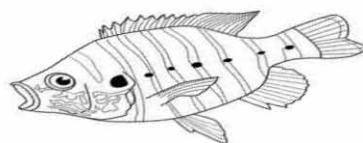
There is no justice in the world



There is some justice in the world



The world is very justice





v 0477

Mood/Depression
Questionnaire

CRTN: ___ CRF number: ___ Page 20 patient inits: ___

Week 2

Mood/Depression Assessment Questionnaire

1. Since your last visit have you felt depressed, sad or blue much of the time?

yes

no

2. Sines your last visit have you often felt helpless about the future?

yes

no

3. Since your last visit have you had little interest or pleasure in doing things?

yes

no

4. Since your last visit have you had trouble sleeping many nights?

yes

no

Are two (2) or more of the above questions marked YES while undergoing treatment in this protocol?

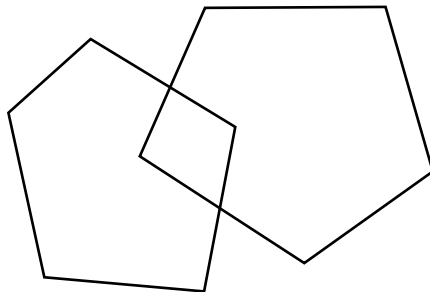
yes → complete a Beck Depression Inventory. If score is 30 or less, patient may continue in the study. If score is ≥ 31 , patient will need to complete all final assessments and be dropped from the study. The investigator may recommend that the patient be referred for a professional psychiatric assessment.

no

Box 2: Mini-mental state examination questionnaire ^[15]

Orientation: (score 1 if correct)

1. Name this hospital or building
2. What city are you in now?
3. What year is it?
4. What month is it?
5. What is the date today?
6. What state are you in?
7. What country is this?
8. What floor of the building are you on?
9. What day of the week is it?
10. What season of the year is it?
11. Registration (score 1 for each object correctly repeated):
Name 3 objects (paper, chair, school) and have the patient repeat them. Score number repeated by the patient.
12. Attention and calculation: Subtract 7 from 100 in serial fashion to 65 (Max score = 5).
13. Recall: Score 1 for each Object recalled.
14. Language tests: (Repeat the sentence I say).
15. Confrontation: naming (watch, pen; max score = 2).
16. Comprehension: pick up the paper in your right hand, fold it into half, and set it on the floor (max score = 3).
17. Read and perform the command "close your eyes" (score = 1).
18. Write any sentence (subject, verb, object; score = 1).
19. Construction: copy the design below (score =1).



Max score = 30; if scores 20-25 = possible impairment; if scores less than 20 = definite impairment.

APPENDIX - II

1. Who paved the way of experimental Psychophysiology?

1. Freud;
2. Pavlov;
3. Adler;
4. Watson;
5. Smolenski

2. Who is the 1st scientist that thought that there is a connection between psychic and somatic illness?

1. Plato;
2. Freud;
3. Dunbar;
4. Aristotle;
5. Alexander.

3. Who is the father of psychoanalysis?

1. K. Jung;
2. A. Adler;
3. S. Freud;
4. M. Klein;
5. E. From.

4. Which of the mentioned structures are most important for our memory?

1. brain cells;
2. thalamus;
3. cortex;
4. DRA;
5. RNA;

5. Which of the counted brain structures are not included in the Emotional Papez's circuit?

1. nucleus suprahiasticus;
2. corpora mamillaria (mammillary bodies);
3. epiphysis;
4. hippocampus;
5. thalamus;

6. Schizophrenia is characterised with?

1. Visual hallucinations.
2. Depressive delusions;
3. Mood disturbances;
4. Obsessions;
5. Paranoid delusions.

7. Hypnotherapy is used in?

1. Neurotic disorders;
2. Dementia;
3. Schizophrenia;
4. Depression;
5. Autism.

8. Confabulations are typical for?

1. Neurotic disorders;
2. Schizophrenic disorders;
3. Affective disorders;
4. Delirium tremens;
5. Paralysis progressive;

9. Visual hallucinations are typical for?

1. Schizophrenia;
2. Depression;
3. Exogenous psychoses;
4. Neurotic disorders;
5. Autism.

10. Which of the counted symptoms is not typical for autism?

1. Stereotype – repetitive movement, such as hand flapping, head or body rolling;
2. Sameness – is resistance to change;
3. Visual and verbal hallucinations;
4. Sensory abnormalities – 90% of them distress from loud noises (hair dresser, washing-machine, vacuum cleaner);
5. Self-injury – included movements that injure or can injure the personq such as eye-pocking, skin-picking, hand-biting, and head-banging.

11. Hypermnesia is a disturbance of?

1. Emotions;
2. Memory;
3. Volition;
4. Perception;
5. Thinking.

12. The first intelligence test for little schoolchildren is done by?

1. J. Watson;
2. G. Hall;
3. A. Binet & Th. Simon;
4. J. Raven;
5. Wechsler.

13. Marked the symptom that is not typical for bulimia nervosa?

1. Recurrent episodes of binge eating;
2. The binge eating and inappropriate compensatory behaviours both occur, on average at least twice a week for 3 months.
3. The disturbance does not occur exclusively during episodes of anorexia nervosa.
4. The binge eating and inappropriate compensatory behaviours both occur, during pregnancy for the women and after a rich banquet.
5. Self-evaluation is influenced by body shape and weight.

14. Typical for endogenous depression is?

1. Depersonalizations;
2. Visual hallucinations;
3. Depressive delusions;
4. Suicide ideas;
5. Phobia.

15. Suicidal ideations are more typical for?

1. Schizophrenia;
2. Panic disorder;
3. Obsessive compulsive disorder;
4. Major depressive episode;
5. Delirium tremens.

16 Schizophrenia is characterised with:

1. Visual hallucinations.
2. Hypermnesia;
3. Hyperthymia;
4. Obsessions;
5. Commentary auditory hallucinations.

17. Oedipus complex is described by?

1. A. Freud;
2. E. Fromm;
3. S. Freud;
4. M. Klein;
5. K. Jung.

18. How many crises there are in childhood?

1. Only one;
2. Four crises;
3. Three crises;
4. Five crises;
5. Two crises.

19. Autistic behaviour in childhood is typical for?

1. Child schizophrenia;
2. Autism;
3. Hyperkinetic syndrome;
4. Psychogenic mutism;
5. Behaviour disturbances.

20. Psychotherapy in childhood is not used in?

1. Attention Deficit and hyper-activity disorder (ADHD);
2. Child phobia;
3. Child schizophrenia;
4. Enuresis nocturna;
5. Anorexia nervosa.

21. Intellectual disturbance is typical for?

1. Autism;
2. Mental retardation;
3. Tick disorders;
4. Somnambulism;
5. Enuresis noctuna.

22. Exhaustion phase is typical for:

1. Stockholm syndrome;
2. GAS of Hans Selye;
3. In Freud hypothesis for SS;
4. Such a phase is described in terminal phase of patients with heavy somatic disorders;
5. Both in SS and GAS.

23. How many stages of GAS by Hans Selye are described?

1. One stage;
2. Five stages;
3. Three stages;
4. Two stages;
5. Seven stages.

24 Who of the following authors said that the “refrigerator mother” is the main cause for Autism?

1. Bruno Bettelheim;
2. Melany Klein;
3. Anna Freud;
4. Utta Frith;
5. Frances Tustin.

25. Which of the counted brain structures are not included in the Emotional Papez’s circuit?

1. nucleus suprahypophysialis;
2. corpora mammillaria (mammillaris bodies);
3. epiphysis (pineal gland);
4. hippocampus;
5. thalamus.

26. Hypnotherapy is used in?

1. Dementia;
2. Schizophrenia;
3. Depression;
4. Neurotic disorders
5. Autism.

27. The levels of Testosterone in people are higher in one of the counted periods:

1. Before the age of 20 years;
2. 21-35 years;
3. 36-49 years;
4. 41-45 years;
5. After 45 years.

28. Luria test is examined?

1. Memory;
2. Attention;
3. Intelligence;
4. Emotions;
5. Personality.

29. Which of the following symptoms is not typical for endogenous depression is:

1. Hypobulia;
2. Guilty;
3. Grandiose delusions;
4. Suicide ideas;
5. Feel better in the evening.

30. Can we use psychotherapy in Schizophrenic patients?

1. Never;
2. Only at the beginning of the hospitalization;
3. Yes, but when the patient is improved;
4. Psychotherapy is dangerous for these patients;
5. Psychotherapy is necessary only for their relatives.

31. Tactile hallucinations could be observed in:

1. Schizophrenic patients;
2. Depression;
3. ADHD;
4. Anxiety disorders;
5. Autism.

32. Which of the counted symptoms is not typical for anorexia nervosa?

1. Refused to maintain body weight at or above a minimal weight for age and height (to make expected weight gain during period of growth, leading to body weight less than 85% of that expected);
2. Intense fear of gaining weight or becoming fat, even though under-weight;
3. The child has no appetite;
4. Amenorrhea in 3 consecutive months.
5. Self-evaluation is influenced by body shape and weight.

33. Is there any correlation between the Level of Testosterone and the Aggression?

1. There is no correlation;
2. The correlation is important only for females;
3. The correlation between Testosterone and Aggression is very important;
4. Some time there is a correlation, but some time there is no correlation;
5. The correlation is not important.

34. "Electra" complex is described by:

1. Jung;
2. Adler;
3. Melany Klein;
4. Sigmund Freud;
5. Anna Freud.

35. Dark therapy is used in:

1. Schizophrenia;
2. Endogenous depression;
3. Neuroses;
4. Manic state;
5. Autism.

36. Electroconvulsive therapy is obliged:

1. Neuroses;
2. Autism;
3. Child schizophrenia;
4. Catatonic stupor;
5. Delirium tremens.

37. Defence Mechanisms are described by:

1. A. Freud;
2. E. Fromm;
3. S. Freud;
4. M. Klein;
5. K. Jung.

38. What kind of therapy is Light therapy?

1. Chronobiological therapeutic method.
2. Psychotherapeutic method.
3. Electrophysiological method.
4. Hypnotherapeutic method.
5. Electroacupuncture

39. When the informed consent from the patients is absolutely obliged? (Show the incorrect answer).

1. It is not necessary to have the informed consent during the medical interview.
2. When must be done electroshock therapy;
3. It is necessary to have at least the patient's oral agreement when we will begin to use any kind of therapy.
4. It is obliged only when we use hypnotherapy;
5. The inform consent is necessary if the patients is included in and experimental study.

40. Low values of IQ are typical for:

1. Autism;
2. Child phobia;
3. Tick disorders;
4. Dementia
5. Enuresis nocturna;

41. People with morning type rhythm are characterized with?

1. They feel better in the evening;
2. Their mood and working capacity are better early in the morning;
3. They do not find any fluctuations of mood and vigor;
4. Their mood and vigor fluctuate during the day, but it is more express in the morning;
5. Their mood is better in morning, but their working capacity is better in the afternoon.

42. The typical chronobiological feature for schizophrenia is:

1. Synchronization between the circadian rhythms;
2. Disturbed sleep;
3. Desynchronization between temperature and pulse;
4. Waking early in the morning;
5. Fluctuation of the circadian rhythms.

43. Sleep deprivation is used in:

1. Schizophrenia with depressive syndrome;
2. Neurotic disorder with depressive syndrome;
3. Sleep disturbances;
4. Endogenous depression;
5. Panic disorders.

44. Which of the counted methods is not important for patients with serious psychological problems?

1. Anthropometric studies;
2. The tests for intelligence;
3. Hormonal examinations;
4. Personality examinations;
5. Attention' examinations.

45. How many EEG-stages are found during sleep?

1. There are no stages;
2. Only one stage – REM;
3. Only 2 – awake and REM sleep;
4. Three stages;
5. 7 stages.

46. Which of the following hormones are important for the appearance of winter depression?

1. Melatonin;
2. Serotonin;
3. Testosterone;
4. Epinephrine;
5. Cortisol plasma levels.

47. Is there any correlation between anxiety and the values of Epinephrine and Nor-epinephrine?

1. There is no correlation;
2. The values of Epinephrine and Nor-epinephrine are the highest for patients that are with moderate expressed anxiety;
3. The values are the lowest for persons that are free of anxiety;
4. The values are the highest for patients that are with very high expressed anxiety;
5. The values are almost the same for the patients that are free of anxiety, moderate and heavy anxiety.

48. What does the Milgram's experiments explains?

1. Aggression;
2. Depression;
3. Emotions;
4. Schizophrenia;
5. Panic disorders.

49. Which of the following hormone is connected with the aggression?

1. Epinephrine;
2. Norepinephrine;
3. Melatonin;
4. Testosterone;
5. Cortisol.

50. "A spindle" type rhythm is typical for:

1. Neuroses;
2. Epilepsy;
3. Endogenous depression;
4. Schizophrenia;
5. Mania.

51. Philip Zimbardo's experiment explains?

1. Mood disorders;
2. Obsessions;
3. Epilepsy;
4. Mania;
5. Aggression.

52. Which of the following psycho-therapeutic methods are connected with the Pavlov's conditioned/unconditioned reflexes?

1. Hypnoses;
2. Group psychotherapy;
3. Positive psychotherapy;
4. Behaviour psychotherapy;
5. Cognitive psychotherapy.

53. Winter depressions are connected with:

1. Seasons of the year;
2. Long days;
3. Long nights;
4. Life events;
5. The earth movement round the Sun.

54. What kind of method is Light therapy?

1. Chronobiological therapeutic method;
2. Psychotherapeutic method;
3. Electrophysiological method;
4. Hypnotherapeutic method;
5. Electroacupuncture.

55. The placebo mainly is used in?

1. Schizophrenic depression;
2. Epilepsy;
3. Experimental studies;
4. Endogenous depression;
5. Panic disorders.

56. What kind of method is EEG?

1. To measure heart activity;
2. To measure muscle activity;
3. To give information for brain activity;
4. To have information about handed-ness development of the individual;
5. To have information about brain blood pressure.

57. Who of the counted scientist used the experiment with little Albert?

1. Freud;
2. Adler;
3. Melani Klein;
4. Anna Freud;
5. John Watson.

58. The 1st questionnaire for the examination of the rhythms of mood and vigor was created by.

1. Pavlov;
2. Watson;
3. Hampp;
4. Adler;
5. Pflug.

59. The thought: "As we can not treat the eyes without the head, so we can not treat the body without our soul." Is written by:

1. Plato;
2. Socrates;
3. Herodotos;
4. Pavlov;
5. Dunbar.

60. Catatonic stupor is a disturbance of?

1. Qualitative disturbance of the volition;
2. Quantitative disturbance of the volition;
3. Mood disturbance;
4. Thought disturbance;
5. Disturbance of the perception.

61. Which of the following disturbances is not connected with the perceptions?

1. Visual hallucinations;
2. Hypomnesia;
3. Auditory hallucinations;
4. Depersonalizations;
5. Pseudohallucinations.

62. Which of the following symptom is not included in Kandinsky-Clerambault syndrome?

1. Patients thing that their mind is controlled by other persons;
2. The patient is as an automat and he is controlled by other forces;
3. Intellectual deficit;
4. Visual pseudohallucinations;
5. Auditorial pseudohallucinations.

63. Type A is characterized with the following signs (marked the wrong answer):

1. Very competitive, ambitious - wants quick promotions;
2. "Workaholic" It is – even at play;
3. They have been always in a hurry;
4. Hard driving;
5. Calm, their motto is: "What God decides".

64. Type A and type B behavior personality is described by:

1. Franz Alexander;
2. Dunbar;
3. Freud;
4. Selye;
5. Adler.

65. Parabulia is disturbance of:

1. Memory;
2. Attention;
3. Thinking;
4. Volition;
5. Thinking.

66. Morning type rhythm is a biological marker for?

1. Schizophrenia;
2. Catatonic stupor;
3. Neuroses;
4. Endogenous depression;
5. Autism.

67. The thought “Our soul can not be healthy if our body is ill” was written by:

1. Hippocrates;
2. Herodotos;
3. Plato;
4. Sokrates;
5. Demosten.

68. The following thought: “Normal is a fix idea, It is something as a product of our imagination” is written by:

1. Jung;
2. Freud;
3. Adler;
4. Frankel;
5. Lukas.

69. Fluctuating type rhythm in healthy persons could be a predisposition for?

1. Autism;
2. Schizophrenia;
3. Mental retardation;
4. Neuroses;
5. Endogenous depression

70. Verbal hallucinations are typical for:

1. Endogenous depression;
2. Neurosis;
3. Panic disorders;
4. Autism;
5. Schizophrenic disorder.

71. Daily type rhythm is characterized with:

1. No daily fluctuations of the rhythm of mood and vigor;
2. Their working activity is better in the morning;
3. Their mood is better in the evening;
4. They feel better in midnight;
5. Daily fluctuation of the mood.

72. Tactile and visual hallucinations are typical for?

1. Schizophrenia;
2. Depression;
3. Delirium tremens;
4. Somnambulism;
5. Autism.

73. Hypobulia is a disturbance of?

1. Emotions;
2. Volition;
3. Attention;
4. Conscious;
5. Thinking.

74. Type B behavior of personality is characterized with the following signs (marked the wrong answer).

1. Phlegmatic, calm and not hard working persons;
2. They are not concurrent type;
3. Their motto is: “What the God decides”;
4. Peaceful persons;
5. Very aggressive and concurrent type.

75. Embryo position is typical for?

1. Depression;
2. Panic disorder;
3. Catatonic stupor;
4. Psychogenic stupor;
5. Epileptic seizer.

76. Depressive stupor is characterized with?

1. Echolalia;
2. Echopraxia;
3. Embrio position;
4. Sad and depressed expression of the face;
5. Masklike facies oliosa.

77. Which is the name of the scientist that reported that the stimulation of the temporal lobes could lead to vivid recall of memories?

1. Pavlov;
2. Penfield;
3. Sperling;
4. McConnel;
5. Frank, Stein, Rosen.

78. What is the use of Pavlov's experiments of conditioned and unconditioned stimulus in psychiatry?

1. To study biochemistry in neuroses;
2. To learn more about brain structures in depression;
3. To understand the pathogeneses of schizophrenia;
4. To develop behavior psychotherapy in neuroses;
5. To learn more about pathogenesis of epileptic seizures.

79. Anaesthesia dolorosa psychic is a symptom of:

1. Endogenous depression;
2. Schizophrenia;
3. Panic disorder;
4. Epilepsia;
5. Delirium tremens.

80. Hypertymia is typical for?

1. Manic phase of AD;
2. Depressive phase of AD;
3. Panic disorder;
4. Somnambulism;
5. Bulimia nervosa.

81. Dysthymia is a serious state of?

1. Mania;
2. Paranoid schizophrenia;
3. Enuresis nocturna;
4. Endogenous depression;
5. Examenophobia.

82. Registration, retention and recall are stages of?

1. Stockholm Syndrome;
2. Sleep;
3. General Adaptive Syndrome;
4. Memory;
5. Volition.

83. Verbal hallucinations are not typical for?

1. Involution depression;
2. Manic phase;
3. Paralysis progressiva;
4. Alcohol hallucination;
5. Schizophrenic disorder

84. What will be your advice to the parents if their child is with light degree of mental retardation?

1. To be in a school for normal children;
2. To go in a special school for children with mental retardation;
3. Not to be in a normal school, because he will have many complexes;
4. To be educated at home, not to feel any complexes;
5. To go to school 1-2 years later.

85. Pseudoreminescence is a disturbance of?

1. Perceptions;
2. Thinking;
3. Memory;
4. Volition;
5. Emotions.

86. Perceveration and verbigeration are disturbances of?

1. Speech;
2. Thinking;
3. Volition;
4. Perceptions;
5. Memory.

87. Neologism is disturbances of?

1. Thinking;
2. Volition;
3. Attention;
4. Speech;
5. Consciousness.

88. Which of the following symptoms are not typical for endogenous depression?

1. Hypobulia;
2. Dysthymia;
3. Euphoria;
4. Suicide ideas;
5. Guilty.

89. Obsessions are disturbances of?

1. Mood;
2. Emotions;
3. Thinking;
4. Consciousness;
5. Attention.

90. Mania is not characterized with?

1. Hyperthymia;
2. Hyperbulia;
3. Fuga idearum;
4. Hypermnesia;
5. Paramnesia.

91. Obsessions and compulsions are typical for?

1. Schizophrenia;
2. Depression;
3. Obsessive-compulsive disorder;
4. Phobic neurosis;
5. Panic disorder.

92. Attention deficit and hyperactivity disorder are characterised with?

1. Emotional disturbances;
2. Intellectual deficit;
3. Hypomnesia;
4. Problems with attention;
5. Volitional problems.

93. Suicide ideas are typical for:

1. Affective disorders, depressive phase;
2. Affective disorders – manic phase;
3. Somnambulism;
4. Delirium tremens;
5. Autism.

94. Good prognostic signs for ADHD are: (Marked the incorrect answer).

1. One of the parents is with ADHD;
2. High intelligence;
3. Good family relationship;
4. Lower number of symptoms;
5. No correlations with other psychiatric illness.

95. Sleep deprivation is used for?

1. Normal persons with sleep problems;
2. Endogenous depression;
3. Schizophrenia with depressive symptoms;
4. Agoraphobia;
5. Winter depression.

96. Who is the author of para-adaptive reactions of thinking?

1. Pavlov;
2. Freud;
3. K. Zaimov;
4. Adler;
5. Watson.

97. Mental retardation is disturbance of?

1. Emotions;
2. Intelligence;
3. Memory;
4. Volition;
5. Thinking.

98. Manic delusions are disturbances of?

1. Memory;
2. Thinking;
3. Intelligence;
4. Volition;
5. Emotions.

99. Stuttering/stammer is a disturbance of:

1. Thinking;
2. Volition;
3. Memory;
4. Speech;
5. Attention.

100. Para-adaptive reactions of thinking could be used for?

1. Diagnosis;
2. Positive psychotherapy;
3. Electroconvulsive therapy;
4. Group therapy;
5. Family therapy.

101. Which of the counted elements are not diagnostic criteria for Stockholm' syndrome?

1. The hostages have the feeling of sympathy towards the usurper;
2. The hostages have the feeling of confidence towards the usurper;
3. The hostages develop positive feeling towards the usurper;
4. The hostages are hostility towards criminal organism that would like to help them;
5. The hostages killed his usurper.

102. Which of the following symptoms is typical for autism?

1. Stereotypes;
2. Strange phobias;
3. Eye contact is absent;
4. Strange behaviour;
5. Paranoid delusions.

103. Which of the following hormones are the most important for the development of psychosomatic disorders?

1. Cortisol;
2. All of them;
3. Epinephrine;
4. Thyroid hormone;
5. ACTH.

104. Which of the following symptoms is more typical for Neurotic disorders?

1. Paranoid delusions;
2. Visual hallucinations;
3. Verbal hallucinations;
4. Anxiety;
5. Parabulia.

105. Typical for Delirium tremens is:

1. Verbal hallucinations;
2. Visual & tactile hallucinations;
3. Paranoid delusions;
4. Depersonalizations;
5. Hypermnesia.

106. Which of the counted somatic symptoms is not typical for anorexia nervosa?

1. Epileptic seizures;
2. Electrolytes dysbalance;
3. Anaemic syndrome;
4. Sleep disturbances;
5. Amenorrhea in 3 consecutive months.

107. Who is the 1st scientist that thought that there is a connection between cortisol plasma levels and endogenous depression?

1. Pflug;
2. Halberg;
3. Carrol et al.;
4. Rosenthal;
5. Dunbar.

108. Which of the following symptoms is not typical for delirium tremens?

1. Absence of orientation for place;
2. Absence of orientation for time;
3. Visual and tactile hallucinations;
4. Paranoid delusions;
5. Anxiety during the night;

109. Pavlov's experiments of conditioned or unconditioned stimulus lies at the root of:

1. Positive psychotherapy;
2. Cognitive psychotherapy;
3. Roger's psychotherapy;
4. Behavioral psychotherapy;
5. Hypnotherapy.

110. Paranoid delusions and verbal hallucinations are typical for?

1. Delirium tremens;
2. Involution depression;
3. Somnambulism;
4. Schizophrenia;
5. Autism.

111. Typical signs for Panic disorder is?

1. Paranoid delusions;
2. Visual hallucinations;
3. Daily fluctuation of mood;
4. Sleep disturbances;
5. Anxiety and phobia.

112. Hypnotherapy could not be used: (marked the wrong answer).

1. Informed consent;
2. The presence of another person;
3. During the séance the client and the psychotherapist must be alone;
4. The client must be informed about the method;
5. The psychotherapist must explain everything to the client about this method.

113. Visual hallucinations are typical for?

1. Agoraphobia;
2. After use of some stimulants;
3. Bulimia nervosa;
4. Stuttering;
5. Endogenous depression.

114. The thought “One of the greatest mistakes of the Greece physicians is that there are doctors for the soul and doctors for the body. They can not understand that they must treat the soul and the body at the same time” was written by:

1. Socrates;
2. Hippocrates;
3. Democrates;
4. Plato;
5. Galen.

115. Marked the somatic symptom that is not typical for bulimia nervosa?

1. Caries of the front dentition;
2. Anaemic syndrome;
3. Some times epileptic seizures;
4. Headache;
5. Hormonal dysfunction.

116. Confabulations are typical for?

1. Schizophrenic disorders;
2. Autism;
3. Paralysis progressive;
4. Somnambulism;
5. Delirium tremens.

117. Psychotherapy in childhood is not used in?

1. Attention Deficit and hyperactivity disorder (ADHD);
2. Child phobia;
3. Somnambulism;
4. Bulimia nervosa;
5. Anorexia nervosa.

118. Typical for endogenous depression is:

1. Derealization;
2. Visual hallucinations;
3. Depersonalizations;
4. Suicide ideas;
5. Zoophobia.

119. The author of sleep deprivation is:

1. Pflug and Tolle;
2. N. Rosenthal;
3. Lewy;
4. Caroll et al.;
5. All of them.

120. Sleep disturbances are typical for patients with:

1. Panic disorders;
2. Dementia;
3. Mental retardation;
4. Depression;
5. Autism.

121. Suicidal ideations are more typical for:

1. Major depressive episode;
2. Somnambulism;
3. Examenophobia;
4. Obsessive compulsive disorder;
5. Delirium tremens.

122. Pseudoreminiscence is a disturbance of:

1. Consciousness;
2. Emotions;
3. Memory;
4. Volition;
5. Attention.

123. The symptoms of delirium tremens are strongly expressed during:

1. During the night;
2. Early in the morning;
3. At dinner time;
4. In winter;
5. In the afternoon.

124. Which of the counted signs is not typical for Serial killers (SK)?

1. They may exhibit varying degree of mental illness as schizophrenia, depression, epilepsy, psychopathic, somnambulism;
2. SK could be very attractive, charming, with good communications, well dressed, sympathetic persons;
3. Most of the SK are with low-average IQ;
4. They are ethic and honest persons;
5. Social isolation is typical for SK.

125. Catatonic stupor is disturbance of:

1. Attention;
2. Volition;
3. Thinking;
4. Consciousness;
5. Emotions.

126. The informed consent is absolutely necessary for:

1. When we measure the blood pressure;
2. When we measure the pulse rate;
3. When the patient is included in a group for testing new medicaments;
4. When we ask the patient for his childhood;
5. When we measure his temperature.

127. Intellectual disturbances are typical for?

1. Enuresis nocturna;
2. Anorexia nervosa;
3. Mental retardation;
4. Tick disorders;
5. Delirium tremens.

128. Which of the following symptom is not typical for endogenous depression?

1. Guilty;
2. Depressive delusions;
3. Suicide ideas;
4. Feel better in the evening;
5. Megalomaniacal ideas.

129. Verbal hallucinations with commentary character are typical for?

1. Autism;
2. Personality disorders;
3. Schizophrenic disorders;
4. Zoophobia;
5. Enuresis nocturna.

130. Hamilton Depressive scale is used for patients with:

1. Depression;
2. Manic state;
3. Autism;
4. ADHD;
5. Somnambulism.

131. Retro-grade amnesia is a disturbance of?

1. Attention deficit;
2. Emotions;
3. Memory;
4. Volition;
5. Consciousness;

132. Which of the following hormones is not very important for endogenous depression?

1. Melatonin;
2. Serotonin;
3. Gastrin;
4. Epinephrine;
5. Cortisol plasma levels.

133. Attention could not be evaluated only by?

1. Parents' information;
2. Observation during the examination of the child;
3. Shapius labyrinth;
4. To please him to read a text;
5. To count the months of the year.

134. What is better for the little child till the age of 3 (the incorrect answer is...)?

1. To visit crèche;
2. The parents to care for the child;
3. To arrange a special wife to care for the child at home;
4. His grandmother to care for the child when the parents are busy;
5. Some relatives could care for the child if the parents are busy.

135. Could negative emotions provoke some disorders? (underlined the wrong answer).

1. They could ruin our immune system;
2. They could be a key for some psychosomatic disorders;
3. They could provoke psychoses;
4. They could provoke neurotic disorders;
5. They did not influence of our psychic state.

136. Which is the best therapy for persons with winter depression?

1. The best therapy for them is the bright therapy;
2. They need a very serious therapy with antidepressant drugs;
3. They need only psychotherapy;
4. They do not need any therapy;
5. ECT is absolutely obliged.

137. Hans Selye is the author of:

1. Cognitive psychotherapy;
2. Stockholm's syndrome;
3. General Adaptive syndrome;
4. Hypnotherapy;
5. The experiment with the little Albert.

138. Which of the counted symptoms is not a disturbance of the thought?

1. Paranoid delusions;
2. Manic delusions;
3. Obsessive-compulsive ideas;
4. Hyperbulia;
5. Depressive delusions.

139. Marked the author that did not create a scale for depression?

1. Beck;
2. Hamilton;
3. Zung;
4. Binet;
5. Rosenthal.

140. Which of the counted data are not very important for the medical anamnesis?

1. Childhood;
2. Family anamnesis;
3. Damage habits;
4. The patient's personality;
5. His address registration.

141. Which of the counted symptoms are not connected with anxiety?

1. Low intelligence;
2. Headache;
3. Dry mouth;
4. Tachycardia;
5. Urinary frequency.

142. How could we help 33 years old swimmer patients with serious somatic problems (Brain stroke, myocardial infarct, trauma of his hand, and s. o.)? The wrong answer is...

1. To go on pension;
2. To become a sport journalist;
3. To become a sport lawyer;
4. To become a sport judge;
5. To become a sport trainer.

143. The book "Jatrogenia" was written by:

1. Feud;
2. Shipkovenski;
3. Adler;
4. Cholakov;
5. Carl Roger.

144. The method for decapsulation is introduced in Bulgaria by:

1. K. Zaimov;
2. Shipkovenski;
3. K. Cholakov;
4. T. Tashev;
5. V. Jonchev.

145. Who are the authors of the scale for Social readaptation?

1. Dunbar;
2. Alexander;
3. From;
4. Holmes and Rahe;
5. Hamilton.

146. „Spindle type rhythm“ is typical for:

1. Panic disorders;
2. Endogenous depression;
3. Schizophrenia;
4. Epilepsia;
5. Manic episode.

147. Jean-Martin Charkot introduced the method of:

1. Positive psychotherapy;
2. Gestalt psychotherapy;
3. Behavioral psychotherapy;
4. Cognitive psychotherapy;
5. Hypnotherapy.

148. Please point the symptom that is not typical for autism:

1. Stereotypes;
2. Disturbed attention;
3. Hallucinations;
4. Pain anesthesia;
5. Repetitive behavior.

149. Who described the winter depression?

1. All of them;
2. N. Carrol et al. ;
3. Rosenthal;
4. Tolle;
5. B. Pflug.

150. Which of the counted symptoms is not typical for Diogenes/ Plyushkin Syndrome?

1. Perfectionist;
2. Animal hoarding;
3. Book hoarding;
4. Shopping mania;
5. Flower mania.

151. Which of the counted symptoms is not typical for manic episode?

1. Hyperbulia;
2. Fuga idearum;
3. Hypobulia;
4. Increased sexual activity;
5. Grandeur megalomania.

152. Which of the following symptoms is not typical for depression?

1. Hypobulia;
2. Hypothimia;
3. Guilty;
4. Agitation;
5. Increased sexual activity.

153. Which is the best therapy for a child that begins to stutter during the first 5-10 days?

1. Therapy of silence;
2. To be included in a group for special speech exercises;
3. Therapy of silence, to recite rhyme verses and to sing songs;
4. To repeat the words many times;
5. To be medicated with diazepam.

155. Congrade, retrograde and anterograde amnesia are disturbance of:

1. Perception;
2. Attention;
3. Memory;
4. Consciousness;
5. Volition.

156. Which of the following thinking disturbances is connected with the disturbance of the content of the sentence?

1. Incoherence (word salad);
2. Neologism;
3. Paranoid delusions;
4. Verbigeration;
5. Echolalia.

157. Which of the counted structures is not included in the brain structure?

1. The thalamus;
2. The hippocampus;
3. The heart;
4. The limbic system;
5. The cerebral cortex.

158. When we can speak that ID is a sever degree?

1. The values of IQ are 35-40;
2. The values of IQ are lower than 35;
3. The values of IQ are 50-69;
4. The values of IQ are more than 69;
5. The values of IQ are 0-25.

159. Which of the counted therapeutic methods is not the correct method for children with ADHD?

1. Psychotherapy;
2. Punishment for poor behavior;
3. Family therapy;
4. Psychotherapy and pharmacotherapy;
5. Behavior and cognitive therapy with the parents.

160. Who of the authors for the 1st time reported that "desynchronosis" is typical for endogenous psychoses?

1. Pflug;
2. Carrol et al.;
3. N. Rosenthal;
4. F. Halberg;
5. N. Madjirova.

161. The definition "The real picture consists of nothing but exceptions to the rules" is written by:

1. Viktor Frankel;
2. Erikson;
3. Freud;
4. Jung;
5. Adler.

162. Which of the counted hypothesis are not important for Autism?

1. Genetic predisposition;
2. Immunizations;
3. Epigenetic;
4. Apoptosis;
5. Embryo Damage.

163 What is the therapy for a child with somnambulism (The wrong answer is...)?

1. To wake him;
2. To sleep in a dark room;
3. To put an wet towel in front of the bed and to sleep without stockings;
4. To lock the door to the balcony;
5. Not to have a contact with electrical apparatus.

164. The stage “Industry-Inferiority”, known as Robinson Crusoe is one of the stages of:

1. Eric From;
2. Erik. Erikson;
3. Sigmund Freud;
4. Margaret Mahler;
5. Jean Piaget.

165. The four main temperaments “Sanguine, choleric, phlegmatic and melancholic” were described for the 1st time by:

1. Aristhotels;
2. Kretschmer;
3. Sheldon;
4. Galen;
5. Hippocrates and Galen.

166. The definition “A normal reaction to an abnormal situation is a normal behavior” is given by:

1. Freud;
2. Victor Frankel;
3. Jung;
4. Erikson;
5. Adler.

167. The early waking at 4-5 o'clock in the morning could be diagnostic criteria for?

1. Neuroses;
2. Endogenous depression;
3. Schizophrenia;
4. Manic phase;
5. Dementia.

168. Who is the author of the method of reproduction?

1. Zaimov;
2. Kristnikov;
3. Cholakov;
4. Tashev;
5. Jonchev.

169. The method of decapsulation is:

1. Chronobiological method;
2. Hypnotherapeutic method;
3. Positive psychotherapy;
4. Electroconvulsive method;
5. Method of reproduction.

170. Bright therapy is used for:

1. Winter depression;
2. Schizophrenia;
3. Endogenous depression;
4. Sleep disorders;
5. Obsessive compulsive disorder.

171. “Moniliform type rhythm” is typical for:

1. Schizophrenia;
2. Neuroses;
3. Depression;
4. Enuresis nocturna;
5. Delirium tremens.

172. Not typical for autism is:

1. Phobia from a new situation;
2. Phobia from noises as washing machine, vacuum cleaning and s. o.;
3. Repetitive behavior;
4. Pain anesthesia;
5. Hallucinations.

173. Suicide ideas are more typical for?

1. Agoraphobia;
2. Panic disorder;
3. Obsessive compulsive disorder;
4. Major depressive episode;
5. Intoxications.

174. Confabulations are disturbance of:

1. Thinking;
2. Memory;
3. Perceptions;
4. Volition;
5. Attention.

175. Show with a line the hormone that is secreted by a given gland.

The gland		The Hormone
Pineal gland		Melatonin
Hypothalamus		Epinephrine, Norepinephrine
Testis		Insulin
Adrenal-medulla		Testosterone
Adrenal Cortex		Cortisol
Pancreas		ACTH

Answers of the questions:

No of the question	No of the answer	No of the question	No of the answer
1	1	50	3
2	1	51	5
3	3	52	4
4	4	53	3
5	3	54	1
6	5	55	3
7	1	56	4
8	5	57	5
9	3	58	3
10	3	59	2
11	2	60	1
12	3	61	2
13	4	62	3
14	3	63	5
15	4	64	2
16	5	65	4
17	3	66	3
18	3	67	2
19	2	68	2
20	3	69	4
21	2	70	5
22	2	71	1
23	3	72	3
24	1	73	2
25	3	74	5
26	4	75	3
27	2	76	4
28	1	77	2
29	3	78	4
30	3	79	1
31	1	80	1
32	3	81	4
33	3	82	4
34	4	83	2
35	4	84	1
36	4	85	3
37	3	86	2
38	1	87	1
39	1	88	3
40	4	89	3
41	2	90	5
42	3	91	3
43	4	92	4
44	1	93	1
45	4	94	1
46	1	95	2
47	2	96	3
48	1	97	2
49	4	98	2

No of the question	No of the answer	No of the question	No of the answer
99	4	137	3
100	2	138	4
101	5	139	4
102	5	140	5
103	2	141	1
104	4	142	1
105	2	143	2
106	4	144	3
107	3	145	4
108	4	146	2
109	4	147	5
110	4	148	3
111	5	149	3
112	3	150	1
113	2	151	3
114	4	152	5
115	3	153	3
116	6	154	3
117	3	155	3
118	4	156	3
119	1	157	3
120	4	158	5
121	1	159	2
122	3	160	4
123	1	161	4
124	4	162	2
125	2	163	3
126	3	164	2
127	3	165	5
128	5	166	2
129	3	167	2
130	1	168	2
131	3	169	2
132	3	170	1
133	1	171	2
134	1	172	5
135	5	173	4
136	1	174	2

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The gland	The Hormone
Hypothalamus	ACTH
Pineal gland	Melatonin
Testis	Testosterone
Adrenal-medulla	Epinephrine, Norepinephrine
Adrenal Cortex	Cortisol
Pancreas	Insulin